

The geographical sources of the competitiveness of firms: some results of a new survey

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This article presents some results of a new field survey, designed to assess the extent to which the executives of some of the largest industrial corporations in the world perceived how they had augmented their global competitive advantages as a result of their foreign direct investments. Among other interesting findings, the survey revealed that the more transnational a firm was, the more it derived its competitive advantages from its foreign affiliates; while, over the last decade or so, an increasing proportion of these competitive advantages were obtained from this source.

1. Introduction

This article presents some of the results of a new field survey of the geographical sources of firm-specific competitiveness as perceived by executives of 144 of the world's 500 largest industrial firms,¹ all of which are transnational corporations (TNCs). In 1993, the sample firms were responsible for 39 per cent of the global sales and nearly two fifths of the foreign direct investment (FDI) of the largest 500 industrial corporations. For some industries (e.g. motor vehicles, petroleum refining, tobacco, electronics and computers) and for some countries (e.g. Japan, Sweden and the United Kingdom), the coverage of the survey is particularly good; for others, it is less so; but given the country and industry groups used here, it is entirely acceptable. Full details of the sample and the way in which the survey was organized and carried out are presented in the appendix.

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¹ As identified by *Fortune* magazine, 25 July 1994.

The purpose of the field survey, conducted in the second half of 1994, was to obtain the opinions of senior business executives² on the geographical origin of the kind of firm-specific competitive advantages or core competencies—sometimes called ownership-specific advantages of firms—identified by the literature.³ There has been much debate in recent years over whether or not the competitive advantages of firms—some of which may be internalized by the firms themselves—stem from the location-bound characteristics of their home countries, or whether or not, as FDI and strategic alliances have become aimed increasingly at acquiring created assets⁴ and as firms have become more transnational,⁵ firms' competitive advantages—particularly knowledge of one kind or another—are being sourced increasingly from outside their home countries. In other words, to put it in Michael Porter's terminology, whether or not firms source from "multiple home bases" (Porter, 1997).

The concept of the "double" diamond of competitive advantage, as developed by Alan Rugman and his colleagues over the past few years,⁶ is used here as the analytical basis. Essentially, the Rugman approach extends the concept of Porter's "single" diamond of competitive advantage (first set out in Porter, 1990) that argues that a firm's competitive advantages are essentially a function of the domestic economic environment in which it operates. Rugman and others, including the present author Dunning (1993b), have argued that the deepening structural integration of the world economy and the burgeoning of alliance capitalism (Dunning, 1995) are widening the geographical scope for creating or augmenting firm-specific competencies and learning experiences. Any attempt to identify the geographical sources of such advantages must embrace the diamonds of other countries, particu-

² Mainly Vice-Presidents or Directors of Foreign Operations.

³ For a summary of the competitive advantages identified by economists, see, for example, Dunning (1993a, chap. 4), and for those identified by business strategists, see, for example, Porter (1990) and Peteraf (1993). For recent analyses of knowledge sourcing by TNCs outside their national boundaries, see Almeida (1996), Kuemmerle (1995 and 1996) and Pearce and Singh (1991 and 1992).

⁴ The aim of strategic asset-acquiring FDI is to gain access to assets that protect or augment the acquiring firm's competitive advantages and/or lessen those of its rivals. In the language of the eclectic paradigm, firms engage in FDI not to exploit existing ownership (O) advantages, but to gain new advantages, which, when deployed with their existing O advantages, help sustain or further their global competitive competencies.

⁵ As documented, for example, in various *World Investment Reports* (UNCTAD-DTCI, 1995 and 1996). The most recent United States data (Mataloni, 1995) show that the foreign affiliate sales of non-bank United States parent firms were 45 per cent of their parent sales in 1993. This figure compares with a corresponding 1983 figure of 37 per cent.

⁶ See the special issue of *Management International Review* edited by Alan Rugman (1993), and Rugman, Van den Broeck and Verbeke (1995).

larly those with which the home-country firms have the most dealings by way of trade, FDI and non-equity cooperative ventures.

