

5 Changes in the level and structure of international production: the last one hundred years

JOHN H. DUNNING

5.1 INTRODUCTION

Alongside advances in the theory of foreign direct investment and the multinational enterprise, the last two decades have seen the emergence of a wealth of new descriptive material about the activities of corporations outside their national boundaries in which they have a controlling equity stake.¹ This material ranges from macro-statistical data on the stock or flow of foreign direct investment in, or between nation states, through *ad hoc* country and sectoral case studies, to individual business histories and company profiles. Between them, these new sources of information enable us to piece together a much more comprehensive and reliable picture of the growth and pattern of international production than was thought possible even fifteen years ago. Certainly, it is difficult to think of any branch of economics or business studies which has generated so much interest, and caused so many books, articles, reports and papers to be written since 1960, as that of the MNE.

There is, however, one major snag with much of the published data. That is that they are rarely directly comparable with each other. Moreover, some of the historical facts a first-year student reading a course in international business may reasonably expect to be told are just not available. We still have only a rough idea of the number of MNEs operating in 1914 or the value of their foreign investments at that time; and even today, very few countries publish the kind of information which scholars need to evaluate properly either the causes or the effects of international production. Thus, to present a statistical portrait of the growth of MNE activity, which might enable us to test our new theories – or even the old ones – in any rigorous

fashion, is not possible. Such testing must, at present, be largely confined to cross-sectional industry, firm or country data; and, certainly in the last twenty years, econometric studies of this kind have considerably enriched our understanding about the determinants of FDI.² But the most one can realistically expect from a broad overview of the kind presented in this chapter is an interpretation of major events, set within the framework, if not making use of the technical apparatus of recent theoretical advances. This is what the following pages seek to do.

The discussion proceeds in the following way. Section 5.2 reviews the main facts about the growth of international production over four periods in the last century, viz. from around 1870 to 1914, 1919 to 1939, 1945 to the mid-1960s, and the mid-1960s to the late 1970s. This section presents some new statistical estimates of the FDI stock in 1914, 1938, 1960, 1971 and 1978. Sections 5.3 to 5.5 attempt to explain and interpret these data, using the kind of conceptual framework favoured particularly by economists of the University of Reading; and a final section attempts to bring these strands of thought together.

5.2 THE FOREIGN ACTIVITIES OF FIRMS

(a) 1870–1914

Studies published in the last twenty or so years suggest that earlier scholars considerably underestimated the role of the MNE as an entrepreneur and as a transfer of intangible assets in the forty years prior to the First World War. By assembling widely disparate estimates of both the inward and the outward direct capital stake of countries, we can estimate that, by 1914, at least \$14 billion had been invested in enterprises or branch plants in which either a single or a group of non-resident investors owned a majority or substantial minority equity interest, or which were owned or controlled by first generation expatriates who had earlier migrated.³ This amount represented about 35 per cent of the estimated total long-term international debt at that time; a ratio considerably higher than was thought until fairly recently and, in relation to the national income of most capital-exporting countries, more significant than at any time before or since. There is also little doubt that, from the viewpoint of some home and host countries, FDI, both as a channel for the transfer of resources between countries, and as a means of controlling the use of these and complementary local inputs, played a no less important role than it has done since the mid-1950s, and a far greater one than it did

86 *The Growth of International Business*

in the inter-war period. There is also little doubt that several economies, particularly developing countries, and some sectors, particularly capital-intensive primary product and technology-intensive manufacturing sectors, were dominated either by affiliates of MNEs, or by foreign entrepreneurs who both financed these activities and organised the supply of technology and management for them. Indeed, the territorial compass of FDI was probably wider than it has been for most of the last thirty-five years; Eastern Europe and China, for example, were both attractive to Western businessmen in the years preceding the First World War, and there were few controls exerted on investment flows, or on the scope of the activities of foreign capitalists.

While for the first three-quarters of the nineteenth century, direct capital exports⁴ mainly comprised expatriate investment or finance raised in the home country by corporations or individual entrepreneurs to purchase a controlling equity interest in a foreign company,⁵ the subsequent forty years saw the infancy and adolescence of the type of activity which mainly dominates today, viz. the setting up of foreign branches by enterprises already operating in their home countries. This latter thrust began around the middle of the nineteenth century,⁶ gathered pace after 1875, and, by 1914 had become firmly established as a vehicle of international economic involvement.

As revealed in Table 5.1, the UK was, by far and away, the largest foreign capital stake holder in 1914, with the USA some way behind. However, even at that time, US direct investments were more directed to growth sectors, and a much larger proportion represented the activities of affiliates of MNEs rather than absentee equity investment by individuals or companies.⁷ Such country-specific differences were reflected in the structure of resource endowments, institutional mechanisms and existing international economic involvement. Thus, while Europe had accumulated a pool of marketable venture capital, entrepreneurship and management expertise, and was already a major portfolio capital exporter, the USA with none of this background was building a strong comparative advantage in corporate technology – management skills, which were often best exploited within the enterprises generating them. Table 5.1 also reveals that, in 1914, the German and French capital stakes were about the same; and that there were some Russian, Canadian and Japanese investments.

Table 5.2 shows that about three-fifths of the foreign capital stake in 1914 was directed to today's developing countries; but taking a contemporary definition of such countries to include all areas outside Europe and the USA, the figure rises to more than four-fifths. The

Table 5.1 *Estimated stock of accumulated foreign direct investment by country of origin 1914-78*

	1914	1938	1960	1971	1978
<i>Developed Countries</i>	\$m	\$m	\$bn	\$bn	\$bn
North America	14302	26350	66.0	168.1	380.3
USA	2652	7300	32.8	82.8	162.7
Canada	150	700	2.5	6.5	13.6
<i>Western Europe</i>	6500	10500	10.8	23.7	50.7
UK	45.5	39.8	16.2	23.7	12.9
Germany	1500	350	0.8	7.3	28.6
France	1750	2500	4.1	7.3	14.9
Belgium	12.2	9.5	6.1	4.2	3.8
Italy			1.3	2.4	5.4
Netherlands			1.1	1.7	1.4
Sweden			7.0	13.8	28.4
Switzerland			0.4	2.4	6.0
<i>Other Developed Countries</i>	1250	3500	2.0	9.5	27.8
Russia	300	450	—	—	—
Japan	2.1	1.7	—	—	—
Australia	20	750	0.5	4.4	26.8
New Zealand	180	300	1.5	2.5	4.8
South Africa	1.3	1.1	2.2	1.4	1.2
Other	neg	neg	1.2	2.5	5.2
<i>Developing Countries</i>	neg	neg	0.7	4.0	12.5
TOTAL	14302	26350	66.7	172.1	392.8
	100.0	100.0	100.0	100.0	100.0

Changes in level structure of international production 89

The data contained in these tables have been derived from a large number of sources but the main ones have been as follows:

1914 Allen and Donnithorne (China and Japan, 1954), Bagchi (India, 1972), Callis (South East Asia, 1942), Frankel, S. H. (Africa, 1938), Hou (China, 1965), Houston and Dunning (UK, 1976), Lewis (various 1938, 1945), McKay (Russia, 1970), Pamuk (Ottoman Empire, 1981), Paterson (Canada 1976), Rippy (Latin America, 1959), Svedberg (various, 1978).

1938 Allen and Donnithorne (China and Japan, 1954), Bagchi (India, 1972), Callis (South East Asia, 1942), Conan (Sterling Area, 1960), Hou (China, 1965), Lewis (various, 1938, 1945), Svedberg (various data collected by him, 1978), Tetchova (East Europe, 1974), United Nations (1949).

1960 Various government publications are cited in United Nations (UNCTC) (1981) and especially those of the United States (Department of Commerce), United Kingdom (Department of Trade), and Canada (Dominion Bureau of Statistics). See also Conan (Sterling Area, 1960) and Kidron (India, 1965).

1971 OECD (various dates), United Nations (UNCTC) (1978), (1981) and various government publications as cited therein.

1978 OECD (various dates), United Nations (UNCTC) (1978), (1981).

distribution among recipient nations was quite diffused, with the combined Russian and Chinese share exceeding that of Western Europe and only slightly less than that of North America. About 55 per cent of the total capital stake was accounted for by the primary-product sector, 20 per cent by railroads, 15 per cent by manufacturing activities, 10 per cent by trade and distribution and the balance by public utilities, banking and the like. The manufacturing investments, which were largely oriented towards local markets,⁸ were mainly concentrated in Europe, the USA, the UK Dominions and Russia; while, apart from iron ore, coal and bauxite, almost all mineral investments were located in the British Empire or in developing countries.

Of especial significance in this era were the raw material and agricultural investments; this was the heyday of the plantations, e.g. rubber, tea, coffee and cocoa; of cattle raising and meat processing, e.g. in the USA and Argentina; and of the emergence of the vertically integrated MNE in tropical fruits, sugar and tobacco. Indeed apart, perhaps, from some transnational railroad activity in Europe and Latin America, it was in the agricultural sector, more than any other, where the international hierarchical organisation first made itself felt, particularly in economies whose prosperity rested mainly on a single cash crop, the production and marketing of which was controlled by a few (and sometimes only one) foreign companies, e.g. Cuba (sugar), Costa Rica (bananas), Ceylon (tea) and Liberia (rubber).⁹

Even in those early days, there were distinct geographical and

90 The Growth of International Business

industrial patterns of FDI which varied with the home country of the investor. Some details of the location of manufacturing subsidiaries of 187 and 226 non-US based MNEs which existed in 1968 or 1971 are given in Table 5.3.¹⁰ Language, cultural, political and trading ties, as well as geographical distance, played a more important role than they do today. Thus, 72 per cent of US investment was in other parts of the American continent; while there was a strong colonial content in British, French and Belgian involvement in developing countries (Svedberg, 1981). For the most part, French and German manufac-

Table 5.3 Percentage Breakdown of Number of Manufacturing Subsidiaries of MNEs by Country of Location

(a) Subsidiaries Established pre-1914			
	US Based MNEs	UK Based MNEs	Continental European Based MNEs
<i>Developed Countries</i>	87.7	73.7	81.0
North America of which: USA	27.0	3.3	6.6
Canada	27.0	15.0	5.4
Europe of which:	57.5	41.7	73.2
Western Europe	51.7	21.6	61.8
Northern Europe	5.8	11.7	5.4
Southern Europe	0.0	8.4	6.0
Australia and New Zealand	1.6	8.4	0.6
Japan	0.8	3.3	0.0
South Africa	0.8	5.0	0.6
<i>Developing Countries</i>	12.2	26.3	19.0
Latin America of which: Mexico	8.1	16.2	1.2
Brazil	0.0	1.7	0.0
Middle East	2.5	1.7	0.0
Africa (other than South Africa)	4.1	3.3	15.4
Asia of which: India	0.0	3.4	0.6
TOTAL	100.0	100.0	100.0
Number of Subsidiaries	122	60	167

Source: Compiled from data first published in Vaupel and Curhan (1974)

Changes in level structure of international production 91

turing investments were sited elsewhere in Europe, while UK firms accounted for the great bulk of capital exports to the British empire outside Canada.

However, of the home countries, the UK was, perhaps, the most cosmopolitan foreign investor; *inter alia*, this reflected the diversity of her overseas possessions, her earlier technological lead and her established trading links. Her initial industrial investments were no less broadly based although, by 1914, UK MNE manufacturing activity was strongly oriented towards the production of consumer goods and heavy engineering equipment. The USA, by contrast, was developing a comparative investment advantage in the newer technology-intensive industries and in those supplying standardised products and/or consumer goods with a high income-elasticity of demand; while the Germans – as in trade – led the world in chemical investments.¹¹

The pattern of involvement by the leading capital exporters in resource-based sectors was much the same, though in different territories. However, there were some exceptions, which reflected differences in consumer tastes and distance of markets; for example, whereas the US MNEs dominated tropical fruit production, UK MNEs owned most of the foreign tea plantations. While US MNEs probably pursued a more systematic policy of vertical integration, there was, nevertheless, some backward integration by UK manufacturing companies to secure supplies of raw materials, e.g. by Cadbury in cocoa, Lever in vegetable oils, Dunlop in rubber. Trade and service investments followed the main commercial arteries of the home countries.

(b) 1918–38

The First World War and the years which followed saw several changes in the level, form and structure of international production. The war itself caused several European belligerents to sell some of their pre-war investments, while subsequent political upheaval and boundary changes further reduced intra-Continental European corporate activity, and eliminated it altogether from Russia. Only the USA remained fairly unscathed by these events but she, along with other countries, subsequently suffered from the collapse of international capital markets in the late 1920s and early 1930s. Nevertheless, because her foreign investments largely took the form of branch plant activities by MNEs, and were directed to sectors supplying products with an above income-elasticity of demand, her share of the world capital stock rose from 18.5 per cent in 1914 to 27.7 per cent in 1938.

92 The Growth of International Business

Overall, as Table 5.1 shows, the international capital stake rose quite substantially in the inter-war years.¹² There were also some changes in its geographical distribution; these are illustrated in Table 5.4, the data for which are derived from a similar source to those contained in Table 5.3.¹³ In spite of some sizeable West European investments in Central Europe (Teichova, 1974),¹⁴ the Americas, north and south of the USA, continued to attract more than

Table 5.4 Percentage Breakdown of Number of Manufacturing Subsidiaries of MNEs by Country of Location
(b) Subsidiaries Established 1920-38

	US Based MNEs	UK Based MNEs	Continental European Based MNEs
<i>Developed Countries</i>	78.0	71.5	74.4
North America	24.9	12.4	9.7
of which: USA	—	5.0	9.4
Canada	24.9	7.4	0.3
Europe	43.2	39.2	61.7
of which: Western Europe	38.4	29.5	47.6
Northern Europe	2.2	6.9	5.8
Southern Europe	2.6	2.8	8.3
Australia and New Zealand	6.2	15.7	1.9
Japan	0.8	—	1.1
South Africa	2.9	4.2	0.0
<i>Developing Countries</i>	22.0	28.5	25.7
Latin America	17.3	9.2	8.6
of which: Mexico	4.2	—	0.6
Brazil	2.6	1.8	2.8
Africa (other than South Africa)	—	5.1	1.9
Asia	3.2	11.0	3.0
of which: India	0.8	6.0	1.1
Middle East	1.5	3.2	11.3
TOTAL	100.0	100.0	100.0
Number of Subsidiaries	614	217	361

Source: Compiled from data first published in Vaupel and Curhan (1974)

Changes in level structure of international production 93

two-thirds of the US direct investment stake; the role of intra-European and US participation in Europe fell in the 1920s and recovered somewhat in the 1930s, as did European investments in the USA. There was also some retrenchment of European economic involvement in Latin America – particularly in the railroad sector; this was partly compensated by a slight increase in the export of capital to the UK Dominions and, prior to the Sino-Japanese War, a sharp rise in Western business activity in China (Hou, 1965).

