FDI, THE LOCATION ADVANTAGES OF COUNTRIES AND THE COMPETITIVENESS OF TNCS: US FDI IN PROFESSIONAL SERVICE INDUSTRIES

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Abstract

This paper seeks to examine the impact of the foreign activities of firms on their international competitiveness. It addresses questions such as: to what extent and under what conditions can firms compensate for deteriorating location advantages of their home country and maintain their lead in an industry through investment in foreign countries? Under what conditions can firms reap the benefits of a locationally advantageous foreign country? These questions are examined with reference to selected US professional service industries.

The findings show that FDI weakens the link between the location advantages of home countries and the ownership advantages of firms, as it enables firms to develop advantages which are not directly related to the location advantages of their home countries. However, this impact is very moderate, and is exercised through the indirect impact of FDI on the advantages of firms and countries. The ownership advantages which firms develop in their home countries are the most critical determinant of their competitiveness.

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1. Introduction

The different patterns of national participation in international economic activity suggest that firms of particular nationalities tend to excel in certain activities, in a manner that reflects the resources abundant in their countries of origin. This implies that home country characteristics are important determinants of firms' abilities to create ownership advantages and of their subsequent competitive positions in international markets. Empirical studies indeed show that home countries affect the competitiveness of firms more than any other location in which the firms operate (Porter 1990, Dunning 1996, Pauly and Reich 1997, Nachum and Rolle 1999a, 1999b, Nachum 1999).

This link between the characteristics of home countries and the competitiveness of firms is particularly strong when firms are active only or mainly in their home countries and serve foreign markets by exports. Under such circumstances, locationally advantageous countries are likely to be the home for internationally competitive firms in particular industries, and when countries lose their location advantages, firms will respond by a corresponding loss of their ownership advantages. However, when firms implement large parts of their value added activities outside their home countries, the link between the characteristics of the home countries and the ownership advantages of firms is likely to be weakened (Cantwell 1989, 1990). Consequently, changes in the location advantages of countries may not necessarily be reflected in corresponding changes in the competitiveness of national firms. A loss of a country's location advantages in a particular industry thus may not always imply a corresponding deterioration of the ownership advantages of a country's firms and their position in an industry. Rather, when countries lose their location advantage their firms may maintain their

strength via activities in foreign countries. Likewise, a country's firms may not be the only beneficiaries from the location advantages of their home country. Foreign firms may gain access to these advantages via foreign investment and may develop similar ownership advantages.

In this paper I seek to examine the implications of the foreign activities of firms for the link between the location advantages of home countries and the competitiveness of firms. I address questions such as: To what extent and under what conditions can firms compensate for deteriorating location advantages in their home country and maintain their lead in an industry through investment in foreign countries? Under what conditions does the dominance in an industry shift from such firms to firms based in another country whose location advantages are increasing? Under what conditions can firms reap the benefits of another locationally advantageous country and when are these exclusive to national firms? These questions are examined with reference to professional service industries, where the concentration of the leading firms in very few countries suggests a strong impact of home countries on the competitiveness of firms. These industries have also been characterised by intense FDI activity, notably in more recent decades, making them a most interesting case for the examination of the questions addressed here.

2. FDI and the Link Between the Advantages of Firms and Countries

FDI theory suggests that firms develop their ownership advantages based on the resources abundant in their home countries. Thus, firms based in a locationally advantageous country would develop strong ownership advantages, and these would enable them to compete successfully in international markets[1]. In his discussion of the type of advantages required for international operation, Hymer (1960/1976) implicitly implied a national origin for these advantages. He conceived the advantages that enable firms to compete successfully in

international markets to arise from favourable access to certain resources abundant in their home countries, which are denied, or not available under similar conditions, to firms located in other countries. Later attempts (Vernon, 1966) regarded the capabilities of firms in using physical and human assets to create ownership advantages as country-specific in origin. Vernon turned to the link between the location advantages of the US and the advantages of US firms, and maintained that the latter, and particularly the capacity of US firms to innovate new products and processes, are determined by the structure and pattern of US factor endowments and markets. Dunning explicitly attributed the ownership advantages of firms to the characteristics of their home countries, and maintained that the ownership advantages of one country's firms reflect the resource endowments and institutional framework of their home countries. Hence, differences among countries in the configuration of these resources explain the different structure of the foreign activities of firms of different nationalities (Dunning, 1979, 1988, 1993). More recently, there has been a renaissance of interest in the link between the advantages of firms and the characteristics of their home countries and a realisation that the globalisation of the world economy has not undermined the value of advantages gained in the home countries. This renewed interest was led by Porter (1990) and the stream of studies that have sought to test and extend his Diamond of national attributes (Rugman and D'Cruz 1993, Hadgetts 1993, Cartwright 1993, Jense et al 1994). Empirical studies have illustrated the similarity between firms originating from the same country and the differences across countries, and have attempted to attribute these differences to specific conditions facing firms in their home country (Kogut 1993, Schroath et al 1993, Shane 1994, Dunning 1996, Yip et al 1997, Zaheer and Zaheer 1997, Nachum 1999).