This field study aims at offering some new evidence to that recorded by a number of country case-studies⁷ which, in the main, have confirmed the Rugman/Dunning hypothesis. The uniqueness of the present contribution is sixfold:

- The information is obtained directly from firms.
- The competitive advantages identified in the literature are classified into groups using as the framework the four components of Porter's diamond.
- Its findings are related to a number of critical firm-specific variables, viz. size of firm, degree of transnationality, country (or region) of origin and industry.
- Those foreign countries that provide the principal access to non-domestic competitive advantages that complement those offered by the home country are identified.
- The sample firms are ranked by the significance of the three main modes of foreign involvement used by these firms in acquiring competitive advantages from a foreign location.
- The perceptions of the sample firms about the positive or negative influences of different components of home-government policy on their global competitiveness are set out.

To keep this article within manageable dimensions, a threefold classification of industries is adopted, based upon their degree of research and development (R & D) intensity in the United States in 1992. Thus, high-technology (HT) industries are defined as those in which the average R & D expenditure as a percentage of sales was at least 4 per cent, and in which scientists and engineers employed in R & D as a percentage of total employment were 2 per cent or more.⁸ Medium-technology (MT) industries are

⁷ Including Australia, Canada, Denmark, Republic of Korea, Mexico and New Zealand. See Rugman (1993).

⁸ More specifically, HT industries include pharmaceuticals; MT sectors include industrial equipment, motor vehicles, petroleum refining, soap and cosmetics; and LT sectors include beverages, building materials, food, metal products, paper, publishing and printing, rubber and plastics, textiles and tobacco.

defined as those in which the corresponding ratios vary between 2 per cent and 3.9 per cent, and 1 per cent and 1.9 per cent, respectively; and low-technology (LT) industries are defined as those that embrace those ratios under 2 per cent and under 1 per cent, respectively. As to home country or region of origin, five main groups, grouped according to their size and economic profiles, are considered here. These are, respectively, "larger" European countries,⁹ "smaller" European countries,¹⁰ the United States, Japan, developing economies,¹¹ and other countries.¹²

The firms in the sample are also grouped by their degrees of transnationality. This was obtained by averaging out (for each firm) the percentages of their global assets and global employment¹³ accounted for by their foreign affiliates,¹⁴ and then classifying firms into four groups on the basis of the degree of transnationality, viz. under 15 per cent (low), 15-29 per cent (medium-low), 30-59 per cent (medium-high) and 60 per cent and over (high).

Finally, although all of the sample firms were large companies, their global sales in 1993 varied from US\$ 0.22 billion to US\$ 138.2 billion. For the purposes of the analysis, firms were categorized into four groups according to size; medium-size (M) firms, defined as those with sales of under US\$ 5 billion in 1993; large (L) firms, with sales between US\$ 5 billion and US\$ 24.9 billion in that year; very large (VL) firms, with sales between US\$ 25 billion and US\$ 49 billion; and mega (Mg) firms, with US\$ 50 billion and over in sales.

In future research, an econometric analysis of the relationship between these four contextual variables and the competitive advantages of firms will be undertaken, since, with few exceptions, data exist for each of the 144 firms. For now however, the analysis is confined to identifying and exploring a number of possible bi-variant (and occasionally tri-variant) relation-

⁹ These include France, Germany, Italy, Spain and the United Kingdom. Two United Kingdom/Netherlands-based TNCs are also included as originating from this group of countries.

¹⁰ These include Belgium, Denmark, Finland, the Netherlands, Sweden and Switzerland.

¹¹ These include Brazil, Chile, Hong Kong, the Republic of Korea, Mexico and Taiwan Province of China.

¹² These include Canada, Australia and New Zealand.

¹³ Or one of these when data on either employment or assets were not available. Additionally, for some firms, sales data from *Worldscope/Disclosure* were used.

¹⁴ As defined by the TNCs themselves.

ships between the sources of competitiveness and firm- and/or country-specific characteristics, which—at the very least—may help point the way to more rigorous statistical evaluation.