There was also quite a lot of new MNE participation in the developing world in the inter-war years; this included new oil investments in the Mexican gulf, the Dutch East Indies, and the Middle East; copper and iron ore in Africa; bauxite in Dutch and British Guyana; nitrate in Chile; precious metals in South Africa and, perhaps most noteworthy of all, non-ferrous metals in South America. Indeed, in 1929, two experts on mining observed that 'the bulk of productive mineral resources of South America are owned by American interests' (quoted by Wilkins, 1974a, p. 106). Outside the mineral sector, the growing industrial demand for rubber led both US and European manufacturers to invest in plantations in Liberia, Malaysia and Dutch East Indies; while rising real incomes at home prompted a further flurry of activity by MNEs in sugar, tropical fruit and tobacco. There was also a sizeable expansion of public utility investments in Latin America by US firms. Both US and UK MNEs extended their foreign sales and marketing ventures into production in these years.

Yet though the number of new subsidiaries set up by MNEs continued to rise throughout the period, it was only in the 1930s that the value of the direct capital stake exceeded its pre-war figure. During this period, investments by Continental European firms went mainly to other parts of Europe and the USA, while US firms were strongly oriented to South America, Canada and the larger European countries.¹⁵ The first four Japanese manufacturing affiliates of the largest Japanese MNEs existing in 1970 were set up between 1920 and 1938 (Vaupel and Curhan, 1974).

(c) 1939-60

If the inter-war years witnessed a deceleration in the expansion of international business, the thirty-five years since the end of the Second World War have been ones of almost uninterrupted growth. The period may be conveniently divided into two phases. The first, up to around 1960, was one in which the USA dominated the international investment scene; of the increase in both the capital stake since 1938 and the number of new manufacturing subsidiaries (covered by

94 The Growth of International Business

the Vaupel and Curhan, 1974, study), the USA accounted for about two-thirds. The second, spanning the following two decades, witnessed the increasingly important role of first European, then Japanese and finally some Third World countries as international direct investors. Between 1960 and 1978, of the \$318 billion increase in the world direct capital stake, the USA accounted for 48 per cent and West Germany and Japan for 18 per cent; between 1971 and 1978 the respective ratios were 46 per cent and 22 per cent.¹⁶

The effect of the Second World War was similar to that of its predecessor, in that each of the main European belligerents was forced to divest many of its foreign assets; however, unlike the first war, the second generated major technological advances, while its aftermath produced an international economic and political climate particularly favourable to foreign business activities. Also, it was not too long before the UK and the leading Continental European nations, apart from West Germany, began to renew their foreign investments. By 1960, for example, the French and Dutch capital involvement had more than matched its pre-war level.

As a percentage of both world output and trade, the international direct investment stake rose modestly between 1938 and 1960. During this period, there was a continuation of the pre-war trend for the MNEs to favour developed countries for new venture activity. In 1914, something like two-thirds of the capital stake was directed to developing countries; by 1938 this had fallen to 55 per cent, and by 1960 it was nearer 40 per cent. Partly, this reflected another major structural change, viz. the increased interest shown in market-*vis à vis* supply-oriented investments, which was designed to overcome trade barriers of one kind or another. In 1960, about 35 per cent of the US and UK accumulated investment was in manufacturing, compared with about 25 per cent in 1938 and 15 per cent in 1914. By contrast, interest in agricultural and public utility activities declined markedly, while – taken as a whole – mining investments recorded about average rates of growth. Yet, some of these latter, notably those made by UK and US MNEs in non-ferrous metals, e.g. copper in Chile and Peru, bauxite in the Caribbean etc. and oil in the Persian gulf, grew very rapidly.

Although this was a period which saw the start of enforced divestment or nationalisation of some primary product investments and the setting up of international 'producers' cartels, it was not until the 1960s that the thrust of these expressions of host country economic power was fully revealed.¹⁷ Apart from state-owned oil MNEs, European firms were not very active in raw material exploration; the major capital exporters in the 1950s, viz. the Netherlands, France and Switzerland, preferred to invest in manufacturing, trade and service activities (including finance and insurance). As in the inter-war

Changes in level structure of international production 95

years, UK MNEs directed their attention mainly towards Commonwealth countries. Indeed, such countries increased their share of the total capital stake from around one-half in the 1930s to over 70 per cent in 1960. During the early post-war period, first South Africa and Australia and then Canada attracted the bulk of new UK direct investment; contrast this pattern with that of US MNEs where the focus of interest was strongly directed to Canada and Western Europe. Some details are set out in Table 5.5.¹⁸

Unfortunately for this, as for other periods, there are no comprehensive statistics on the entry or exit of MNEs; it is, therefore, not possible to estimate how much of the growth of the international capital stake was accounted for by firms existing at the beginning of the period and how much by new entrants. Even the Harvard data (Vaupel and Curhan, 1974) do not distinguish between subsidiaries

Table 5.5 Percentage Breakdown of Number of Manufacturing Subsidiaries of MNEs by Country of Location

(c) Subsidiaries Established 1946–61

	US Based MNEs	UK Based MNEs	Continental European Based MNEs	Japanese Based MNEs
Developed Countries	63.2	79.5	65.4	0.7
North America:	14.9	15.9	16.0	0.2
of which: USA	—	3.2	10.7	0.2
Canada	14.9	12.7	5.3	—
Europe	35.9	26.6	41.8	0.5
Japan	2.6	0.3	1.5	—
Australasia and South Africa	9.8	36.7	6.1	0.0
Developing Countries	36.8	20.5	34.6	99.3
Middle East	1.4	2.6	3.0	0.6
Africa	1.4	4.6	6.6	0.3
Asia	3.4	6.9	5.8	66.1
Latin America	30.6	6.4	19.2	32.3
TOTAL	100	100	100	100
Number of Subsidiaries	2009	684	609	65

Source: Compiled from data first published in Vaupel and Curhan (1974)

96 *The Growth of International Business*

set up by established MNEs and new entrants; all that they tell us is how many affiliates the 413 MNEs studied had at different periods of time. However from these and related facts two things seem perfectly clear. First, over that part of the last century for which they had been operating as MNEs, something like 800 enterprises had set up affiliates in at least 10 countries. But second, of the total number of MNEs in 1973, nearly one-half operated only in one country and 70 per cent in three or less (Commission of the European Communities, 1976). These figures, coupled with other knowledge about the post-war entry of new Japanese MNEs¹⁹ and of some high-technology MNEs from the USA and Europe, suggest that any explanation of international production must deal with the question 'Why is the number of MNEs growing?' as well as 'Why do MNEs grow?'

Two other points might be made about this era of international business expansion. First, the proportion of new subsidiaries of the MNEs surveyed by Vaupel and Curhan (1974), which were established by green field ventures (as compared with acquisition, merger, or reorganisation) fell from 55 per cent in 1946-52 to 48 per cent in 1959-61; the corresponding figures for the pre-1914 period and 1919-39 were 67 per cent and 58 per cent respectively. Second, in the case of both US and non-US based MNEs, the proportion of affiliates in which they had a 95 per cent or more equity stake fell from 60 per cent in 1946-52 to 54 per cent in 1959-61.²⁰

(d) 1960-78

The rate of growth of the international capital stake reached its peak in the late 1960s, decelerated in the early and mid-1970s, but picked up again in the last few years of the decade. But the continued fall in the UK and US share and the increase in that of the West German, Japanese and Swiss²¹ is the most striking feature of Table 5.1. This is also confirmed by an examination of the growth of 483 of the world's largest industrial enterprises (Dunning and Pearce, 1981). Between 1962 and 1977 the number of those of US origin dwindled from 292 to 240; while that of Japanese companies rose from 29 to 64; and that of developing countries from 2 to 18. In terms of investments flows, the West German share in 1979 and 1980 was scarcely less than that of the UK; the Japanese contribution was about 60 per cent of the UK, but was (and is still) rising.

There have also been changes in the geographical distribution of the capital stake. Of an estimated \$293 billion invested by the seven leading home countries in 1978, (United Nations - UNCTC - 1981), 26.5 per cent was in developing countries, a figure slightly higher than that in 1971, but below that recorded (at least by US and UK

Changes in level structure of international production 97

MNEs) in 1960. Most of the forced divestment in natural resources and public utilities occurred in the decade ending in 1975; these were mostly located in developing countries.²² On the other hand, the 1970s saw a major surge in Japanese investment abroad which, more than its US and UK counterparts, is concentrated in developing countries. In 1978 such countries accounted for 56.5 per cent of all Japanese cumulative investment compared with 27.4 per cent of US and 19.8 per cent of UK investments (Kojima, 1980). Moreover, the decline in extractive investments has been largely counteracted by the growth in manufacturing and service industries; for example, the share of the total US capital stock in these two sectors located in developing countries rose from 21 per cent in 1971 to 26 per cent in 1978.

Within developed host countries, the last twenty years have seen a marked shift of interest by MNEs to Western Europe and the USA. In 1960 about 32 per cent of the foreign capital stock of developed market economies was located in Western Europe or the US; by 1970 this percentage had risen to 38, and by 1978 to 47. By contrast, the share of the British Commonwealth, which attracted so much investment in the early part of the post-war period, fell from 45 per cent in 1960 to 27 per cent in 1970 and to 17 per cent in 1978. This reallocation of activity has been particularly marked in the case of UK investors. In 1978 Western Europe accounted for 31 per cent of the UK direct capital stake (excluding oil), compared to 13 per cent in 1962; the share going to developing countries, however, fell from 37 per cent to 20 per cent. Japanese investment has also grown rather more rapidly in other industrialised countries, especially in the manufacturing and service sectors.

The industrial structure of the outward capital stake of the leading investing countries continues to reflect their factor endowments and market structures, though there is some suggestion of a convergence in patterns over the last two decades (Dunning, 1981a). However, US, West German and Swedish MNEs continue to dominate the high-technology and information-intensive industries, while those of UK and Japanese origin are more represented in consumer goods sectors. In Japan's case, however, her investments up to the mid-1970s were in the traditional industries in which she once had a comparative trading advantage, e.g. textiles, or those in which she has always had a comparative trading disadvantage, e.g. primary metals; in the case of the UK, her strength appears to lie in branded goods, e.g. processed foods and cigarettes, where consistency of quality is an important competitive advantage, and in financial services.

Three other features of recent direct trends in MNE activity might also be mentioned. The first is the growth in two-way investment by

98 The Growth of International Business

countries. For example, not only has the USA's share of the outward capital stake fallen; her share of the inward capital stake has risen. In 1960, the USA's outward/inward capital stake ratio was 4.0, in 1970 it was 5.7, but by 1980 it had fallen to 3.3; by contrast, the West German ratio has risen from 0.40 in 1960 to 0.80 in 1970 and 1.09 in 1978, and the Canadian ratio from 0.19 to 0.23 and 0.31. Moreover, as has already been mentioned, in the later 1970s several developing countries, e.g. Hong Kong, Singapore, Brazil, Korea and India, also began to export capital on some scale (Kumar and MacLeod, 1981).

The second trend has been the shift away from traditional import-substituting and resource-based FDI to that designed to promote an integrated structure of production by MNEs and their affiliates. The rationale for this will be discussed later in this chapter, but the two fastest growing areas of MNE activity in the 1970s have been in export platform investments in the newly industrialising countries (NICs) and in horizontal intra-firm trade among affiliates, and between affiliates and parent companies with a regionally integrated area, e.g. EEC, LAFTA.²¹

Thirdly, the last twenty years has seen an increase not only in the importance of joint ventures and non-equity resource flows²⁴ but of liquidations and voluntary divestments by MNEs. According to Curhan, Davidson and Suri (1977) there were 3152 divestments by US MNEs between 1951 and 1975, while the ratio of divestments to new investments rose from 0.23 in 1968-9 to 0.56 in 1974-5. These divestments have been of two kinds, both underlining the dynamic character of MNE involvement. The first is in low or mature technology sectors in which entry barriers are falling; the second is in response to the move towards global or regional rationalisation, and, in the later 1970s, to domestic economic recession.

There were other developments of the late 1970s which space precludes us from discussing. These included the opening up of regions – notably parts of Eastern Europe and mainland China – previously closed to international business; the more ready acceptance by Japan of majority-owned foreign affiliates; the growth of MNE activity in several service sectors, notably banking, insurance, advertising and tourism; and the increasing use of cross-border arrangements not linked to equity investments.

Most of the data so far presented in this chapter relate to the aggregate FDI stake or to the numbers of the affiliates of large MNEs existing in 1970 (or thereabouts). Only *en passant* have this chapter touched on the growth of particular MNEs, or groups of MNEs as dealt with in the writings of Wilkins (1974a, 1974b), Wilson (n.d.), Franko (1976), Stopford (1974), Nicholas (1982a) and others. Nevertheless, if the statistical profile has been more macro- than

Changes in level structure of international production 99

micro-oriented, the analytical insights of these scholars will later be drawn upon very considerably. However, this part of the chapter concludes by illustrating, in Figure 5.1, some of the main historical landmarks in the genealogy of the contemporary MNE and indicating where some of today's international giants fit into this picture.

5.3 EXPLAINING CHANGES IN INTERNATIONAL PRODUCTION

Though several economists have been interested in explaining the phenomena of FDI *per se*,²⁵ most students of international business tend to view it as the vehicle by which resources are transferred and allocated across national boundaries without any change in their ownership. In Chapter 2 Peter Buckley summarised the state of our knowledge and areas of lacunae on theoretical issues. This section will just add our own particular gloss which will form the basis of the analysis which follows.

Changes in the level and pattern of international production may reflect both changes in the *number* of MNEs and/or their affiliates, and the growth or decline of established MNEs and/or their affiliates. Strictly speaking, the theory of the growth of the MNE, as a special case of the growth of the firm, is concerned with the second phenomena rather than the first; and, therefore, it cannot be expected to explain a lot of *de novo* foreign production, and particularly that which replaces domestic production.