FDI theory also suggests that the competitive position of firms in the international market is determined by their ownership advantages. Ownership advantages are distinctive capabilities that distinguish the firm possessing them from its actual and potential rivals. Such advantages enable firms to perform in unique ways, not available to

their competitors, and to acquire a dominant position in their market. They enable the firm to capture market share and to grow faster than other firms in their industry and to expand more rapidly than the general rate of growth of markets. Following the seminal work of Hymer (1960/1976), the possession of ownership advantages has been considered as the factor determining the ability of firms to operate abroad and their competitive position in international markets (see Dunning 1993, Lall 1980, Cantwell 1990, among others).

Based on these links between the location advantages of countries and the ownership advantages of firms, and between the latter and the competitive position of firms, Figure 1 presents several possible combinations resulting from dynamic changes in the location advantages of home countries and the ownership advantages of national firms and draws their implications for the competitive position of firms. In an economic world in which firms operate within their home countries and serve foreign markets via exports, their ownership advantages would reflect the location advantages of their home countries. Thus, a locationally advantageous country would have firms with strong ownership advantages and sustained competitive position, as described in the upper right box of Figure 1. If the home countries lose their location advantages, their firms would respond by a corresponding loss of their ownership advantages, as described in the low left box of Figure 1. Only when the ownership advantages of firms are influenced by conditions in foreign countries, as a result of their activities in these countries, can a discrepancy between the location advantages of the home countries and the ownership advantages of firms arise. Such situations are described in the upper left box and the lower right box of Figure 1.

When countries which were locationally advantageous in certain industries, and became the home for the leading firms in these industries, lose their advantages, their firms may maintain their competitive position through FDI (the situation described in the upper left box). Firms which originated from a country that was historically

strong may thus retain their lead, even at a time when the conditions that gave rise to this dominance are deteriorating (Cantwell 1990). An example of such a development is suggested by the activities of Japanese manufacturers who have moved parts of their production abroad in response to increased labour costs at home, and have maintained the strength of their ownership advantages via FDI. However, advantages gained by investment in a foreign country may not be as strong as those gained at home (Hu 1992). Firms of other nationalities can similarly gain access to the location advantages of a foreign country and develop similar ownership advantages. Most notably, indigenous firms of the host country are likely to have favourable access to these resources and to develop strong ownership advantages. Therefore such advantages are unlikely to provide as strong a position in an industry, and the lead of firms is likely to be shared with firms of other nationalities.

The second possible response of firms to a decline in the location advantages of their home countries is a corresponding loss of ownership advantages (the lower left box in Figure 1). Under this scenario, a country's firms will lose some or all of their past dominance in an industry. Such developments are likely when firms maintain most of their activities in the home country, which no longer provides the advantages it did in the past, and serve foreign markets mainly or only via exports. They can also result from the inability of firms to use the resources abundant in foreign countries as the basis for their ownership advantages. Examples of such a loss of a country's dominant position in an industry and the movement of the lead to firms based in other countries are abundant (the UK car industry for one).

When the location advantages of home countries are strong and sustained over time, they tend to attract foreign firms. The outcome of this investment depends on the relative strength of the ownership advantages of national firms vis-à-vis those of the foreign firms. Two scenarios might be possible. One, which is described in the lower right box, is that foreign firms are strong enough to compete successfully

against national firms. In this case, they are likely to develop ownership advantages similar to those of the national firms and to gain a strong competitive position in the industry. Some Japanese investment in the US illustrates this scenario. This investment enabled Japanese TNCs in certain industries to develop ownership advantages that are in many ways similar to those of US firms and to threaten their lead in the relevant industries. The investment of UK advertising agencies in the US, notably during the 1980s, is also of this kind. As a result of this investment, UK agencies have increased their size and acquired managerial and organisational skills of running a large international network. Part of the recent strength of UK agencies can be attributed to the capabilities they have developed in their US operations. Under such circumstances, a country may maintain its location advantages, or even become more locationally advantageous, but the relative strength of the ownership advantages of its own firms would diminish and the country patterns would tend to dissipate over time (Cantwell, 1990). However, such a development depends on the extent to which foreign firms are able to benefit from the location advantages of a foreign country in a manner similar to the benefits accruing to national firms. It has been argued (Porter 1990, Hu 1992) that national firms enjoy favourable access to the resources available in their home countries and foreign firms cannot benefit from these resources to the same degree.