2. The sample firms: some details

Tables 1 to 3 set out some details about the characteristics of the sample firms. In general, they mirror the existing knowledge about the industrial and geographical composition of TNCs, as well as the size and degree of transnationality as it has been set out in various publications, for example, *World Investment Reports 1991-1996* (UNCTC, 1991 and 1992; UNCTAD-DCI, 1993, 1994, 1995, 1996) and *World Investment Directory* (4 vols.,

Table 1. The industrial distribution and extent of transnationality of the sample firms, 1993

(Billions of dollars and percentage)

Industry	Number of firms	Sales (Billions of dollars)	Sales (Percentage)	Extent of transnationality ^a (Percentage)		
				Assets	Employment	R & D
High technology (HT), of which:	53	892.0	36.0	38.2	39.8	22.7
Aerospace	5	73.1	2.9	6.5	6.2	2.0
Chemicals and pharmaceuticals	19	215.9	8.7	51.3	54.2	26.6
Computers	9	213.9	8.6	28.9	28.7	9.6
Electronics	20	389.1	15.7	38.8	39.2	27.5
Medium technology (MT), of which:	34	1 152.2	46.5	39.6	39.4	15.4
Industrial equipment	8	73.8	3.0	28.0	39.1	12.7
Motor vehicles	12	580.0	23.4	32.2	35.5	7.5
Petroleum refining	14	498.4	20.1	49.7	42.9	24.3
Low technology (LT), of which:	57	434.5	17.5	41.7	45.5	28.5
Food, drink and tobacco	20	244.3	9.9	50.4	58.1	32.5
Paper	10	39.0	1.6	22.4	20.9	8.1
Building materials	5	16.4	0.7	49.6	46.4	39.7
Metals and metal products	14	107.3	4.3	35.0	38.0	24.6
Other industries	8	27.6	1.1	53.5	59.6	45.6
Total	144	2 478.7	100.0	40.0	41.8	23.3

Source: Author's estimates, based on the survey of sample firms.

^a Measured as the percentage share of total assets, employment and R & D of the respondent firms accounted for by their foreign affiliates.

Table 2. The distribution of the sample firms, by region or country of origin and extent of transnationality, 1993

(Billions of dollars and percentage)

Region/country	Number of firms	Sales (Billions of dollars)	Sales (Percentage)	Extent of transnationality (Percentage)		
				Assets	Employment	R & D
"Large" European countries, of which:	44	922.8	77.2	49.1	49.9	32.0
Germany	13	359.5	14.5	39.7	46.0	23.1
United Kingdom and United Kingdom/Netherlands	23	400.3	16.1	57.3	57.9	38.6
Other countries	8	163.0	6.6	28.8	32.1	27.8
"Small" European countries, of which:	21	164.5	6.6	55.2	56.8	32.7
Sweden	7	32.0	1.3	70.0	70.3	53.0
Switzerland	5	68.9	2.8	58.0	61.8	33.2
Other countries	9	63.6	2.6	46.1	43.6	19.7
United States	31	710.2	28.6	36.1	34.5	14.7
Japan	26	606.3	24.5	19.5	28.7	6.0
Developing countries	14	42.5	1.7	27.2	25.4	15.6
Other countries	8	32.4	1.3	30.5	30.6	18.3
Total	144	2 478.8	100.0	40.0	41.8	23.3

Source: Author's estimates, based on the survey of sample firms.

UNCTAD-DTCI, 1992-1994). For the most part, too, the data set out in the tables are self-explanatory. However, three points should be highlighted:

- Although 82 per cent of the sales of the sample firms were within the high- or medium-technology industries, the degree of technological intensity did not appear to affect significantly the extent of their transnationality. There were, indeed, as wide differences among industries within the three broad technological intensity groupings identified in table 1 (compare, for example, aerospace with chemicals) as between these groupings.
- The extent to which TNCs undertake R & D activities outside their home countries is, on average, about one half of the share of their foreign assets and employment in their respective totals, although this

Table 3. The distribution of the sample firms, by size and extent of transnationality, 1993

(Billions of dollars and percentage)

Size by value of sales	Number of firms	Sales (Billions of dollars)	Sales (Percentage)	Extent of transnationality (Percentage)		
				Assets	Employment	R & D
Medium (< 5 billion dollars)	56	141.6	5.7	40.6	39.7	20.1
Large (5-24.9 billion dollars)	58	706.2	28.5	37.3	41.1	26.5
Very Large (25-49.9 billion dollars)	16	561.5	22.6	46.1	45.0	29.0
Mega (> 50 billion dollars)	14	1 069.4	43.1	42.3	49.5	12.8
Total	144	2 478.8	100.0	40.0	41.8	23.3

Source: Author's estimates, based on the survey of sample firms.

does vary between groupings (table 1). Table 2, however, shows that the R & D transnationality ratio ranges from 6 per cent in the case of Japanese TNCs to 53 per cent in the case of Sweden-based TNCs.