Let us start with a few generally accepted propositions. A firm engages in two interrelated functions. First, it organises the production of individual goods and services. Second, it engages in transactions, i.e. it buys inputs and sells outputs. Some of these transactions will be with external buyers and sellers, e.g. households and other firms; others will be made within the same firm. A firm will then grow when it either increases the output of the products it is already producing (or replaces these by new and/or improved products), or internalises transactions which would otherwise have been undertaken via the market, i.e. by redistributing output from other producers to itself.²⁶

While, in practice, the production and transaction functions of firms may not be easily separable, conceptually the distinction is a useful one, as is that between those transactions of a firm which are capable of being externalised and those which are not (Dunning, 1981a).

In performing these two activities, a firm may find it desirable to set up production units in more than one location, either in the country of its incorporation or elsewhere. How much output and how

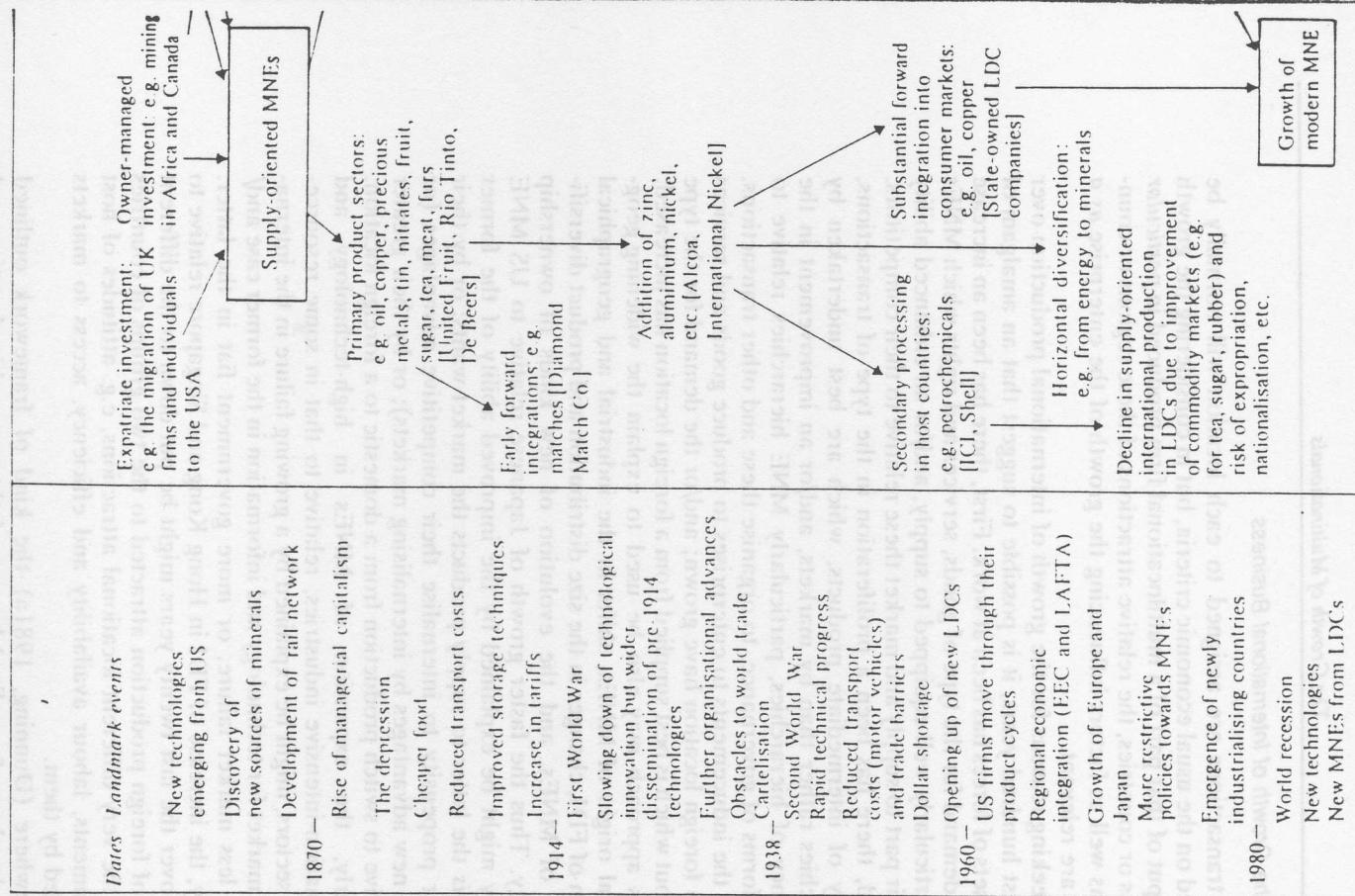
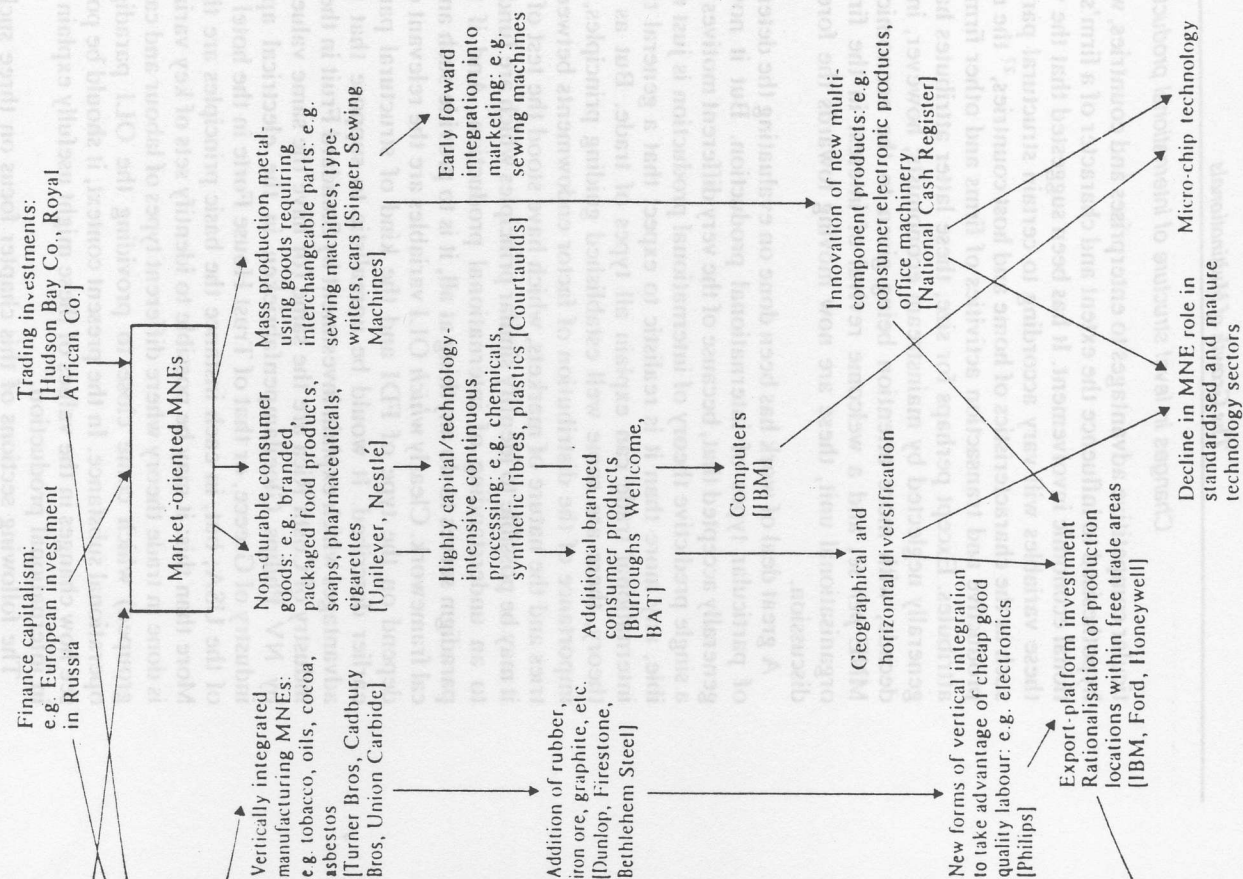


Figure 5.1 Evolution of the Modern Multinational Enterprise

Four kinds of early-nineteenth-century FDI:



102 The Growth of International Business

many transactions are assigned to each location will normally be decided on the usual economic criteria, but in considering the growth of output of that part of a multilocal firm produced in *particular* regions or countries, the relative attractions of these regions or countries, as well as factors influencing the growth of the enterprise as a whole are relevant.

In seeking reasons for the growth of international production over the past hundred years, it is possible to suggest that an amalgam of three sets of forces has been at work. First, there has been an increase in the demand for the type of goods, services and rights which MNEs are particularly well equipped to supply, and/or an enhanced ability on their part to supply and market these relative to their competitors. Second, there has been a proliferation in the type of transactions, notably of intermediate products, which are best undertaken by hierarchies rather than by markets, and/or an improvement in the efficiency of hierarchies, particularly MNE hierarchies relative to other forms of governance, to organise these and other transactions. Third, the inducements to enterprises to produce goods and services from a foreign location have grown; and/or the demand for the type of output which is best supplied from a foreign location has increased.

This approach may also be used to explain the widening geographical origin of MNEs, shifts in the industrial and geographical pattern of FDI, changes in the size distribution and product diversification of MNEs, and the evolution of new kinds of ownership strategy. Thus the faster growth of Japanese relative to US MNE activity might be explained by the improved ability of the former *vis-à-vis* the latter to supply products the market wants; or by their greater propensity to internalise their competitive advantages (or create new advantages by internalising markets); or by their greater incentive to switch production from a domestic to a foreign location. Similarly, the expansion of MNEs in high-technology and information-intensive industries, relative to that in some resource-based sectors, might be explained by a growing failure in the international market for technology and information in the former case and/or by less market failure, or more government fiat in the latter. Finally, the increase of FDI in Hong Kong and Singapore relative to India over the last twenty years might be put down to the different types of foreign production attracted to the two groups of countries or to the very different locational attractions, e.g. attitudes of host governments, labour availability and efficiency, access to markets afforded by them.

Elsewhere (Dunning, 1981a) the kind of framework outlined above has been formalised by use of the ownership, location and internalisation (OLI) paradigm, which identifies and classifies par-

Changes in level structure of international production 103

ticular competitive advantages to enterprises and countries, which are hypothesised to influence the extent and character of a firm's international economic involvement. It has been suggested that the values of these variables will vary according to certain structural parameters, such as the characteristics of home and host countries,²⁷ the nature of productive and transaction activities of firms and other firm-specific attributes. Except perhaps for size, these latter attributes have been generally neglected by mainstream economists; however, in the last decade, with more attention being given to the economics of the MNE *per se*, and a welcome revival of interest in the firm as an organisational unit, these are now moving towards the forefront of discussion.

A great deal of work has been done on evaluating the determinants of particular types of international production. But it now seems generally accepted that, because of the very different motives for FDI, a single predictive theory of international production is just not possible, any more than it is realistic to expect that a general theory of international trade can explain all types of trade. But as in trade theory, there are some well established guiding principles, e.g. the importance of the distribution of factor endowments between countries and the nature of markets, which have stood the test of time, so it may be possible to identify similar principles which are fundamental to an understanding of international production. And if the OLI paradigm serves to do anything at all, it is to provide such an analytical framework. Clearly *which* OLI variables are the relevant ones will depend on the type of FDI and the kind of structural parameters earlier described. It would be unrealistic to suppose that the OLI advantages which explain investment by Standard Fruit in the banana industry of Costa Rica are the same (or have the same value) as that by NV Philips Gloeilampenfabrieken in the electrical appliances industry of Greece, or that of Trust House Forte in the hotel industry of the USA; but, in each instance the basic principles are the same. More than this: it may be possible to identify sets of key variables (as is done in trade theory where different types of labour and capital are grouped) which come close to providing the OLI paradigm with operational substance. In the present context, it should be possible to see how changes in the values of these might usefully explain changes in international production.

The following sections of this chapter focus on three such sets of interrelated factors. First, the state of knowledge (including information and organisational technology) is a key variable influencing the capacity of firms of different nationality of ownership to produce and market particular goods and services, independently from where, or by which means they are supplied. Second, market failure (as proxied

104 *The Growth of International Business*

by the costs of a market transaction and the externalities associated with it) is the key variable influencing the administrative mode of exploiting the capacity. Third, a group of locational variables such as transfer costs (including tariff barriers), size of markets and resource availability, affect the choice of firms of where to locate their activities.²⁸

5.4 TECHNOLOGICAL CAPABILITY

(a) 1870-1914

From Schumpeter onwards, several economists have asserted that innovations and technological advances have been the major cause of economic growth of industrial societies.²⁹ According to this view, given the size and character of the market for a particular product, the share of that market enjoyed by any one firm rests primarily on its entrepreneurship, technological prowess and organisational strategy relative to that of its competitors. It may, then, be reasonably hypothesised that, in so far as international production is part of the total production of firms, its growth is likely to be positively rather than negatively related to world technological capacity; and for its geographical origin to be similarly related to the distribution of that capacity between countries. Moreover, in so far as it is possible to identify particular areas of activity in which MNEs are likely to participate, then the more technological advances stem from these activities, the more international production might be expected to grow.

Though innovations continued throughout the nineteenth century, they varied greatly in significance and character, by country of origin, sector and type of firm, and by their speed of international dissemination. Up to around the 1860s, most discoveries were based on the comparatively elementary technology of the industrial revolution, the results of which were fairly easily transferred across national boundaries and assimilated by their recipients. While these advances were accompanied by important organisational and institutional changes, e.g. the introduction of the factory system and the emergence of the joint stock company, for the most part in this era, firms remained small, were single product and owner-managed, and supplied local markets.

The last half-century before the First World War heralded a new wave of technological advances which, in many ways, were more profound and far reaching than their predecessors. These stemmed largely from the USA, and very much reflected both its particular factor endowments and its market characteristics. They were stimu-

Changes in level structure of international production 105

lated and supported by the creation of new transport and communications networks, which helped shift both the demand and the supply curves for goods to the right. Electricity and the internal combustion engine, the interchangeability of parts, and the introduction of continuous processing were the main technological lynchpins of the second industrial revolution.³⁰ They combined to make possible economies of scale in production which, however, required a regular flow of inputs and assured markets if they were to be profitably exploited.

Such technological, organisational and financial changes fundamentally affected the production functions of firms, their capacity for and strategy of growth, and the market environment in which they operated. They also introduced new kinds of competitive advantage, which affected both the ability of firms to exploit foreign markets and the form by which advantages were exploited. For unlike those which preceded them, these advantages created many more barriers to the entry of firms not possessing them, and to their transfer to other countries. These included the growing cost effectiveness of large plants, the economies of process, product or market integration, and the protection offered by the international patent system. They encouraged further technological and organisational changes, which eventually led to more concentration of industrial output and to the transformation of country-specific advantages into the proprietary rights of enterprises.