It is also possible, as described in the upper right box, that the strength of national firms creates high barriers to entry and prevents foreign investment. Foreign firms are unable to compete successfully in the locationally advantageous country and the ownership advantages of national firms remain strong and sustained over time. The US computer and management consulting industries, in which the US receives small amounts of FDI, despite its apparent location advantages, suggest examples of such a situation.

In what follows, I use the framework presented in Figure 1 to examine the impact of FDI on the changing competitive position of firms in five

professional service industries: advertising, management consulting, engineering consulting, accounting and law.

3. The Choice of Professional Services and the Country Patterns in these Industries

Professional service industries are particularly interesting for the examination of the issues addressed here. The advantages of professional service firms are based exclusively on intangible, often mobile assets, whose ties to any particular location, including the home country, are not evident. Consequently, there seems to be no reason for a link between the advantages of firms and the characteristics of their home countries. Nonetheless, the leading firms in many of these industries originate from very few countries and their dominant position in their industries is often sustained in spite of the rapid expansion of international activity during the last few decades in these industries. Traditional explanations, based on relative abundance of tangible factors of production, cannot provide a satisfactory explanation for these patterns. These industries thus provide an opportunity to examine different aspects of the ways in which home countries affect the advantages of firms. Such aspects are of special interest when the advantages of firms in a growing number of manufacturing and service industries increasingly derive from intangible, partly mobile, assets.

Figure 2 presents the national distribution of the leading TNCs (ranked according to total world-wide revenues[2]) in several professional service industries, based on the lists of the top firms[3], published annually in industry publications. The sources of the data were followed in determining the nationality of firms. They tend to use the location of the headquarters as a proxy for the nationality of a firm, because it is usually the centre of a firm's activities. However, such an approach is somewhat obscure in industries where partnership is the dominant ownership form (as in accounting, law and to a lesser extent in management consulting). Firms owned by their partners are networks

which group separate, locally-owned partnerships, with no common equity base, and each has its own managerial structure and work routines (Post 1996). The nationality of these networks cannot be identified in a manner similar to that of corporations. The common practice used in this regard by the industry publications which list the top firms, and which is adopted here, is to link firms to the country in which the dominant partnership is located[4].

The presentation in Figure 2 suggests a considerable variation across the industries in terms of the national distribution of the leading TNCs. Some industries are dominated by TNCs from a single or very few countries, while in others the lead in the industry is taken by TNCs originating from a large number of countries. The management consulting industry, strongly dominated by US firms, illustrates the former, while the engineering consulting industry provides an example of the latter, at least historically. Furthermore, the dominance of firms of a particular nationality is more sustained over time in some industries than in others. For example, US management consulting firms have maintained their lead in the industry and have slightly increased it during recent decades. By contrast, the share of US advertising agencies among the top agencies had diminished by 1995 to only two-thirds of its size in 1980, and the lead in the industry is shared by firms originating from several countries. In the rest of the paper, I seek to examine how the foreign activities of firms in these industries have influenced these patterns and their dynamic changes over time.

4. Some Statistical Testing

The US is the only country that publishes FDI data for individual professional service industries, and it is thus the only country for which the issues addressed here can be examined statistically. Table 1 presents several measures for the location advantages of the US, the ownership advantages of US firms, and inward and outward US FDI data in selected professional service industries over the last two decades. Elsewhere (Nachum 1999, chapter 3) I have developed the

theoretical arguments for the choice of the first two constructs and their operations as the most powerful measures for the location advantages of countries in professional service industries. I have also shown empirically their explanatory power for the competitive position of firms in several professional service industries. The argument underlying the choice of the import/export ratio is that increase (decrease) in the ratio indicates that a country's location advantages are becoming more (less) attractive than those of competing countries (see Dunning 1988 for a similar use of this ratio)[5]. Various measures of performance are commonly used as indicators of ownership advantages (see Dunning 1988, Cantwell 1989, 1990). In Nachum (1999, chapter 4) I have discussed the theoretical foundations for the use of these indicators and I have shown their link with the possession of ownership advantages of advertising agencies. The data in Table 1 is used to examine the various possible influences of FDI on the links between the location advantages of countries, the ownership advantages of firms and their subsequent competitive position, as summarised in Figure 1.