- Table 3 shows that the size of a firm does not appear to be a significant influence on the degree of transnationality.¹⁵ Somewhat surprisingly, however, the mega-firms—although the most transnational in terms of their sales and assets—were the least transnational in terms of their R & D expenditures.

3. The geographical sources of competitiveness

Tables 4 to 7 present the evaluation of the respondents of the sample firms of the extent to which they believe they currently derive a number of identified specific competitive advantages as a direct result of their FDI and/or strategic alliances with foreign firms. The respondents were asked to use a scale of 1 to 7 in their evaluations, with a rank of 1 indicating that their

¹⁵ However, it should be remembered that all the firms in this sample are large, compared with the great majority of the 38,000 parent firms identified by UNCTAD in the *World Investment Reports 1995 and 1996*.

competitive advantages were *entirely* derived from the resources, capabilities, markets and inter-firm rivalries specific to their home countries. (Conversely, a rank of 7 would indicate that such advantages were derived entirely from the location-specific attributes of foreign countries.) A rank of 4 would suggest that, in the respondent's opinion, the origin of the competitive advantages stemmed equally from the home country and foreign locations.¹⁶

(a) *Sector-specific differences*

Table 4 considers four groups of competitive advantages that correspond broadly to Porter's fourfold diamond of a country's competitive advantage.¹⁷ Three of these four groups have been subdivided further into a number of more specific advantages, identified by other scholars. In table 4 the sample firms are also classified into high, medium- and low-intensity groupings. Economic theory would suggest that firms should seek to acquire competitive assets from those locations that provide these assets at the lowest cost and with the greatest security.

Essentially, the Porter hypothesis is that, independently of their size, industry, country of origin and degree of transnationality, firms will create, or obtain, their competitive advantages (e.g. innovatory capacity) in, or from, their home countries. The contrasting hypothesis, set out by Rugman, Dunning and other scholars researching into the behaviour of TNCs, is that, as firms become more transnational and globally integrate as regards their value-added activities, they are likely to derive an increasing proportion of their competencies from outside national boundaries. And, indeed, firms may deliberately seek out foreign assets that they perceive to augment, or be complementary to, these competencies.

The data in table 4 reveal a mixed picture, although, taken as a whole, they do suggest that the sample firms derive an important part of their competitive advantages—on average between 40 per cent and 50 per cent¹⁸—from their presence in foreign countries, either by way of FDI or strategic

¹⁶ The comparison in this exercise is between advantages thought to emanate from the portfolio of assets located in the home country and that in all other countries.

¹⁷ Viz. factor conditions, demand conditions, firm strategy, structure and rivalry, and related and supporting industries (Porter, 1990).

¹⁸ Each ranking is being expressed as a percentage of 7 (a ranking that would suggest that all firms' advantages are derived from outside the national boundaries).

Table 4. The sourcing of competitive advantages, classified by the technological intensity of the sample firms, 1993

(Mean value)

	All	High technology	Medium technology	Low technology
Group 1	3.54	3.46	3.48	3.65
Access to resources and assets	(1.39)	(1.20)	(1.03)	(1.71)
(i) Natural resources	4.24 (1.70)	3.67 (1.36)	4.44 (1.67)	4.62 (1.88)
(ii) Unskilled labour	3.98 (1.70)	4.10 (1.55)	3.79 (1.65)	3.99 (1.89)
(iii) Skilled and professional labour	2.98 (1.27)	2.98 (1.06)	2.76 (1.17)	3.12 (1.50)
(iv) Innovatory capacity	2.88 (1.40)	2.75 (1.16)	2.71 (1.17)	3.11 (1.70)
(v) Organizational capacity	3.12 (1.32)	3.21 (1.13)	2.88 (1.04)	3.18 (1.61)
(vi) Managerial expertise	3.24 (1.42)	3.19 (1.32)	3.12 (1.37)	3.38 (1.56)
(vii) Relational skills	3.75 (1.62)	4.00 (1.64)	3.41 (1.33)	3.71 (1.73)
Group 2	3.94	4.06	3.37	4.15
Consumer demand	(1.59)	(1.36)	(1.50)	(1.81)
(i) Upgrading of product quality	3.31 (1.37)	3.40 (1.36)	2.94 (1.14)	3.44 (1.49)
(ii) Making for more product innovation	3.44 (1.45)	3.40 (1.26)	3.06 (1.50)	3.71 (1.55)
Group 3	4.60	4.68	4.56	4.55
Inter-firm competition/rivalry	(1.67)	(1.61)	(1.65)	(1.75)
Group 4	4.10	4.19	3.68	4.29
Linkages with foreign or domestic firms and institutions	(1.37)	(1.32)	(1.12)	(1.52)
(i) Related firms (agglomerative economies)				
(ii) Universities and other research institutions	3.29 (1.30)	3.27 (1.25)	3.21 (1.17)	3.38 (1.43)