There are several statistical pointers to the acceleration of technological advances during this era. By the turn of the century the rate of major inventions and discoveries was twice that of the first quarter of the nineteenth century (Streit, 1949). More impressive, from a total annual application for new patents in the USA (from both US and non-US residents) of less than 1,000 in the 1840s and 5,000 in the late 1850s, the number rose substantially to more than 20,000 in the late 1860s, to 40,000 by the turn of the century and to nearly 70,000 by the outbreak of the First World War.

No less significant was the change in the geographical origin of such advances. As Table 5.6 shows, of some 322 major innovations recorded between 1750 and 1850, 37.9 per cent originated from Britain, 23.9 per cent from France, 11.8 per cent from Germany, 16.1 per cent from the USA and 10.3 per cent from other countries.³¹ In the following 64 years, during which there were 453 innovations, the corresponding percentages were 15.9, 16.8, 20.5, 34.9 and 11.9. From a dominating position in the late eighteenth and nineteenth centuries, the UK's share fell, while that of her continental competitors and the USA rose: after 1870 the USA took the lead, although its hegemony did not reach its zenith until just after the Second World

106 The Growth of International Business

Table 5.6 Major Inventions, Discoveries and Innovations by Country, 1750-1950 (as a percentage of total)

	Inventions, discoveries and innovations				
	Total (%)	Britain (%)	France (%)	Germany (%)	USA (%)
1750-1775	30	46.7	16.7	3.3	10.0
1776-1800	68	42.6	32.4	5.9	13.2
1801-1825	95	44.2	22.1	10.5	12.6
1826-1850	129	28.7	22.5	17.8	22.5
1851-1875	163	17.8	20.9	23.9	25.2
1876-1900	204	14.2	17.2	19.1	37.7
1901-1914	87	16.1	8.0	17.2	46.0
1915-1939	146	13.0	4.1	13.0	58.6
1940-1950	34	2.9	0.0	6.7	82.4

Source: Calculated from Streit (1949); see also Pavitt and Soete (1981)

War. Allowing for the time lag between innovation and foreign production, this pattern of technological advance mirrors fairly well the distribution of the stock of foreign investment set out in Table 5.1. Data on non-resident patents registered in the USA suggest a similar decline in the proportion originating from the UK. They also show that, in the period between 1883 and 1914, Germany was a more important patentor than France; and, as one might expect from its geographical proximity, Canada.¹² In the mid-nineteenth century, the proportion of the population which had some kind of tertiary education was highest in the UK and Germany. By 1914, the USA had overtaken both countries, with the UK second, Germany third and France fourth.

Changes in the character of the new technologies were no less important. Those coming from Europe tended to reflect the region's earlier pre-eminence in the basic industries, e.g. iron and steel, shipbuilding, heavy engineering and chemicals. Moreover, both in the UK and on the Continent, where most businesses were family owned, there was comparatively little vertical integration. By contrast, in the USA innovations were more directed towards light engineering, electrical goods, motor vehicles and consumer durables.¹³ US firms also tended to pioneer labour-saving and/or capital-intensive production processes, while European companies scored relatively well in materials-saving innovations.

The innovations of the later nineteenth century were different in another sense. Although the earlier discoveries in metallurgy, power generation and transport were interrelated and mutually reinforcing,

Changes in level structure of international production 107

such interdependence rarely extended across national boundaries. The later advances were truly trans-continental; by drastically reducing transport costs and preserving quality, the railroad, the iron-steamship and the introduction of refrigeration and temperature controlling techniques opened up new sources of food and raw materials from distant countries. *Inter alia* these developments led to an increase in the size of the foreign trade sector in most European economies and of inter-regional US trade. But whereas the UK's comparative advantage was most clearly seen in the products which it had pioneered a half-century earlier, that of Germany, France and the USA was in the products first produced in the later nineteenth century, e.g. motor vehicles, electrical equipment and light chemicals. Indeed some economists assert that changes in the structure of a country's trade is a better indicator of its competitiveness than its share of world trade. Viewed in this perspective, and measured in terms of the rate of growth in world exports in the twentieth century, the USA, Germany and, to a lesser extent, France, consistently outperformed the UK.

Two other features about the sector's embracing the newer technologies should be mentioned. First, they demanded a higher and more consistent quality of inputs, e.g. technology, management, skilled labour, than their predecessors; at the same time, the materials they used were more widely found. Often the possession of these inputs generated advantages to firms which were not only exclusive (at least for a period of time) but which were transferable across national boundaries via FDI or licensing. Second, they tended to be more complex, in that their products needed a larger number of divisible production processes, both lateral – in the case of fabricating industries – and vertical – in the case of continuous processing industries. Yet to be fully effective, these separate processes needed to be coordinated within the same firm. Hence economies of scale and specialisation went hand in hand with economies of joint production. This integration extended beyond production to the purchasing of inputs and the marketing of outputs (Chandler, 1977). Teece (1981b) has argued that those economies which encouraged, by one means or another, the vertical integration of their industries in the nineteenth and early twentieth century, were those which exhibited the greatest technological advances and improved competitive position in world markets. Kindleberger (1964) has suggested the same thing, particularly in the context of the reluctance of UK firms to integrate production and selling operations. He compares the case of the UK woollen industry, which moved to direct trading in the nineteenth century and maintained its rate of technical change, with that of the cotton industry which preferred to separate

108 The Growth of International Business

selling and production activities¹⁴ and fared less well. Frankel (1955) asserts that it was the inability of the organisational and ownership structure in the UK to adapt to the needs of new technologies which caused the UK to slip behind in the competitive race; Teece (1981b) cites the UK iron and steel industry as a case in point, although a number of the large manufacturers, e.g. Consett, expanded overseas to secure ore supplies after 1870.

An examination of the two hundred largest firms in the USA, UK, Germany and Japan at the time of, or shortly after, the First World War, as set out in Table 5.7, reveals that in the newer and/or faster growing industrial sectors of chemical, petroleum, machinery, transport equipment and measuring instruments, there were 99 US firms, 56 UK, 91 German and 53 Japanese. By contrast, in the traditional

Table 5.7 Percentage Distribution of Two Hundred Largest Manufacturing Firms in Selected Countries by Industry at the Time of the First World War

	US (1917) %	UK (1919) %	Germany (1913) %	Japan (1913) %
<i>Newer or Mainly Producer Good Industries</i>				
Chemical	49.5	28.0	45.5	25.0
Petroleum	10.0	5.5	13.0	11.5
Rubber	11.0	1.5	2.5	3.0
Machinery	2.5	1.5	0.5	—
Electrical Machinery	10.0	4.0	10.5	2.0
Transport and Equipment	2.5	5.5	9.0	3.5
Measuring Instruments	13.0	10.0	9.5	4.5
	0.5	—	0.5	0.5
<i>Older or Mainly Consumer Good Industries</i>				
Food and Tobacco	50.0	70.5	54.1	74.5
Textiles and Apparel	18.0	33.0	12.0	16.0
Lumber and Furniture	4.0	13.5	6.6	28.0
Paper and Printing	1.5	—	0.5	1.5
Leather	3.5	4.5	0.5	6.5
Stone, Clay and Glass	2.0	—	1.0	2.0
Primary Metal	2.5	1.0	5.0	8.0
Fabricated Metal	14.5	17.5	24.5	10.5
Miscellaneous	4.0	1.0	4.0	2.0
	0.5	1.5	0.5	0.5
TOTAL	100.0	100.0	100.0	100.0

Source: Derived from data in Chandler (1981)

Changes in level structure of international production 109

sectors which led the industrial revolution a century earlier, viz. textiles and apparel, primary metals and fabricated metals, the respective figures were 45, 64, 70 and 81 (Chandler, 1981). Partly, of course, these statistics reflect comparative resource endowments of the countries in question; but, in retrospect, in the UK's case at least, they also suggest a failure of the economy to adapt its resource allocation to market needs and/or an inability of UK firms in the new sectors to organise themselves efficiently.

(b) 1919–38

During the inter-war years, the pace of technological advance slowed down, and what progress there was strongly favoured the US economy. For example, while patent applications in the USA doubled in the twenty years before 1914, between 1919 and 1939 they fell slightly. Major inventions, discoveries and innovations held up rather better; there were 148 in the former period and 127 in the latter. But of these later advances, the USA accounted for 60 per cent – while those originating from the UK fell to 12.5 per cent, those from France to 8.5 per cent and those from Germany to 13.0 per cent. Of the patents registered in the USA, those of UK residents rose from 1,288 in 1919 to 1,347 in 1939; the corresponding figures for Germany were 131 and 2,480; for France 363 and 634; and for Japan 56 and 57. The impressive growth in non-resident patenting in the USA at a time when the number of major innovations was falling may be explained by the growing interest of foreign firms in the US market, and the fact that many post-1918 patents were based on pre-war discoveries.

In spite of some notable inventions of the inter-war period – television, radar, the jet engine, colour photography, several manmade fibres and some antibiotic drugs, for example – these were mainly years of the development, adaptation and dissemination of the technological and organisational breakthroughs of the late nineteenth and early twentieth centuries. In consequence, one sees the most substantial increase in the share of the largest firms concentrated in these sectors; at the same time, the events of the 1920s and 1930s not only forced traditional industries to rationalise their structures and diversify into new lines of activity, but also prompted the growth industries to reorganise themselves around the new process innovations such as semi-automated production. For example, the number of vehicle and other transport equipment firms in the top 200 companies of the USA, UK, Germany and Japan fell from 74 in 1914–19 to 62 in 1930. This obviously reflected a more pronounced growth in the output of some firms than in that of the industry as a whole. Many

110 The Growth of International Business

companies in this era were moving through the later stages of their product cycles initiated several years earlier, and were paying more attention to reducing production costs, standardising product quality and promoting new sales, particularly at the lower end of the market where price sensitivity tends to increase as the product becomes available to a larger number of consumers (the introduction of the Model T by the Ford Motor Company in the UK is an example). The growing threat from European MNEs to US technological hegemony in some newer industrial sectors also led to more international cartel arrangements than in pre-war days, e.g. in aluminium, electrical equipment, and chemicals, which – in part at least – reduced the incentive for FDI.

On the purely technological front then, the inter-war years saw some restructuring of European industry but, for the most part, the US continued to retain its advantage in the newer sectors. Throughout this period the proportion of investment in non-manufacturing personnel and facilities by manufacturing firms grew as increases in hierarchical efficiency and/or market failure enabled the boundaries of the firm to be pushed further out. The need to gain control of materials to service an industrial machine increasingly vulnerable to disruptions in production flows, and the growing role of oil-based products substituting for natural materials, also combined to prompt further backward integration.

(c) 1945–60

The Second World War proved an important watershed for technological advances; indeed, it also speeded up the exploitation of certain discoveries in the 1930s, which later provided the mainspring of commercial expansion. Between 1945 and 1965 the number of patents granted in the USA trebled, with the proportion awarded to foreigners rising from 8.2 per cent to 19.9 per cent. However the increase in patenting by foreigners occurred mainly in the latter half of the 1950s; in the years immediately following the war the proportion hovered around the 10–12 per cent level. After a dramatic fall in its share of non-resident patenting, West Germany made a no less impressive recovery, and by 1960 had replaced the UK as the leading grantee. By this time France had also regained her pre-war position, while Japan was just emerging as a technological force. Most other European nations had also recovered or surpassed their pre-war shares.

No comparative data on R & D expenditure (as an alternative proxy for technological capability) are available until the mid-1960s. In 1967 the USA still accounted for 68.7 per cent of the R & D under-

Changes in level structure of international production 111

taken by OECD countries, with the UK (7.3 per cent), West Germany (6.3 per cent), France (6.0 per cent) and Japan (4.7 per cent) a long way behind. One imagines that in 1960 the percentages for the first three countries would have been higher and that of Japan lower. The proportion of R & D expenditure to GNP was also higher in the USA than in other OECD countries in that year, as was the percentage of the population receiving tertiary education.

(d) 1960–78

The last two decades have seen the rate of innovation falling back again. The number of new patents granted in the USA remained more or less constant in the later 1960s, moved up in the early 1970s, slackened off in the mid-1970s and recovered at the end of the decade. In most industrial countries – Japan and West Germany being two exceptions – the share of GNP allocated to R & D fell in the late 1960s and 1970s; at the same time the US share of R & D in OECD countries dropped substantially, so that by 1977 it accounted for 49.5 per cent. By contrast, all European countries increased their shares – especially West Germany from 6.3 per cent to 11.9 per cent – but the most spectacular gain was that of Japan, from 4.7 per cent in 1967 to 13.6 per cent in 1977. Germany and Japan were then the leading foreign patent grantees in the USA with shares of 23.9 per cent and 27.7 per cent of all non-resident recipients; by contrast, the UK's share had fallen to its lowest point of 10.1 per cent. Most other European countries also lost out in the 1970s to Japan. However, as a whole, non-US sources accounted for two-fifths of all patents granted in the USA in 1979 – a three-fold increase since 1960 compared with only a 9 per cent increase in US patenting. The late 1970s also saw a sharp increase in patenting by some NICs, e.g. Brazil, Mexico, Hong Kong and Korea.

More recently, some researchers have attempted to compare the trade and innovative performance of OECD countries. One of the most interesting findings is that not only is there an apparently close correlation between those manufacturing sectors in which there is a revealed comparative trading advantage (RCA) and those in which there is a revealed innovative advantage – the latter being proxied by number of patents granted in the USA – but also that, in those industries in which both indices are greater than one, the propensity to engage in FDI is above average (Pavitt and Soete, 1981). Further, the patterns of the two sets of RCA differ between the leading industrialised countries in a way that is consistent with variations in their revealed comparative advantage of foreign direct assets, as has been demonstrated elsewhere (Dunning, 1981a).

112 The Growth of International Business

Other data confirm that since the early 1960s the share of the leading US industrial enterprises in world output has fallen relative to that of other countries (Dunning and Pearce, 1981; Franko, 1978). Only in computers, measuring instruments and aerospace have US firms retained their dominance; elsewhere, the erosion of the USA's position has been generally greater in the technology-intensive sectors. It is also worth recalling that it is these industries which have increased their non-manufacturing personnel the most – both absolutely and relative to manufacturing personnel – and where the average size of firm has risen the most. On the other hand, product diversification has been no less pronounced in some of the non-research-intensive sectors.