The data in Table 1 illustrate considerable variation across the industries and over time in terms of the location advantages of the US, the ownership advantages of US firms and the investment position of the US. The three indicators of location advantages suggest that the US possesses strong location advantages in the management consulting industry. The ownership advantages of US management consulting firms have been strong relative to those of their main competitors, strong enough to prevent inward FDI to the US and to enable US firms to become successful outward investors (Table 1). This scenario corresponds to the situation described in the upper right box of Figure 1, in which the strong ownership advantages of national firms prevent foreign firms from investing in a country and, at the same time, enable them to compete successfully in foreign countries. The dominant position of US firms in the management consulting industry is thus sustained over time, and they are able to strengthen their ownership advantages via outward FDI.

A similar situation seems also to describe the accounting and law industries. The US is locationally advantageous in these industries, and its advantages have intensified during the last two decades. The ownership advantages of US firms, although somewhat weakened, have remained strong. Registered FDI activity in these industries is moderate (compared with the other professional service industries)[6]. The partial picture provided by the available data, along with anecdotal observations regarding the patterns of international activity in these industries (see Spar 1997 for law, Post 1996 for accounting), suggests strong FDI outflows from the US with only moderate FDI inward flows. The strong ownership advantages of US firms in these industries have enabled them to develop a strong competitive position in international markets and to create barriers to entry to foreign firms seeking to invest in the US[7]. As in the management consulting industries, the situation in these industries also corresponds to the scenario described in the upper right box of Figure 1, in which national firms prevent foreign firms from gaining access to the favourable resources in their home country and maintain their lead in an industry.

The data presented in Table 1 suggest that both the location advantages of the US and the ownership advantages of US firms are moderate in the engineering consulting industry, with the former somewhat improving and the latter deteriorating in more recent years. Weaker ownership advantages of US firms, along with improving location advantages, have attracted foreign firms to invest in the US (Table 1). This situation corresponds most closely to the right lower box in Figure 1, in which the location advantages of the home country are sustained but national firms are losing the relative strength of their ownership advantages, as foreign firms gain access to the conditions which initially gave the rise to these advantages. Inward FDI thus prevents the exclusive access of national firms to the resources abundant in their home country.

The imports/exports ratio in advertising suggests that the location advantages of the US deteriorated between 1980 and 1990, with some recovery during the 1990s (Table 1). This situation has facilitated the outward investment of US agencies, who were able to strengthen their ownership advantages at a time when the location advantages of the US were diminishing. These developments correspond most closely to the situation described in the upper left box in Figure 1, where the home country is losing its location advantages but national firms maintain the strength of their ownership advantages via FDI. However, as advantages gained in a foreign country are not as exclusive as those gained in the home country, the lead in the industry is taken by firms from a larger number of countries, as happened in the advertising industry during the 1990s.

In order to examine more systematically the impact of FDI on the international competitiveness of TNCs, we construct a model that links the international competitiveness of US TNCs as the dependent variable with several potentially significant explanatory variables. The latter include the location advantages of the US, the ownership advantages of US firms, and inward and outward FDI, measured at the level of individual professional service industries, and over time.

The model is of the form:

$$\mathbf{Cjt} = f(\mathbf{Ljt; Ojt; IFjt; OFjt}) + \mathbf{Ejt}$$

where:

C - Competitiveness, measured by the US shares of the leading TNCs world-wide

L - Location advantages of the US, measured by import/export ratios

O - Ownership advantages of US firms, measured by the growth of revenues of US TNCs relative to the average growth of the leading TNCs in an industry[8]

IF - Inward FDI, measured by sales of non-bank foreign affiliates in the US

OF - Outward FDI, measured by sales of US affiliates abroad

E – Random error

j – Industries. J=1....5: advertising, management consulting, engineering consulting, accounting and law
t – Time. T=1....12: 1985-1996[9]

The results of the estimation of the model by means of multiple regression analyses are presented in Table 2.