Source: Author's estimates, based on the survey of sample firms.

NOTE: Unless otherwise indicated, in this and all subsequent tables the figures reported are mean responses with standard deviations in parentheses.

alliances. The access provided by a foreign location (compared with a domestic location) to natural resources (including unskilled labour), linkages with suppliers, industrial competitors and other foreign producers, and the

benefits of larger markets and more stringent consumer demands, were all ranked particularly high (3.44 or above). By contrast, and in line with received theory and empirical evidence on innovatory activity, the sample firms perceived that their domestic operations and/or the indigenous resources and capabilities of their home countries continued to provide the main source of competitiveness—especially in terms of technological capacity and skilled professional manpower.

Predictably, there were some differences in the perceptions of firms depending on the technological intensity of their main activities. Most noticeably, LT firms claimed to obtain a higher proportion of their created assets (group 1 [iii-vii]) from foreign sources than did MT or HT firms, particularly so in the case of innovatory capacity. *Inter alia*, this finding tends to support the proposition that at least the part of the competitive advantages of firms that is obtained from foreign sources is likely to be different from (and complementary to) the part that is obtained from domestic sources. Nevertheless, the evidence suggests strongly that, for each of the advantages identified, a multiple (or at least a dual) location of value-added activities was perceived to yield positive gains.¹⁹ Thus, it seems reasonable to conclude that, in the opinion of the leading industrial companies, FDI and/or cross-border strategic alliances *do* provide access to significant competitive advantages.²⁰

(b) Country-specific differences

Table 5 reclassifies the data set out in table 4 by the source region or country of the sample firms. The data reveal few significant differences in the perceptions of the sample firms. As might be reasonably predicted, firms from high-wage economies, e.g. the United States and smaller European countries,²¹ ranked the foreign sourcing of unskilled labour relatively higher than firms from low-wage economies, particularly developing countries. Likewise, and consistent with the principle of comparative advantage, was the above-average reliance of Japanese firms on foreign natural resources, and the below-average reliance of other developed-country firms on such

¹⁹ A future article will attempt to relate the performances of the sample firms to the sources of their competencies.

²⁰ Of course, it is recognized that these data do not, in themselves, indicate whether the overall competitive position of the respondent firms would have been better or worse, if the FDI had *not* taken place, or the strategic alliances had *not* been formed.

²¹ Notably Sweden and Switzerland.

Table 5. The sourcing of competitive advantages, classified by region or country of origin of the sample firms, 1993

(Mean value)