Finally, statistics on the technological balance of payments of countries tell a similar story.³⁵ They point to a relative decline in the USA's position as measured by its rate of growth of payments for technology to foreigners (in the form of royalties, fees, etc.) exceeding that of its receipts, while in the case of Japan and Germany the reverse phenomenon has taken place. It should be observed, however, that these data are subject to many errors, and, in part at least, reflect the propensity of companies to invest overseas.

In summary, the last hundred years have seen an ebb and flow of technological advance with major changes in the distribution of technological capacity between countries. It would seem that the main thrusts of such advances have generally preceded those of FDI and that, although the time lag between many kinds of invention and their commercialisation is probably increasing, that between their embodiment in domestic and foreign production is falling (Mansfield, Teece and Romeo, 1979). The evidence also suggests that the changing geographical origin of the foreign direct capital stake mirrors fairly well changes in the distribution of technological capabilities. Innovations in information, and in organisational, transport and communications technologies have sometimes followed and sometimes preceded changes in product, process and materials technologies, but these too have been discontinuous. Here there have been three main breakthroughs: the first was necessitated by the new manufacturing technologies of the third quarter of the nineteenth century, including those of the railroad and the telegraph; the second was brought about by the advent of the jet aircraft and the computer immediately after the end of the Second World War; and the third by the advances in satellite communication, micro-chip technology and bio-engineering of the mid-1970s, the results of which are only just being felt. These initially benefited the economies which introduced them, but via FDI and other modalities of transfer quickly spread to impinge on firms of other nationalities. On the whole, however, large

Changes in level structure of international production 113

firms – and large MNEs in particular – seem to have been both the main instigators and the main beneficiaries of such advances.

5.5 MARKET FAILURE AND ORGANISATIONAL FORM

However much advances in technology may be a primary cause of the growth in world production over the last century, except in a most indirect sense they cannot satisfactorily explain the changes in the distribution of that output. In particular, they cannot explain, first, the increase in the average size of firms and the extent of product or process diversification and, second, the greater propensity of some firms to produce their output from a foreign rather than a domestic location. It is now generally recognised that the answer to the first question lies in the extent to which the market or administrative fiat is the preferred mechanism of resource (or property right) allocation. In the absence of any kind of market failure (in the sense that transaction costs in the intermediate goods market are zero and there are no externalities), the function of any firm would be limited to the production of a single and indivisible product, service or right. On the other hand, if market failure was complete, then only one firm (or a government agency) would produce all products, services and rights: apart from buying factor inputs from, and selling its final output to, households, all other transactions would be internalised.

In practice of course, both markets and hierarchies coexist, and most transactions are neither pure spot or pure administered. Richardson (1972) has emphasised that many activities between firms are cooperative rather than competitive; this is borne out by the growth of a wide variety of non-equity contractual arrangements concluded between firms of different nationality. For the purpose of this chapter, however, we shall consider these intermediate organisational forms as market transactions, even though *de facto* they have many of the characteristics of internalised cooperative agreements (Nicholas (1982b)).

In applying these concepts to explaining the growth of international production, it may be argued that, in the absence of inter-country transaction costs, all firms would conduct their buying and selling with firms producing in another country via the market; i.e. there would be no incentive for FDI. Therefore, *pari passu*, the growth of international production must be associated with increased market failure of the type of output and inputs in which firms wish to trade.

The literature surveyed in Chapter 1 suggests that firms may wish to internalise transactions for two reasons. First, they may believe that this is the best way to appropriate the economic rent in whatever

114 The Growth of International Business

property right is being bought or sold. Thus a firm might internalise the transfer of technology rather than license it, because it believes this organisational route will yield a greater net benefit (or the same benefit at less risk); or it may engage in international vertical integration in a resource-based sector so as to capture the full benefits of resource exploitation for itself – rather than share them with its seller. Second, the internalisation of a particular transaction may confer benefits to the internalising company external to that transaction. Most economies of joint production and lateral diversification arise in this way. In both cases, a firm will embrace new transactions as long as the marginal cost of so doing is covered by the marginal revenue derived from the two advantages of internalisation just outlined.

In the pages which follow, the analysis will be confined to the factors influencing the choice of organisation for engaging in transactions in or between a *given location*. The next section will discuss the appropriate location of production, given the organisational form. In other words, unlike some writers, e.g. Rugman (1981), I prefer not to consider the choice between exports and FDI as one primarily involving matters of governance.¹⁶

The proposition following from these observations is that the growth in international production is likely to be positively rather than negatively associated with market failure and the growing incentive of firms to internalise transactions for one or two of the reasons stated above. As in the case of ownership advantages arising from the possession of a superior intangible asset, so internalisation advantages will vary according to country-, sector- and firm-specific characteristics.

(a) 1870–1914

The period up to 1870 was one in which, for most international transactions undertaken by firms, and given the environment in which they were undertaken, markets operated reasonably well, while the costs of internalising such transactions were generally prohibitive. The former situation reflected the relative simplicity, homogeneity and easy transferability of most kinds of knowledge and technology, and the comparative ease at which most raw materials and foodstuffs could be obtained; the latter manifested the diseconomies of operating distant branch plants, as well as the technical and organisational limitations on the growth of hierarchies. During this period the ratio of the number of external transactions to gross output produced by a firm was generally high. Where market prospects abroad were favourable and exports were uneconomic, then, rather than set up branch plants, enterprises found it preferable to

Changes in level structure of international production 115

migrate, lock, stock and barrel. Examples assembled by Coram (1967) and Buckley and Roberts (1982) include the migration of Dundee capitalists and mill superintendents to Paterson, New Jersey in 1844, that of the Clark family from Lancashire to set up the machine-making of cotton thread in Newark, New Jersey in 1850, and that of Irish hosiery manufacturers establishing knitting mills in Needham, Massachusetts in the 1850s. Later, as a direct result of rising US tariffs and difficult trading conditions in the UK, there was a substantial exodus of the tin-plate industry from South Wales, the silk industry from Macclesfield, the lace industry from Nottingham and the cutlery industry from Sheffield.¹⁷

In the period after 1870 several events occurred which dramatically affected the organisation of business. These included the evolution of managerial capitalism, the opening up of the US and European Continents by the railroad, improvements in intercontinental sea transport and advances in communication techniques. These events made possible the translation of single-unit into multi-unit enterprises, which in turn caused the number of transactions undertaken within firms to increase, and those between firms to decrease. At the same time, partly as a consequence of these developments, partly as a result of the increasing cost and complexity of new technology and the widening disparity of the technological capabilities between countries, and partly because of their growing need to protect themselves against the risk of disruptions to supplies of inputs affecting efficient scheduling and distributor efficiency,¹⁸ firms found the market a less attractive mode of exchange. The latter years of the nineteenth century saw an increasing ability of firms to cope with, and a greater need to initiate, hierarchical methods of organising transactions.

From the perspective of the foreign activities of firms, it may be expected that companies which find it economic to internalise transactions in their home country would also do so abroad, i.e. those producing high technology or branded consumer goods where quality control is important. But in some cases, especially with supply-oriented direct investments in primary products, there was little experience of domestic production, e.g. investment in tropical fruits by companies located in temperate climates, and in minerals by manufacturing companies in the consuming countries. In such cases the choice between licensing (or sub-contracting) a foreign supplier or backward integration rests on the ability of the supplier to supply the product at the right price and quality at the right time, the risk of being dependent on an external source of supply, and the competitive strategy of the purchasing company. In these and other respects, primary product markets in the nineteenth and early twentieth cen-

116 *The Growth of International Business*

tries were becoming increasingly imperfect; hence the growth of FDI in mines and plantations.³⁹

But country-specific factors are no less important in influencing the modality of international resource transfer (Dunning, 1982). As a general rule, market failure is likely to be greatest when one of the parties to the exchange is located in a poorer country. Partly because of this, and partly because most MNE activity in developing countries was directed to the primary product sector, non-resident resource transfer tended, even in the late nineteenth century, to be more internalised than in developed countries. The only exception was where host government policy was directed against inward investment, and this was unusual at the time. It has been shown that, in some cases, metropolitan governments deliberately tried to limit the ability of their own foreign colonies to develop markets for certain goods; in other words, imperialism fostered its own form of internalisation.

Unfortunately, data limitations do not enable us to test these ideas systematically. We do know, however, from the work of Svedberg (1978) that the proportion of the total investment accounted for by direct investment was higher in developing than in developed countries in 1914. It would seem also, from business histories, as well as case studies of particular sectors and countries, that externalised technology and managerial transfers were more common within Western Europe or between Europe and the USA than between the USA and Europe or the USA and the rest of the world. One other relevant fact is that almost all the cartels and cooperative agreements concluded prior to 1914 (i.e. where ownership advantages were traded between independent firms) were concluded between European firms – although sometimes these had very similar characteristics to internalised resource transference.

There is also some suggestion that the motives for internalisation differed between home countries. The UK manufacturing MNEs, for example, which were strongly oriented towards the supply of consumer goods (Stopford, 1974), were prompted more by the advantages of vertical selling than the US MNEs whose particular internalisation needs were less to do with the protection of the quality of branded products and the assurance of adequate distributive outlets, than with the problems of international technology markets. According to Nicholas (1982a), of 119 UK MNEs giving reasons for their direct investment abroad between 1879 and 1939, 21 per cent stated 'to sell vertically', only 3 per cent less than those who put 'technology' as a factor.⁴⁰ Backward integration was mentioned by 15 per cent of UK firms, and the tariff factor, or market protection, by 23 per cent of firms. A cursory examination of the list of 50 large US MNEs estab-

Changes in level structure of international production 117

lished before 1914, contained in Wilkins' classic work (1970), would suggest that the internalisation of technology and the economies of synergy already gained through domestic multiplant operations were a more important consideration.⁴¹

(ii) 1919–38

Comparatively little change in the conditions affecting the form of international involvements occurred in the inter-war years. What data we have suggest that direct investment weathered the economic vicissitudes of the period much better than portfolio investment. We also know that the growth of foreign production by established MNEs increasingly took the form of product, process or market diversification. As a result, the typical foreign affiliate was translated from a monocentric to a polycentric entity (Wilkins, 1974a). During these years foreign affiliates began to assume an identity of their own. Sometimes this was largely autonomous of the parent company, but in other cases it was a direct consequence of further internalisation of markets by the parent company. At the same time, a lot of new MNE entrants appeared on the scene. Continual improvements in the organisation and management of firms⁴² and in transport and communications technology also aided hierarchical transactions, as did the growth of markets for the kind of goods which MNEs, as a result of their integrated network of international activities, were best able to supply. This was a period in which both the average size and the number of internal transactions of firms increased sharply. It was also one which saw the growth of international cartels in the secondary sector. Although some of these associations were of pre-war origin, they flourished in the less robust economic climate of the inter-war years. The outcome was that to prevent destructive competition between oligopolists – particularly the inter-penetration of markets via international production – some kind of market sharing mechanism was thought desirable. These were also years in which governments, on the whole, chose not to exercise strong anti-trust or anti-monopoly policies.

It is worth observing that the propensity of firms to choose one form of involvement rather than another again varied by sector, country and enterprise. There were, for example, few cartels among motor vehicle producers; this was a rapid growth industry in which the technological and marketing advantages of US MNEs were particularly strong. Each firm produced a limited range of products, there were substantial economies of scale, and the need to closely schedule the flow of inputs and outputs were especially noticeable.

118 The Growth of International Business

By contrast, in the electrical equipment industry and some branches of the chemical and heavy engineering industries, where cartels were more common, these conditions were less in evidence. Moreover, contractual technological exchanges were favoured by the recovering large companies of Western Europe – particularly those of German origin – as a way of penetrating USA markets without a substantial capital investment (which also explains why joint ventures were more common among European firms investing in the USA than *vice versa*). During this time there was also a reduction in some kinds of vertical direct investment as new international commodity markets were set up. On the other hand, in those primary sectors in which large indivisible costs and high barriers to entry kept the number of firms small, and the need to protect against variations in output was especially marked (e.g. oil, tropical fruit, rubber and several non-ferrous metals), MNEs tightened their hierarchical control.

(c) 1945–60

The conditions in the third period covered by our study were dramatically different. First, as we have seen, the USA dominated the supply of new technology for much of the period. Second, it was a period of substantial economic expansion – or recovery in the case of Europe and Japan. Third, these were years when a lot of new idiosyncratic and non-codifiable technology was produced, the market for which was extremely imperfect (see Chapter 4). Fourth, antitrust policy – particularly in the USA – made both domestic and international mergers or agreements much more difficult to conclude than in pre-war days. Fifth, the advent of the jet plane and the computer initiated a new generation of organisational advances which reduced hierarchical transaction costs. Sixth, while for the early part of the period at least international markets of almost all kinds were in disarray, the underlying environment for direct investment and trade, created at Bretton Woods and Havana, was both more congenial and stable than that which guided policy makers in the inter-war years. Add to these factors the type of sectors in which world output was expanding the fastest, the countries which were most eager to attract foreign entrepreneurship, technology and capital, and/or offered the best prospects to MNEs, and the relative unattractiveness of alternative routes of resource transfer, and it is not surprising that international production rose so markedly in these years.

This period also saw a continuation of the pre-war trend to a more integrated product and market structure on the part of established MNEs. At the same time, a reading of many country studies of FDI, published in the late 1950s and early 1960s suggests that rationalised

Changes in level structure of international production 119

production as we know it today was still the exception rather than the rule within the manufacturing sector. Certainly intra-firm manufacturing imports and exports by MNEs were a small fraction of what they are today and, for the most part, there was little specialisation between parent and subsidiary. Indeed the early field studies of Dunning (1958), Safarian (1966) and Brash (1966) all suggest that, in the main, US manufacturing subsidiaries were truncated replicas of their parent organisations, and, after a learning period, tended to operate with the minimum of parental interference. In other words, the benefits of foreign production to the investing company were perceived in terms of the economic rent earned on the assets transferred rather than in any synergistic gains to the parent system. Because of the very rapid growth of new affiliates – often set up to overcome tariff barriers or other import controls – monocentric foreign production flourished. Even in 1973, 62 per cent of over 9,400 MNEs surveyed by the European Commission had only one foreign affiliate, compared with less than 3 per cent which had more than 20 affiliates (Commission of the European Communities, 1976).