The models explain a considerable portion of the variation in competitiveness among US professional service industries and are highly significant (p-values = 0.000 in both models). However, the model loses some of its explanatory power when FDI variables are included, and these variables are insignificant. The location advantages and the ownership advantages lose some of their explanatory power in the model with FDI, though they remain of similar magnitude and similar direction of causality. These findings suggest that FDI weakens somewhat the link between the location advantages of countries and the competitiveness of US professional service TNCs. FDI does not have a significant impact on the competitiveness of US TNCs on its own. Rather, it affects the competitiveness of US TNCs indirectly, via its impact on the location advantages of the US and on the ownership advantages of US firms.

Location advantages are not significant in both models, a finding that may reflect, at least partially, the limitations of a trade-based measure in professional service industries. It might also be attributed to the fact that US TNCs have well-developed international activities, and, as previous research has shown, at this stage the location advantages of the home countries are less critical for the competitiveness of firms (Cantwell 1990, Dunning 1996, Nachum 1999). By contrast, ownership advantages possess strong explanatory power for the variation in competitiveness, and explain most of this variation in both models. The emphasis thus moves from the location advantages of the US to the ownership advantages of US firms and to their ability to tap into foreign resources as the critical determinants of their competitive position.

The direction of causality between the FDI variables and competitiveness, the dependent variable, is most interesting. Inward FDI has negative sign, i.e., acts to diminish the competitiveness of US firms, while outward FDI strengthens it. This is in line with the arguments summarised in Figure 1, according to which inward FDI may threaten the competitive position of firms as it gives foreign firms access to the resources that provided their initial strength. Outward FDI acts to strengthen the competitiveness of firms when it enables them to benefit from resources available in foreign countries. However, this interpretation should be taken with great caution, as FDI variables are not significant.

5. Conclusion and Possible Generalisations

The analyses conducted in this paper have shown the different circumstances under which FDI affects the link between the advantages of firms and their home countries and the competitiveness of firms. The foreign activities of firms enable them to develop advantages which are not related, or at least not directly so, to the location advantages of their home countries. Outward FDI may thus strengthen the ownership advantages of firms, at a time when the location advantages of their home countries are deteriorating. Inward FDI may allow firms to get access to resources not available in their home country and to develop strength based on the location advantages of foreign countries. FDI thus weakens the link between the location advantages of home countries and the ownership advantages of firms, which tends to be strong when firms operate only or mainly within their home countries.

Thus, US advertising agencies were able to maintain the strength of their ownership advantages at a time when the US has been losing some of its location advantages. In a similar manner, an increase in the location advantages of the US in the engineering consulting industry has facilitated a substantial increase in inward flows to the US rather than strengthened the ownership advantages of US engineering consulting TNCs. In these industries, FDI has created some

discrepancy between the location advantages of the US and the ownership advantages of US TNCs. In the three other industries analysed (management consulting, accounting and law), there seems to be a close link between the location advantages of the US and the ownership advantages of US TNCs, with changes in the former reflected pretty well in the latter.

However, the results of the regression analyses suggest that, on a whole, FDI weakens only slightly the link between the location advantages of the US and the competitiveness of US professional service TNCs. Both inward and outward FDI do not possess significant explanatory power for the competitiveness of US TNCs, after taking account of the advantages of firms and countries. The inclusion of FDI has diminished the overall explanatory power of the model, as well as of the individual explanatory variables, but this change is moderate. This implies that FDI by itself does not influence the competitiveness of US professional service firms. Rather, this impact is exercised via the influence of FDI on the location advantages of the US and on the ownership advantages of US firms. These findings suggest that the foreign activities of firms have only a moderate effect on their competitiveness, and the ownership advantages which firms develop in their home countries have the dominant influence on their competitiveness.

Future research may examine the extent to which the findings reported here, based on several US professional service industries, can be generalised to other industries and countries. To the extent that there are differences across industries in terms of the impact of FDI on the competitiveness of firms, they may not be related to a distinction between services and manufacturing, which is often made in such context. Professional service firms often have more in common with manufacturing firms than with other service firms. For instance, like professional services, manufacturing firms are increasingly relying on intangible assets as critical for their competitive position (such as knowledge in technologically advanced manufacturing industries). By

contrast, professional service firms differ from other service firms in some critical aspects, such as the role of cheap labour in consumer services and of human capital in professional services. It is also likely that certain characteristics of the US limit the validity of the findings to other countries. Notable among them is the large size of the US, as well as the age and international maturity of US TNCs, which are likely to create a unique combination of advantages of firms and countries, and to lead to a different effect of FDI on them.