This leads us to a general observation. While the setting up of a foreign affiliate may be likened to that of a branch plant of the parent company in the home country, it has also some of the characteristics of a *de novo* firm. This being so, a purely Chandlerian explanation (e.g. Chandler, 1977) of the growth of a large enterprise within a country may not be wholly pertinent to the decision to undertake foreign production. This is not only because many MNEs are quite small firms,⁴³ but because a foreign investment decision, unlike its domestic counterpart, is often prompted by the need to protect an existing market, i.e. to relocate rather than to expand output. If, then, we include all kinds of barriers to trade associated with traversing space between two countries, quite a lot of manufacturing investment over the last hundred years – but especially in the inter-war and early post-war periods – originated in this way. For example, some 75 per cent of the UK and US MNEs operating in the mid-1970s first set up outside their home countries in the post-1945 period. The proportion is probably nearer 85 per cent in the case of German firms and 95 per cent in the case of Japanese firms.

Both in the capital-intensive resource-based and technology-intensive manufacturing sectors there is some evidence of the bunching of new activities by rival MNE oligopolists in this period (Knickerbocker, 1973). Vernon (1981) argues that this behaviour reflects a form of risk-minimising strategy, which in a wider context helps to explain much of the integrating imperative among MNEs. At the same time, capital investment entails a risk of its own, which, when it outweighs the risk-reducing aspects of internalisation, may lead firms

120 *The Growth of International Business*

to prefer a cooperative or contractual route of exploiting foreign markets.

(d) 1960-78

The last two decades have seen a further considerable change in the organisation of international resource transfer, the net result of which has been to decrease the role of multinational hierarchies in some sectors and in some countries, and increase it in others. Supporting the former tendency has been a marked improvement in some international markets for transacting resources. Reinforcing this fait has been the voluntary divestment by MNEs or enforced use of the market route by host governments in many primary industries and some key secondary and tertiary industries. So international production, initially designed to exploit a unique technological advantage which has eroded over time, has tended to fall, except in countries where user capacity is still inadequate. By contrast, in fast innovating sectors, where technology is idiosyncratic, complex and not easily codified, the MNE continues to flourish. However, both these phenomena are parts of the same story and fit in well with the ideas contained in the product or industry technology cycles. Where MNEs act primarily as a transferor of assets and a tutor in the use of these and other inputs, their role in supplying any particular asset is likely to be a temporary one. In such cases, their permanent presence can only be explained by the continual innovation of new ownership advantages. Hence, as was said earlier, one would expect the outward direct investment of a country to be related to its rate of innovation, both absolutely and compared with that of its competitors. It is also likely to be allied to the technological capacity of the countries which it services. Thus it is quite consistent for US MNEs to reduce their stake in the French pharmaceutical sector, while Hong Kong investors increase theirs in the Sri Lankan textiles industry.

At the same time, changes in environmental risks have influenced the propensity of firms to internalise their international markets. On the one hand, the threat of interruption to oil and other raw material supplies has encouraged supplying MNEs to cut off the unintegrated processors they previously supplied. On the other, the added uncertainty of a loss of sunk capital (through nationalisation) has prompted partial or full divestment of 100 per cent affiliates (Vernon, 1981).

But quite apart from the ebb and flow of these kinds of international production, the most marked development of the last fifteen years has been the growth of the multi-divisional form of affiliates of MNEs. This is what Wilkins (1974) calls the third phase in MNE development: the motive for foreign production is not to gain the

Changes in level structure of international production 121

economic rent which marketable advantages can earn, but to capture the economies of integration and diversification arising from such production. Such ownership advantages are different in kind from the first type, partly because they accrue to the parent system rather than any one of its affiliates and partly because they are not transferable outside the MNE, i.e. there is no market for them.⁴⁴ This multi-divisional form may result in rationalised production between a group of affiliates within a region, or between parent companies and a number of affiliates.

Such rationalisation tends to take two main forms. The first is a reorganisation of a group of largely import-substituting activities in a number of countries which were initially designed to meet domestic needs. If and when the markets are large enough and/or become integrated, then the MNE may find it economic to pursue a different strategy, based upon the economies of product specialisation and intra-group trading; e.g. instead of each affiliate replicating the other's products, it specialises in only one product with which it supplies the markets of all countries. Secondly, corporate integration may take the form of export platform manufacturing investment or downstream processing of primary products, where the division of labour tends to be between stages of production and between parent and subsidiaries, and is based on international cost differences.

The expansion of these and similar forms of MNE activity has been made possible both by a reduction in trade barriers between particular countries and by the continued improvements in hierarchical efficiency. However, in some cases (particularly within the EEC) what, in fact, has happened is that the MNE has transferred a system of organisation to the group of affiliates located in a particular region. It is less the prospective gains from internalised transactions between parent and subsidiary which has led to new foreign production and more the gains from internalised transactions between the individual subsidiaries and their regional headquarters. In this case, synergistic advantages gained in the multi-divisional form in the parent company may be usefully replicated at a regional level; examples include the benefits of centralised purchasing, the use of sophisticated accounting systems, the reduction of exchange risks, and the ability to move top personnel between affiliates.⁴⁵

Again, one notices differences in the forms of international economic involvement both between home countries and between home and host countries. Very often these reflect industry- or firm-specific characteristics. Reference has already been made to the interdependent behaviour of MNE oligopolists. In the latter 1960s and early 1970s this was noticeable in the way in which technology was diffused in the semi-conductor industry and the drug industry

122 The Growth of International Business

(Lake, 1979). Davidson and McFetridge (1979) have suggested that international transfers of technology are more likely to be internalised if the transferor already operates an affiliate in the recipient country, and if previous transfers have been internalised. *Inter alia*, this might explain the greater propensity of Japanese firms to conclude licensing agreements with foreign motor vehicle firms, rather than establish their own manufacturing affiliates. On the other hand, the preference of US manufacturing firms for 100 per cent ownership of their affiliates may be due to their much greater degree of international product and process integration. This, in turn, may be a function of the extent of MNE manufacturing activity: Japan is still mainly at the monocentric stage of its international production. Moreover, as Mason (1980) has suggested, the main synergistic advantages between Japanese parent and affiliate companies are captured via the 100 per cent stake of the major trading companies in their foreign subsidiaries which, in turn, often have close financial and operating ties with foreign manufacturing companies.

It would seem, then, that in the last twenty years or so, US and some European MNEs have come of age; and that, at least in some areas of the world, their foreign operations have increasingly come to resemble their domestic operations and their growth patterns to follow broadly similar paths. The convergence of international consumer and producer tastes is accelerating this trend.

It is noteworthy that, although since around the mid-1960s the share of US direct investment has been steadily falling, it is the established US MNEs that have most pursued a Chandlerian strategy towards international production. And in the 1970s there was some evidence that European firms, particularly with respect to their activities in the US, were undertaking growth for similar reasons, although here the associations sought were often of a conglomerate rather than a horizontal or vertical kind. In a study of the growth of US FDI between 1962 and 1968 based on Internal Revenue data, Kopits (1979) estimated that the share of conglomerate diversification rose from 14.1 per cent to 22.3 per cent. It is possible, of course, that such diversification may be undertaken to exploit imperfections in the capital and foreign exchange markets. However, such opportunities, which do not normally occur within a country, may also open up new channels for investment, and thus be viable organisational avenues of growth. At the same time, the new MNEs which accounted for an increasing share of international production in the 1970s did not, in general, integrate their foreign and their domestic operations (although at a macro level there is reason to suppose Japanese foreign and domestic investments are more interrelated than, for example, their US counterparts (Kojima, 1980). Finally,

Changes in level structure of international production 123

with innovations in trans-border information flows, some of the obstacles to hierarchical growth are being further reduced. Such innovations of course, do not only benefit MNEs. For example, the introduction of international reservation systems for hotels has meant that this particular advantage may be sold on a contractual basis rather than within a multinational hotel system, thereby reducing the need for MNE systems (Dunning and McQueen, 1981). This is an example of where a particular ownership advantage has become widely codified and specialist companies established to sell it; some management consultancy firms operate in the same way.

The previous paragraphs suggest that changes in the advantages of alternative organisational forms for transferring ownership advantages across national boundaries have played a significant role in affecting the level and patterns of international production over the last hundred years. In particular, the internalisation model explains why in those sectors where the market for transacting either inputs or the outputs (including intermediate outputs) has improved the contribution of the MNE *qua* MNE,⁴⁶ has fallen. But in other sectors, where ownership advantages have become more idiosyncratic or dependent on the integration of interrelated activities, it has become even more important.⁴⁷ We have also argued that, while Chandlerian-type theories may not always be the most useful explanation of the initial foreign investment decision by firms, the growth of established subsidiaries of MNEs, and particularly those located in large integrated markets, is increasingly following the pattern of large domestic firms. Indeed, the generally faster rate of growth of international production *vis-à-vis* domestic production may be reasonably attributed to the additional incentive to integration which is consequential upon the diversification of production facilities outside national boundaries.⁴⁸

5.6 LOCATIONAL DETERMINANTS

Even accepting the superior ownership advantages of firms of one nationality over those of another and the incentive to internalise these advantages, it is a prerequisite for international production that it must be more profitable (or otherwise in their best interests) for firms to undertake at least some of their productive activities outside their home countries. Similarly, a growth in international production might (though not necessarily will) reflect a shift of the locational advantages in favour of foreign countries *vis-à-vis* the home country, or an increase in the type of production which favours a foreign rather than a domestic location.

124 The Growth of International Business

The determinants of the siting of international production have been well set out in the literature (e.g. Vernon, 1974). They include all those variables likely to influence the location of activities within a country, and others which specifically arise as a result of producing in different sovereign territories and/or currency areas. Considering, then, a particular siting decision in isolation from the rest of its activities, a firm contemplating foreign production may behave differently from one considering setting up a new plant within its home country, either because the values of the first group of variables (e.g. transport, labour, material, etc. costs, market characteristics, behaviour of competitors, etc.) are different in the two cases, or because the second group (e.g. tariffs, tax rates) are more significant.

This much is fairly straightforward. Where it is possible to supply a market from alternative sites, the entry of firms into foreign production may be solely explained by a shift in the relative attractions of these sites.

In the context of the OLI paradigm, changes in the value of locational variables have other effects. For example, international diversification of activities may itself offer its own ownership advantage. For example, an MNE, by its presence in different countries may be better able to monitor inputs and outputs or to engage in international specialisation and risk spreading (Rugman, 1979). On the other hand, differences in the efficiency of markets, e.g. for technology and primary products, and the uncertainty attached to market failure and changes in government fiat, may lead a firm to internalise activities in a foreign country that it may not feel it necessary to do at home. But it should be noted that the interaction between O, L and I variables is not involved in all locational decisions – particularly those involving *de novo* international production. Neither is it helpful to think of transfer costs as a kind of market failure associated with distance which firms internalise by switching from exports to local production.

The contention of this chapter is that the growth of the MNE has seen a gradual shift in locational determinants from those associated with the production and transfer costs of a single activity to those to do with economising transaction costs or maximising benefits external to that activity, but internal to the MNE, through the appropriate deployment over space of a group of interrelated activities. In such cases, the variables likely to influence MNEs in their selection of international sites will depend less on the effect which they have on the profitability of the affiliates, and more on that of the enterprise as a whole.

While investment incentives, tariffs, differences in labour costs, economics of plant size, etc. may effect *de novo* FDI, as the degree of

Changes in level structure of international production 125

multinationalisation intensifies, so the role of other locational variables becomes more decisive (Dunning, 1972). These include the general climate for international investment and trade (e.g. the extent of regional integration), the efficiency of markets for intermediate products transferred across national boundaries, the international market structure in which MNEs compete, and the presence, or otherwise, of economies of plant scale. One result of such a shift is seen in the growth of both intra-firm and intra-industry trade and FDI (Dunning, 1981b; Krugman, 1979, 1981). Let us now review some of these changes in an historical context.

(a) 1870–1914

Earlier in this chapter it was shown that before the First World War FDI was mainly directed either to natural resource exploitation (particularly so in the non-industrialised countries) or import-substitution (mainly in Europe, the USA, China and Japan). Obviously a necessary condition for the former kind of investment is the presence of the resources, but other variables (e.g. exploration and extraction costs, the extent to which it is economic to engage in secondary processing, marketing – including internal and external transport costs – host government policy towards the foreign ownership of natural resources, and the demand for the products incorporating the resources) might be no less important, particularly in the case of ubiquitous primary products. Most of the early expansion in MNE activity in mines, oil wells and plantations was prompted by the prospects of market growth in home countries,⁴⁹ together with a gradual reduction in the production and marketing costs of the primary product. And, as stated in the previous sections, the fact that the ownership of these facilities in the host country was in foreign hands reflected both the superior access to technical knowledge, capital and marketing facilities possessed by the foreign firms and their belief that by internalising the use of their knowledge they could best capture the economic rents on these assets. The early vertical integration of the banana industry (see Chapter 7) is an excellent example of how MNEs dominated the development of this sector. But it is also worth observing that for a variety of reasons, including the colonial domination of many host countries, there were few restrictions placed on the ownership of natural resources by foreigners. The conditions for the growth of such investment, the end products of which were usually free of tariffs or import controls by recipient countries, were then exceptionally favourable in the years leading up to the First World War.

126 The Growth of International Business

The literature suggests that import-substituting investment is determined by such variables as the size of the local market, the relevant stage of the product cycle, comparative input costs, transport costs, government policy, plant economies of scale, and the extent to which the firm needs to be close to its input or finished goods markets (e.g. because of differences in the availability of raw materials, customer tastes, local laws, etc.) *Ceteris paribus*, because of additional communication costs between parent and subsidiary (Hirsch, 1976), firms may have a natural preference for exporting rather than for foreign production; this is enhanced when there are additional political and economic risks in producing abroad. However, some of these costs are incurred mainly at the time of entry, and the marginal costs of expansion may be small. Moreover, as we have seen, there may be compensating risk-spreading benefits from foreign investment. Further, it cannot be assumed that a foreign environment is always less uncertain (or the behaviour of affiliates more constrained) than that of domestic affiliates; this, for example, is the case of some investment by Third World MNEs today.

The history of foreign manufacturing production before the First World War strongly suggests that artificial barriers to exports, in the form of tariffs and other import controls, were perceived at the time to be the most important locational determinant for the initial foreign investment by MNEs; but that, with the benefit of hindsight, many firms would accept that these affected the timing of foreign participation rather than its form, as, even in the absence of trade barriers, this could be justified on other grounds. It is quite clear that there was a perceived threshold for FDI in the nineteenth century, which was probably higher than was justified due to lack of information on the part of firms of the economics of producing outside their home environment; also the fear of losing an existing or prospective market, rather than any aggressive marketing strategy, was the main stimulus for such investment.

Contrary to popular belief, the forty years prior to the First World War were not ones of undiluted free trade; indeed, both in Continental Europe and in the USA the infant industry argument dominated international economic policy. At the same time, many world markets were expanding rapidly and offered attractive prospects to firms possessing the ability to supply them. Often too, for reasons described earlier, the newer industries of the era soon became the growth sectors dominated by international oligopolists, whose defensive strategy undoubtedly accelerated the switch from exports to foreign production (Knickerbocker, 1973; Graham, 1978). In due course the innovations of the last quarter of the nineteenth century were disseminated and the products arising from them became more stan-

Changes in level structure of international production 127

dardised and price elastic. Differences in production costs, and transfer costs between home and host countries then became a more important determinant of corporate strategy.

The product cycle theory of international production is an excellent explanation of this kind of investment and why its extent and pattern varies between countries. *Ceteris paribus*, such production is likely to originate from wealthy industrialised countries and be initially directed to well populated economies following one or two steps behind in the development process. The pattern reflects the comparative innovating advantages of the home countries, their psychic distance from other main markets, the size of the domestic relative to the export market, and the strategy and organisational approach adopted by firms to their foreign activities and international production in particular. Thus, even before 1914, the overseas production/export ratio was considerably higher for US firms than for European firms, and varied considerably between industrial sectors.

We conclude that locational factors were important in explaining the growth in international production relative to exports in the forty years before the First World War, in spite of the reduction in transport costs and the economies of centralised production made possible by new technologies.

(b) 1914-38

In the inter-war years locational advantages continued to shift in favour of international production; indeed, in the case of import substituting investment they were probably *the* main factor leading to what growth there was in FDI. Between 1914 and 1939 the ratio of the stock of FDI to the value of world trade rose substantially. Although part of this rise was accounted for by foreign subsidiaries existing in 1914, there were a large number of new ventures set up, particularly in the 1930s.

During these years, too, an increasing proportion of MNE activity was accounted for by US firms; in the manufacturing sector this more than quadrupled in the years 1914-43, and more than four-fifths of US MNE activity was located in Canada and Europe. There was also some syndicate direct investment in Europe - especially in the 1920s (Teichova, 1974; Franko, 1976). Contemporary empirical studies, e.g. by Southard (1931), Marshall, Southard and Taylor (1936) and the Royal Institute of International Affairs (1937), suggest that most market-oriented investment in developed countries was defensive in character; in Canada, Marshall, Southard and Taylor regard tariffs as 'of overwhelming importance in the branch plant movement' (p.

128 *The Growth of International Business*

201). By contrast, the same writers estimate that only between 15 per cent and 20 per cent of Canadian-American branch factories owed their existence 'in any measurable extent to transportation savings' while the factory costs of US companies in Canada were 'in most cases definitely higher than those in the parent company' (p. 207).

In Europe, Southard (1931) concluded that US firms were prompted to establish branch plants mainly by the need to customise goods (particularly consumer goods) to local tastes, by savings on transatlantic transport costs, especially for bulky or fragile articles, and by non-tariff barriers, e.g. local government purchasing policies and 'buy at home' sales pitches. They also sought to forestall the entry of European firms into US markets through the takeover of European companies. These, and other reasons were to figure in the motives influencing post-Second World War investors, as recorded by Brash (1966 – Australia), Safarian (1966 – Canada), Stubenitsky (1970 – Netherlands), Deane (1970 – New Zealand) and Forsyth (1972 – Scotland) and summarised by Dunning (1973).⁵⁰

It is perhaps worth repeating that, rather more than its national branch plant counterpart, the foreign plant may simply replace part of the domestic production by the parent firm.⁵¹ However, beyond a certain point, foreign production may lead to additional growth, particularly where MNEs already ensconced in foreign countries are instrumental in persuading their hosts to introduce or increase import controls. Research also reveals that once abroad – and indeed in the act of going overseas – US MNEs may have substantially different policy objectives to American exporters (e.g. *vis-à-vis* their domestic operations). In other words, foreign production may bring with it internalising economies which exporting does not. Other studies reveal instances when exports and foreign production are directly complementary to each other (Horst, 1974).

Supply-based investments (in mining and plantations) recorded a mixed performance in the inter-war period. Due to the rapidly increasing demand for oil, both US and European MNEs expanded their investments in crude oil production. Due also to the growing popularity of tropical fruits, US investment in banana and pineapple plantations rose sharply, but in the recession of the 1930s these were cut back sharply. Mining investments rose only slightly, however, except in some of the newer metals, nitrates, etc. As mentioned earlier, the inter-war years saw the establishment of several mineral cartels, although the non-members of these cartels tried to develop alternative materials (e.g. French and German producers switched to aluminium and developed their own bauxite interests in France, Italy and Eastern Europe). There was also some mineral investment in European colonies, while investments in rubber plantations in

Changes in level structure of international production 129

Malaysia and Liberia also expanded. Generally speaking, there was little secondary processing activity by MNEs in the developing countries in this period and few attempts by governments to disinternalise investments in resources. But in the later 1930s new commodity and futures markets began to emerge, which were later to erode the advantages of vertical integration, e.g. in rubber and tea. Reddaway, Potter and Taylor (1968) observe that by the late 1950s there was very little backward integration by UK firms in the raw materials sectors which they had dominated half a century earlier.

(c) 1945–60

The early post-war period favoured the expansion of all kinds of international commerce, and international production in particular. The reasons were both 'defensive' and 'aggressive', and market- and supply-oriented investments were similarly affected. By 1960 it was estimated that the value of international production was approaching that of world trade; and in the case of some countries, e.g. the USA, UK, Switzerland and the Netherlands, it was considerably higher. In the following decade the growth in the FDI stake outpaced that of trade by half as much again. During the 1950s the USA reached the peak of her economic hegemony, but, because of a world shortage of dollars, US firms were obliged to produce overseas to sell their products. There were also push factors at work – such as the growing differential in labour costs between the USA and other industrialised countries, and a revival of American antitrust policy which checked one avenue of domestic growth. Anxious to be the leaders in exploiting their new ownership advantages in foreign markets, US oligopolists in the pharmaceutical, electrical goods, computer, industrial instrument and other industries were quick to establish branch plants in Europe, Canada, Australia and some wealthier Latin American economies. Again, investing firms initially perceived these ventures less as an expansion of their domestic activities as a replacement for part of them.

Much post-war UK direct investment in Canada and Australia was of this kind and there was a certain pattern to it. First a sales and service facility was set up to promote exports; then came local production using imported materials and components, and this was followed by production with some local components, and so on. This process was frequently observed in the 1960s in both UK and US manufacturing investments. Again, rising markets, often protected by import controls, were the main inducements, together with the fear of losing markets to competitors. The abandonment of interna-

130 The Growth of International Business

tional cartel arrangements led several UK firms to set up in the USA, while others saw such investment as the best way to obtain access to American technology.⁵²

The recovery of Western Europe, the move towards economic integration there and in Latin America, and the introduction of export processing zones heralded a new era for manufacturing MNEs and fundamentally affected their production and locational strategies. In the later 1960s and 1970s rationalised investment was the fastest growing sector of MNE activity, and the one which caused host countries almost as much concern as resource-based investment had done previously.

The rapid growth in industrial output following the end of the Second World War led to an unprecedented demand for raw materials to sustain that output, and increasingly the main industrial countries were forced to seek new outlets of supply. For reasons exactly parallel to those prompting backward integration in the nineteenth century, large firms purchasing primary products for processing and fabrication sought to internalise their outlets. So the surge outwards to supply-oriented investment was in direct proportion to the growth in manufacturing output and domestic incomes in the industrialised North. At the same time, there was growing concern among the supplying countries, on both political and economic grounds, about the increasing presence of foreign firms in key natural resource sectors. This was not just a matter of the ability of such firms to extract monopoly rents; much more important was their control over the way in which local resources were used, their rate of exploitation and to whom, on what terms, and by what means they were sold. There was also disquiet about the ways some MNEs earned (or were thought to earn) their economic rent, e.g. by manipulation of transfer pricing, which were not always possible to detect or control. Many of these costs of FDI were attributed to the internalising of transactions between MNEs and their affiliates.

The story about the reactions of host countries to these events is well known. In the present context, the main effect was to encourage or enforce divestments by MNEs in many resource-based sectors, and to change the terms in which others – particularly new investors – were allowed to be involved. Public fiat replaced firm fiat, while at the same time, due to the increasing competition among MNEs and the growth of indigenous firms, markets for many products became less imperfect. The consequence was a decline in the relative importance of supply-based foreign investments in the 1960s and 1970s, except in certain resource-rich developed countries, e.g. Canada, Australia and the UK (for North Sea Oil), and in countries in the Far East which appeared to have the same political persuasion as the

Changes in level structure of international production 131

main investors. It was in this region that Japanese investors made their first major thrust in the 1960s, and even today they have a much larger stake in resource-based investment than either their US or European counterparts. These investments are closely controlled, either directly or indirectly, by Japanese industrial or trading companies.

(d) 1960–78

Let us now turn to the major locational development of the past two decades. Partly as a result of the enlargement of markets, occasioned *inter alia* by rising living standards and regional economic integration, and partly as a consequence of changes in production and marketing strategies on the part of MNEs, the factors influencing the spatial distribution of MNE activity in manufacturing and associated activities has dramatically changed. It now rests less on the kind of determinants associated with either a single import-substitution or supply-oriented investment and more on the appropriate locations for a group of interrelated activities. In this respect there are considerable similarities between inter-regional specialisation within a large market area and international specialisation of activity. There are also parallels with the explanation of the location of similar activities across national boundaries but under separate ownership which give rise to intra-industry trade.

The best illustration of this form of FDI is that of US MNEs in the EEC since around 1960. To capture the economies of scale and centralisation of production, but to take advantage of a free trade area, firms which previously were truncated replicas of their parent companies, each producing similar products for individual markets without trade, have found it economic to specialise in particular products and processes for all markets in the region, and to trade these products across national boundaries. The choice of location and the effect of the rationalisation on the totality and distribution of the capital stake is partly determined by the disposition of existing capacity, partly by production and transaction costs, and partly by country-specific variables, e.g. the availability of skilled labour and materials, transport and communication costs, consumer tastes, government regulations, and so on (Dunning, 1972; Hood and Young, 1980). The result is a balance of activities which is based as much on the comparative resource endowments of a country as on the absolute advantages offered by particular locations. In this respect, companies may behave as countries. The allocation of the activities of companies like N. V. Philips, Honeywell, Ford and International Harvester, in the EEC is based upon this type of strategy. It helps create substan-

132 The Growth of International Business

tial economies of integration, and can usually only be successfully achieved through internalisation of resource transfers. This, in turn, is only viable if there are no restrictions on trade in goods, and policies towards international direct investment are reasonably harmonised.

In Europe, and to a lesser extent in Latin America, the kind of trade associated with this kind of rationalised investment is not obviously based upon differences in the distribution of factor endowments in the classical or neoclassical sense. But in other parts of the world, another type of rationalised investment – the export platform type – is of this kind. Perhaps the most rapidly growing activity of manufacturing MNEs in East Asia, Mexico and some parts of Southern Europe is to take advantage of cheap, plentiful and well motivated labour to produce those products or processes which require such a resource. The main locational impetus giving rise to this has been the growth of manufacturing capacity in a number of NICs, and the generally liberal attitude of these countries to export oriented FDI. It is here where fiscal incentives have been the most generous and most significant in influencing locational choice.

It is worth observing that much of the first and some of the second kind of rationalised production reflect a form of *growth* of foreign participation rather than an *initial* means of entry. Essentially they embrace 'specialisation within diversification', and the benefits realised are entirely those of scale and integration. Some of these economies may be specific to geographical diversification, i.e. those to do with intra-firm trade, and those arising from imperfections in exchange and capital markets and differences in the tax treatment of corporations. These strongly suggest that the common ownership of spatially separated production units *does* influence the way in which resources are allocated.⁵¹

The way that economic integration affects the structure of ownership of firms in a common market as well as their location has not been fully explored in the literature. Like other influences on a firm's growth to which we have given scant attention in this chapter, it underlines the interdependence between the different elements of growth. Neither a purely technological nor an organisational approach to growth is sufficient in itself, and the significance of each varies very greatly according to structural factors. And while in some cases locational theory may be used to explain why a firm chooses to internalise its ownership specific advantages across rather than within national boundaries, in many cases – and especially with rationalised production – there are additional integrative gains which affect the extent and pattern of its activities.

There is one other point which should be made. The 1970s have seen a gradual liberalisation of the attitudes of many governments

Changes in level structure of international production 133

toward both outward and inward direct investment. At the same time, as a result of the learning process of the previous two decades, policies with respect to entry, performance and exit conditions of foreign firms have become more enlightened. Partly too, the world recession has made countries more aware of the potential gains of inward investment; but it has also caused MNEs to cut back on some of their foreign operations to protect their domestic interests. This has been particularly noticeable in the case of US MNEs and, in part, is a reflection of the devaluation of the dollar. By contrast, the expansion of European direct investment in the USA illustrates the increasing profitability of producing in rather than exporting to the USA. Again, this shift in the pattern of international production is a location-substituting kind rather than growth-oriented. To make things more complicated, part of the investment classified as FDI in official statistics may not really be that at all but rather portfolio investment, as there is no *de facto* supervision exercised over the capital exported.

It may be concluded then, that for most of the past one hundred years, foreign production has been of an import-substituting or resource-exploitative kind. As far as the initial entry decision is concerned, quite a lot of the former was a response to changes in the profitability of supplying a foreign market from a foreign rather than a domestic base, and quite a lot of the latter a response to the inability of markets to guarantee a regular flow of inputs of the required quality and at the right price. Once established, however, the growth of affiliates of MNEs became influenced by other factors to do with exploiting the economies of geographical diversification. In the last fifteen or twenty years, the integrated manufacturing and service MNE has come of age, and the strategy of international location now includes the optimisation of integrative gains and production opportunities. These changes have been due to factors both endogenous and exogenous to MNEs; the resulting economies in transaction costs suggest that, as an organisational unit, the MNE may well claim to be 'first and foremost an efficiency instrument' (Williamson, 1981). *Inter alia* they are demonstrated by the growing quantity of intra-group and intra-industry trade among MNE affiliates and between affiliates and their parent companies (Dunning, 1981b).