Notes

1. This conceptualisation is based on the assumption that causality goes from the resources of home countries to the ownership advantages of national firms, and a possible impact of the latter on the former is usually ignored. In many cases, however, circular and accumulated causation between country characteristics and the advantages of firms, in which the two are not independent of each other (Cantwell 1989), better describes the process of the development of ownership advantages by firms. It seems likely that at least under certain circumstances, firms shape the mobile and immobile resources of their home countries, which in turn affect their ownership advantages. The assumption that causality goes from countries to firms may apply more often than not, but may not always be a valid assumption (see Nachum 1999 for a discussion of the specific conditions under which this assumption may hold).

2. Law firms are ranked according to number of partners because revenue data are not available.

3. Subject to data availability, the ranking of advertising agencies, engineering consulting and law is based on the lists of the largest 50 TNCs in these industries. In management consulting the top 40 firms are used, and in accounting the top 30 firms in 1983 and 1990 and the top 42 firms in 1995.

4. The diversification activities of firms, notably those of the originally accountancy 'Big Eight' (later 'Big Six') into management consulting and law, have often blurred the boundaries between these industries. This trend is not new, having its origins at the end of the 19th century (Kippings and Sauviant 1996), but in recent decades it has reached such a significant magnitude that the position of the established management consultancies and law firms has been challenged.

For example, in 1996, Arthur Andersen, one of the 'Big Six' accounting firms, was the fastest growing law firm in the UK (The Economist 1996). As a result of these developments, several of the top firms that comprise the lists summarised in Figure 2 appear in more than one industry.

5. The low tradability of professional services might question the use of this ratio. However, the large increase in US trade in professional services suggests that considerable cross-border activity in these industries is taking place via trade. In 1996, business, professional and technical services were among the fastest growing categories of US service trade, with exports and imports reaching $19.2 and $5.2 billions respectively. Both have increased more than four times during the last decade (Survey of Current Business 1997).

6. A major reason for this situation is the ownership structure common in the law and accounting industries. As partnerships, the 'affiliates' are often owned by the partners in the foreign country and do not have ownership links with the parent firm. Thus, the activities of these 'affiliates' are not registered as FDI.

7. Another reason for the moderate inward flows to the US in law and accounting is that national legislation in these industries creates high barriers to entry, and prevents FDI by foreign firms which are not familiar with US law and accounting standards. This factor does not disturb the international expansion of US firms (as well as of UK firms) to the same extent because US (and UK) standards dominate the international markets in these industries.

8. The more common indicator of ownership advantages, i.e., some measure of international activity, was judged to be inadequate for US TNCs, where the home market usually accounts for

higher shares of activity compared with TNCs of other nationalities.

9. In law from 1988 - the earliest date for which data is available to calculate the dependent variable.

TABLES AND FIGURES

Table 1. The location advantages of the US, the ownership advantages of US firms, and inward and outward US FDI
Selected professional service industries, 1980-1995

	Advertising			Management Consulting			Engineering Consulting			Accounting			Law		
	1980	1990	1995	1980	1990	1995	1980	1990	1995	1980	1990	1995	1980	1990	1995
Location advantages (Relative Location Advantages (RLAs) and ratios)															
Abundance of qualified employees (RLAqe)/1	n.a.	1.427	n.a.	n.a.	1.297	n.a.	n.a.	0.680	n.a.	n.a.	n.a.	n.a.	n.a.	1.051	n.a.
Size of domestic market (RLAms)/2	n.a.	n.a.	n.a.	n.a.	1.811	1.724	0.791	0.925	0.953	n.a.	n.a.	n.a.	n.a.	1.594	1.452
Imports/Exports ratio/3	0.819	1.869	1.286	0.196	0.381	0.368	0.396	0.196	0.119	1.380	0.478	0.836	0.412	0.246	0.270
Ownership advantages (Averages of the US sample relative to the average of the group of the leading TNCs in an industry)/4															
Performance/5	1.13	1.16	1.18	n.a.	1.05	1.03	n.a.	n.a.	1.11	(1.58) /8	1.40	1.16	(1.03)/ 9	1.12	1.05
Growth/6	-	0.57	1.07	-	n.a.	0.97	-	n.a.	n.a.	-	0.82	-0.28	-	1.40	0.00
Multinationality/7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.87	0.74	0.67	1.17	1.11	0.96	n.a.	1.03	0.82
FDI (Sales of non-bank affiliates in million US$, and ratios)/10															
Inward FDI	83	2,871	3,316	n.a.	526	1,262	594	3,897	6,253	0	0	2	n.a.	0	26
Outward FDI	1,738	5,006	6,470	1,847	n.a.	5,307	3,322	6,105	7,467	277	378	499	58	330	222
Inward/outward	.04	.57	.51	n.a.	n.a.	.19	.18	.64	.84	-	-	0.00	n.a.	-	.11