5.7 SUMMARY AND IMPLICATIONS FOR FUTURE RESEARCH

This chapter began by describing some of the changes in the FDI stake of countries since the 1870s. While recognising that the most

134 *The Growth of International Business*

widely published data are often a poor proxy for the foreign operations of MNEs, they nevertheless give a fairly clear cut picture of how the major investing and recipient countries have fared over the years.

What however, such macro data – even at sectoral level – do not show is the extent and pattern of the growth of individual MNEs. Instead one has to turn to the growth in the size of firms in general, and see how far this is related to their propensity to engage in foreign production. And here the data strongly suggest that, when one has isolated other variables, such as industry, size, country of origin, etc., the firms which are the most multinational are also the largest and fastest growing.

This chapter has attempted to explain the growth of international production using the framework of the OLI paradigm (also referred to as the 'eclectic theory'). First, it has examined the role of technological advances backed by appropriate institutional change in creating proprietary production, marketing and transactional advantages for firms of particular nationalities; second, it has examined the organisational framework by which these advances are disseminated across national boundaries; and third, it has looked at some of the reasons why, given their technological capacity, firms of a particular country of origin should choose to locate their production activities outside rather than within their boundaries.

While this chapter has sought to identify the main factors, it has not attempted to quantify their individual significance. But what can be said is this. The growth of international production reflects a composite of interrelated forces at work. Viewed from a macroeconomic standpoint it is impossible to predict which of the OLI variables is likely to be the most important in motivating such production, in the first place, and in expanding it, in the second. Basically, it is possible to contend that at least one of each of the OLI variables must be present before foreign production takes place, though it is true that a discriminatory policy in favour of foreign compared to domestic firms may be the only ownership advantage which the former may have over the latter.⁵⁴ In some cases the technological superiority of the investing firm may be the primary force, in others the need to internationalise, and in others locational forces.

Once in existence, however, it may be that only one of the components of the OLI paradigm may be necessary to explain the further growth of a foreign affiliate. It is very likely that the concentration of international production in the hands of a relatively few MNEs⁵⁵ is witness to the growing significance of hierarchical advantages which themselves follow from the growth of foreign production prompted by market forces. In some years over the past century, expansion has mainly occurred through *new* MNE entrants; such was the period

Changes in level structure of international production 135

immediately before and after the First World War, when technological progress was particularly rapid and locational forces encouraged a re-siting of plants outside home countries. In other periods, the pressures of existing firms to grow through integration have been particularly strong; this has always been the case in some resource-based industries, and over the last two decades has become especially pronounced in some branches of manufacturing and service industry. In the inter-war years, there was less technological advance and less powerful reasons for firms to internalise markets; but the pursuance of import-substitution policies on the part of many governments led to many exporting firms to react by setting up plants in the countries in question.

It may be that this kind of analytical framework explains much the greater part of FDI over the last hundred years. Obviously, according to home and host countries, sectors and firms – not to mention time *per se* – the configuration of the OLI variables will alter a great deal. But with a little ingenuity and imagination, it should be possible to construct a matrix of OLI values and structural determinants, and then apply a time period to each to produce a reasonably comprehensive and persuasive explanation of the major changes in international production over the last century. But only when a lot more data are available will it be possible to do this.

NOTES

- 1 This chapter adopts the 'threshold' definition of the MNE as an enterprise which engages in production financed by foreign direct investment. According to *Who Owns Whom*, the number of such enterprises was over 12,000 in 1978.
- 2 A selection of these is listed in Dunning (1981a) pp. 42–5, 70–1 and 103–108.
- 3 I recognise that the foreign direct capital stake (a partial input measure) may not always mirror accurately foreign production (an output measure). But until fairly recently, apart from some details of numbers of the leading MNEs and their affiliates, these were the only data available. Note, too, that part of the foreign capital stake, particularly of European countries, took the form of expatriate, entrepreneurial or syndicate investment rather than branch plant activity of firms.
- 4 The definition of FDI – in so far as nineteenth-century investment is concerned – is still a matter of dispute among economists. But current thinking, as articulated especially by Svedberg (1978, 1981), Stone (1977) and authors of industry and country studies, suggests that quite a large part of investment originally classified as portfolio by the statisticians of the day was, in fact, managed or controlled by non-residents; while contemporary estimates of direct investment often excluded reinvested profits.
- 5 This was the modality chosen by many European mining companies – e.g. Rio Tinto, originated by a group of UK entrepreneurs purchasing a mine of that name in Spain in 1873 – and also for some railroad investment. In such cases, there were often two boards of directors – one in London mainly concerned with the invest-

136 The Growth of International Business

- ment management, and the other in the host country which dealt with immediate organisational and operational matters (Wilson, n.d.).
- 6 For some examples of British and Continental European investment in the US see Coram (1967). For a more general account of the early activities of MNEs see Wilson (n.d.) and Wilkins (1974b).
- 7 According to Vaupel and Curhan (1974), some 122 manufacturing subsidiaries of 187 large US-based MNEs in existence in 1968 were set up prior to 1914; the corresponding number of subsidiaries for 48 UK MNEs (including Unilever) was 60; and that of 88 Continental European MNEs (including Royal Dutch Shell) was 167. There were no subsidiaries of 67 Japanese large MNEs in 1971 which were set up prior to 1914.
- 8 Included among these was a whole range of new consumer industries supplying branded goods, e.g. cigarettes, soap, margarine, chocolate, glass, preserved milk, etc., which companies like Nestlé, Levers (the Dutch margarine makers) and Cadbury, were able to take advantage of: Wilson (n.d.) links the origin of this kind of MNE to the fall in living costs (and hence rise in real incomes) which occurred as a result of the Great Depression between 1873 and 1896.
- 9 Although there were also instances of such dependence in the mining industry, e.g. copper in the Congo, gold in the Gold Coast, etc.
- 10 As derived from data presented in Vaupel and Curhan (1974).
- 11 Using data derived from business histories and company archives, Nicholas (1982a) has set out details on the industrial structure of 119 UK MNEs which made a foreign direct investment between 1870 and 1930, and has compared this with that of a sample of pre-1914 US MNEs and of the largest 50 UK firms in 1919 and 1930. His findings about the structure of large UK and US firms at that time correspond to those of earlier writers, e.g. Chandler (1977); but perhaps of greater interest in the present context is the considerable similarity revealed between those sectors which 'dominated' the UK corporate economy and those which dominated UK direct investment.
- 12 Deflating the data set out in Table 5.1 by the British price indices, the real value of the foreign direct investment stake rose by at least 50 per cent between 1914 and 1938.
- 13 See Vaupel and Curhan (1974).
- 14 It is difficult to disentangle how much of these were branch plant investments. But, as in the case of the pre-war investment in Russia, one suspects that the majority were undertaken by foreign capitalists acquiring a majority equity shareholding in indigenous companies; and by foreign entrepreneurs mobilising and allocating capital and technology from their home countries.
- 15 For further details see Table 5.4.
- 16 Data on the number of new manufacturing affiliates of MNEs collected by the Harvard researchers are not available for non-US enterprises after 1970, but by that date the number of new US affiliates was falling below its peak in the mid-1960s while that of parent companies of other nationalities was rising.
- 17 For example of 1369 instances of nationalisation recorded by United Nations (UNCTC) (1978) between 1960 and 1976, 67 per cent were recorded in the final six years. Of some 19 producers' associations existing in 1976, only one (OPEC) was operating in 1960.
- 18 This table is also extracted from data compiled by Vaupel and Curhan (1974).
- 19 For example Sekiguchi (1979) estimates that of 1271 Japanese companies with foreign direct investments in March 1975, 482 had a paid up capital of less than 100 million yen (about \$0.5 million). The great majority of these were first set up after 1960. See also Tsurumi (1976).
- 20 The corresponding figures for pre-1914 and 1919-39 were 62 per cent and 63 per

Changes in level structure of international production 137

- cent respectively. Throughout these years, the propensity of US MNEs to operate wholly-owned subsidiaries was greater than that of non-US MNEs.
- 21 In the case of Switzerland, one suspects a large proportion of this increase is accounted for by an outward re-channelling of investment by foreign MNEs in Switzerland, prompted by tax and/or exchange rate advantages. In several other countries, however, foreign affiliates themselves engage in outward direct investment. Examples include Australia, Canada, Bermuda, Hong Kong and the UK. Sometimes this is for administrative or tax convenience, e.g. where the responsibility for running a group of affiliates is allocated to a regional office; in others, an affiliate may be better able to serve and/or produce in some foreign markets than its parent company.
- 22 By contrast, most US voluntary divestments or liquidations of manufacturing affiliates occurred in Europe (see Boddewyn, 1979).
- 23 In 1975 some 59 per cent of total sales by majority owned affiliates of US MNEs were intra-company.
- 24 We shall not be concerned with these latter flows in this chapter.
- 25 For a review, and suggested integration of these approaches see Casson (1982).
- 26 Imagine, for example, an economy which produces a given quantity of 10 separate products, the production of each of which involves 6 different inter-firm intermediate transactions. The maximum number of different kinds of firm which might produce these goods is then 60, but by internalising the transactions the number could be reduced even to one firm producing the entire output.
- 27 These comprise the economic environment, system and policies of government – the so-called ESP combination.
- 28 These factors are not necessarily sequential in the decision-taking process. Moreover other writers express them rather differently. For example, David Teece in Chapter 3 of this book suggests that an understanding of the MNE involves an answer to two sets of questions, first 'what determines the location of productive activities across the globe', and second 'what determines the governance of these activities'. One may, however, reverse the order of these questions by asking 'what determines whether companies headquartered in one country are able to supply markets independently of where they are located', and 'what determines where they locate their productive activities to supply these markets'. I prefer this latter format, believing the organisational mode of MNE activity is more likely to be influenced by the extent and nature of that activity, than by its spatial distribution. But see Section 5.6, p. XXff.
- 29 For a recent review of the literature see Kamien and Schwartz (1982).
- 30 By the 1880s, continuous processing machinery and plants had been developed in the production of such products as cigarettes, matches, breakfast cereals, flour, soap and a wide variety of canned goods (Chandler and Daems, 1974). See also Wilson (n.d.). However, a working paper by James (1981) suggests that in the USA over the period 1850-90, technological arguments do not explain firm size. See also Wilkins (1976), (1977a), (1977b).
- 31 Mostly other European countries and Russia.
- 32 Between these years the UK was responsible for 31.3 per cent of all foreign patents granted in the USA, Germany for 26.2 per cent, France for 10.1 per cent and Canada for 15.3 per cent.
- 33 It is noteworthy that there were several inventions in Europe that were later adapted and commercialised with greater success in the USA, e.g. the internal combustion engine, the fluorescent lamp, photo-lithography.
- 34 And in so doing imposed barriers of communication between the ultimate customer and the producer (Kindleberger, 1964, p 148).
- 35 As set out, for example, in United Nations (UNCTC) (1978).

138 The Growth of International Business

- 36 But see Section 5.6, p. XXff.
- 37 For a discussion of such exports of technology from the perspective of the product cycle theory of international investment, see Dunning (1971).
- 38 This was one of the key motives for the internalisation by the Singer Sewing Machine Company of its selling outlets. For a fascinating discussion of the move from agency to direct selling organisations by UK firms in the 1870-1939 period, see Nicholas (1982a).
- 39 In some cases, e.g. in the early non-ferrous and precious metal ventures by UK firms, the original thrust outwards was essentially an entrepreneurial one, in which it was intended to sell the mined product on the open market, or by contract. Out of this kind of investment, many of today's mining giants, e.g. Rio Tinto Zinc, emerged.
- 40 It should be noted that some of these motives are interdependent. In most cases, vertical selling implies a technological advantage on the part of the integrating company, while most kinds of technology exploited via FDI imply forward integration.
- 41 In an extremely perceptive article, Chandler (1981) has pointed out that in the UK the invisible hand of the market worked more effectively than in the USA. He puts this down to the early dominance of the family firms in Britain which were reluctant to surrender their autonomy, and to a tightly organised distributional network. By contrast, the growth of US firms coincided with the development of managerial capitalism and the railroad; and from the start hierarchies became a more attractive way of organising production and selling activities.
- 42 Such as the Dupont/GM financial control system and the organisational innovations made within the Bell system which helped free businesses from the dis-economies of scale inherent in the military form of organisation; see Quirin (1980).
- 43 For an analysis of the factors influencing the investment of smaller MNEs, see Newbould, Buckley and Thurwell (1978).
- 44 In other words, at a price at which the MNE could recoup the gains of internalisation.
- 45 Put in another way, the common ownership of productive facilities generates particular advantages to the owner quite apart from those which might have arisen through the rationalisation of these activities by independent entities. This proposition negates the prediction of the so-called separation theorem; see Caves (1980), and the next section of this paper.
- 46 In some cases, host government policy towards inward direct investment has been the crucial factor determining the organisational form by which foreign resources are imported. The two examples which come most readily to mind are Japan and India, but, throughout the developing world, there has been a general preference of governments for joint ventures and/or contractual resource flows relative to a 100 per cent foreign equity stake.
- 47 There is a good deal of evidence about the ownership strategies of MNEs and other firms with non-equity foreign interests to back this up (see e.g. Stopford and Haberich, 1976).
- 48 For an analysis of the differential risks involved, see e.g. Rugman (1979).
- 49 This was especially notable in the case of agricultural products at the time of the Great Depression (1870-95), when both raw material and transport costs fell sharply. This, together with improved methods of quality control, raised consumer demand and encouraged further investment in both food products and in several types of raw materials which were ingredients of processed goods which had a high income elasticity of demand, e.g. cocoa (for chocolate), tobacco, sugar, palm oil (for soap) and many canned foods.

Changes in level structure of international production 139

- 50 Some authors, e.g. Forsyth (1972), distinguish between factors prompting outward investment by US firms in general and those which favour one host country rather than another. It is in this latter group that investment and labour availability are shown to be of some relevance.
- 51 But of course a foreign affiliate may act as a sales agent for the export of goods not produced by itself.
- 52 For a survey of research on FDI in the US see Arpan, Flowers and Ricks (1981).
- 53 This suggestion counters the proposition that administrative links between multi-production units, and particularly among affiliates of MNEs and between them and their parent companies, do not affect the allocation of resources. In a study of US direct investment in Canada, Caves (1980) finds 'appreciable although incomplete support' against this proposition.
- 54 In other words, I agree with those who argue that monopoly advantage on the part of a particular firm is a necessary condition for FDI. For a view of international trade which preserves the role for the traditional sources of comparative advantage, yet also takes account of economies of scale and imperfect competition see Krugman (1979), (1981).
- 55 Even though in particular sectors concentration ratios may be falling (Dunning and Pearce, 1981).