Sources:

Location advantages: various issues of UNESCO Statistical Yearbook (UNESCO, Paris); European Commission, Panorama of EU Industry (Brussels, The European Commission); FIDIC (the international association of engineering consulting), unpublished data; FEE (Federation of European Accountants), unpublished data; U.S. Dept. of Commerce, Statistical Abstracts of the US 1996 (US Bureau of the Census, Washington D.C., 1996); U.S. Bureau of Labour Statistics, Monthly Labour Review (US Bureau of Labour Statistics, Washington D.C.); UK Central Statistical Office, Employment Gazette (Harrington Kilbride, London); OECD, Labour Force Statistics 1974-1994 (OECD, Paris, 1996). US Bureau of Commerce, Survey of Current Business (Washington D.C.).

Ownership advantages: as for figure 2.

FDI: various issues of US Department of Commerce, Inward FDI in the US and US Direct Investment Abroad (Washington D.C.: Government Printing Office)

Notes to table 1:

1/ Calculated as follows:

$$RLAqe = \frac{\text{Number of graduates in field i in country j / total number of graduates in country j}}{\text{Number of graduates in field i in all countries / total number of graduates in all countries}}$$

Where: RLA - Relative Location Advantages. RLA can get any value between 0 and infinity. When 0<RLA<1 the country is comparatively disadvantaged in terms of qualified employees. When RLA>1 the country is comparatively advantaged. qe - abundance of qualified employees. i - fields of study: Advertising: graduates in mass communication and fine and applied arts. Management consulting: graduates in commercial and business administration. Engineering consulting: graduates in engineering. Law: graduates in law. j - countries (the countries which are the centres of economic activity in professional service industries).

2/ Calculated as follows:

$$RLAms = \frac{\text{Number of employees in industry i in country j / total service employment in country j}}{\text{Number of employees in industry i in all countries / total service employment in all countries}}$$

Where: RLA - Relative Location Advantages (specification as in 1 above). ms - market size. i - industries (the professional service industries included in the study). j - countries (the countries which are the centres of economic activity in professional service industries and for which data are available)

/3 The smaller the ratio (i.e. exports exceeds imports), the more locationally advantageous is the US. 1980 data from 1985.
/4 US firms possess strong ownership advantages in a particular industry when their average is larger than the average for the whole sample, i.e. the ratio is larger than 1.
/5 Performance is measured by revenues, except for law for which such data are not available and number of partners is used.
/6 Growth rates are calculated as the average annual increase of revenues (number of partners in law). 1990 cells present growth data for 1980-1990. 1995 cells present growth data for 1990-1995.
/7 Multinationality is measured by the share of revenues outside the US in total revenues in advertising, management consulting and engineering consulting. Due to lack of such data, in accounting multinationality is measured by number of countries in which a firm has member firms and in law by number of foreign offices.
/8 as of 1983, the earliest date for which such data are available.
/9 as of 1988, the earliest date for which such data are available.
/10 Flows were judged more adequate than stocks in the case of professional services to measure the FDI activity, as they provide a better measure of the magnitude of business activity.

Table 2. FDI, the advantages of firms and countries, and the competitiveness of firms (*)

	coefficient	std error	t stat	p-value
A model without FDI (**)				
Location advantages (import/export)	0.1230	0.1199	1.03	0.324
Ownership advantages (growth)	0.6289	0.1241	5.07	0.000
Adj. R-Square	0.5092			
p-value	0.000			
A model with FDI				
Location advantages (import/export)	Not significant (***)			
Ownership advantages (growth)	0.5505	0.1336	4.12	0.001
Inward FDI	-0.0001	0.0000	-1.49	0.161
Outward FDI	0.0001	0.0000	1.78	0.100
Adj. R-Square	0.5058			
p-value	0.000			
N (in both models)	57			

(*) Missing values were estimated from available observations, in the following way: a. Principal component factor analysis on the variables for which complete data sets are available. Generation of orthogonal factor scores. b. Regression analysis of the variables with missing data against the factor scores based on the complete variables. c. Estimation of missing data on the basis of factor scores and regression-based coefficients. The adjusted R^2 values in the regressions were .50 or more in all cases.

(**) Both models yielded better fit without an intercept.

(***) The exclusion of this variable improved the overall fit of the model.

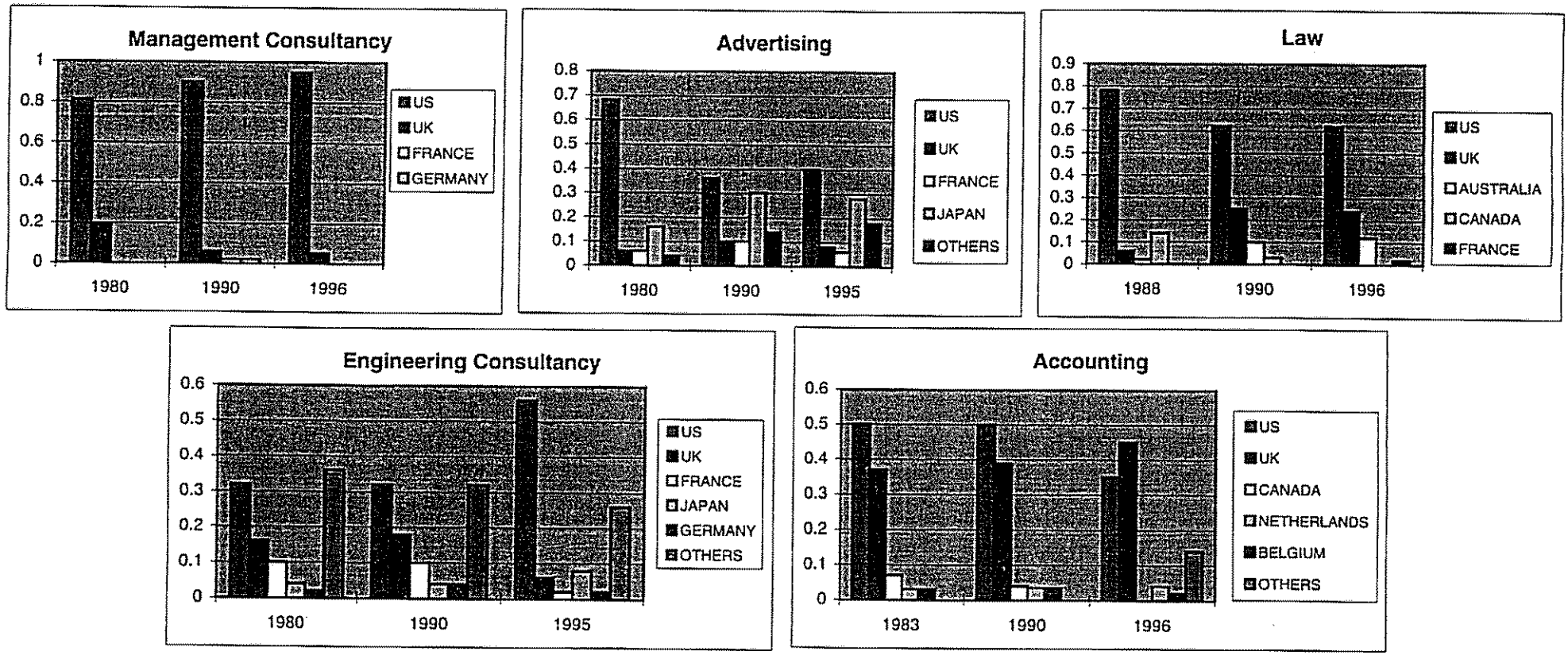
Figure 1. FDI, the advantages of firms and countries, and the international competitiveness of firms

Location advantages of home countries

	DECLINE	SUSTAINED
Ownership advantages of national firms: SUSTAINED	National firms maintain their strength via investment abroad. The firms are likely to share their dominance in the global industry with firms of other nationalities, because their sources of advantages are no longer exclusive.	National firms are strong enough to create barriers to entry and prevent foreign firms from getting access to the conditions that gave rise to their initial strength. The dominance of firms in the industry is maintained.
Ownership advantages of national firms: DECLINE	National firms remain focused domestically and lose their relative strength and their lead in an industry.	Foreign firms get access to similar advantages via investment in the locationally advantageous country, and weaken the relative strength of national firms.

FIGURE 2. THE NATIONAL DISTRIBUTION OF THE LEADING TNCs IN SELECTED PROFESSIONAL SERVICE INDUSTRIES, 1980-1996

(Share of a country's TNCs in the top group of TNCs globally in an industry)



Sources: various issues of Advertising Age, Consultants News, Engineering News Record (ENR), International Financial Law Review, International Accounting Bulletin.

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