	All	"Large" European countries	"Small" European countries	United States	Japan	Other developed countries	Developing countries
Group 1	3.54	3.80	3.90	3.61	3.21	2.63	3.21
Access to resources and assets	(1.39)	(1.25)	(1.41)	(1.43)	(1.35)	(1.30)	(1.63)
(i) Natural resources	4.24 (1.70)	4.26 (1.58)	3.65 (1.81)	4.03 (1.61)	4.87 (1.63)	3.29 (2.14)	4.86 (1.66)
(ii) Unskilled labour	3.98 (1.70)	3.81 (1.63)	4.10 (1.77)	4.37 (1.50)	3.75 (1.80)	4.00 (1.91)	3.92 (2.10)
(iii) Skilled and professional labour	2.98 (1.27)	3.18 (1.22)	3.30 (1.45)	3.27 (1.15)	2.46 (1.26)	3.00 (1.26)	2.21 (1.01)
(iv) Innovatory capacity	2.88 (1.40)	2.95 (1.31)	3.38 (1.56)	2.94 (1.39)	2.23 (1.34)	3.29 (1.25)	2.79 (1.37)
(v) Organizational capacity	3.12 (1.32)	3.30 (1.37)	3.43 (1.12)	3.35 (1.05)	2.85 (1.54)	2.43 (1.27)	2.43 (1.28)
(vi) Managerial expertise	3.24 (1.42)	3.30 (1.49)	3.86 (1.39)	3.29 (1.10)	3.12 (1.70)	3.14 (0.90)	2.36 (1.22)
(vii) Relational skills	3.75 (1.62)	3.98 (1.56)	4.43 (1.69)	3.90 (1.35)	3.46 (1.70)	3.29 (1.70)	2.43 (1.28)
Group 2	3.94	4.39	4.22	3.78	2.96	5.20	3.83
Consumer demand	(1.59)	(1.64)	(1.73)	(1.53)	(1.19)	(1.10)	(1.40)
(i) Upgrading of product quality	3.31 (1.37)	3.65 (1.46)	3.67 (1.53)	3.20 (1.16)	2.36 (1.04)	4.29 (0.95)	3.14 (1.17)
(ii) Making for more product innovation	3.44 (1.45)	3.58 (1.48)	3.90 (1.30)	3.33 (1.37)	2.76 (1.48)	4.14 (1.07)	3.43 (1.50)
Group 3	4.60	5.43	5.38	4.23	3.23	4.29	4.36
Inter-firm competition/rivalry	(1.67)	(1.34)	(1.72)	(1.23)	(1.45)	(0.49)	(2.17)
Group 4	4.10	4.41	4.95	3.84	3.65	3.86	3.43
Linkages with foreign or domestic firms and institutions	(1.37)	(1.39)	(1.36)	(1.07)	(1.29)	(1.46)	(1.40)
(i) Related firms (agglomerative economies)							
(ii) Universities and other research institutions	3.29 (1.30)	3.40 (1.14)	3.52 (1.29)	3.32 (1.40)	3.17 (1.46)	2.83 (1.47)	3.00 (1.30)

Source: Author's estimates, based on the survey of sample firms.

resources (in the survey, these firms were all based in resource-rich countries).²² Relative to Japanese firms, too, European and United States firms appeared to value the access to foreign-based created assets, e.g.

²² Viz. Australia, Canada and New Zealand.

organizational capacity, management, expertise and relational skills, more highly than firms in other developed countries, although, in general, the competitive advantages of Japanese firms were perceived to be more home-specific than those of their major competitors. (This also reflects their lower degree of transnationality (see sect. 3c).)

In respect of each of the other three components of Porter's diamond, European-owned firms appeared to rely more on foreign (than on domestic), sources of competitiveness compared with their United States and Japanese counterparts. This was especially the case with respect to inter-firm competition and, for firms from smaller European countries, with respect to linkages with related firms.

Notwithstanding the below-average significance attached by the sample firms to the acquisition of, or access to, foreign-created assets, the rankings—even for TNCs from large and advanced economies, such as Germany and the United States, which record a comparative patenting advantage in high-technology products (Cantwell and Hodson, 1991)—suggest that large TNCs in the high and medium-technology industries are increasingly seeking a technology-related presence²³ in each of the main Triad countries or regions (e.g. United States firms in the European Union (EU) and Japan; Japanese firms in EU and the United States, and EU firms in Japan and the United States).

(c) *Degree of transnationality*

Perhaps the most popular hypothesis about the propensity of TNCs to derive competitive advantages from their foreign operations is that the competitive advantages will be positively related with the extent and depth of a firm's foreign operations, relative to domestic operations. In this section, two exercises are attempted. The first exercise is to group the data presented earlier on the basis of the four bands of transnationality set out in the introduction. The second exercise is to relate the extent of the two measures of transnationality identified earlier—viz. the average of the percentage of global assets and employment outside the home country and the average

²³ By this is meant either the pursuance of R & D-related activities by the foreign affiliates and/or strategic alliances with foreign firms, or the monitoring of the innovatory activities of foreign firms.

Table 6. The sourcing of competitive advantages, classified by extent of transnationality^a of the sample firms, 1993

(Mean value)

	All	Low	Medium Low	Medium High	High
Group 1	3.54	2.33	2.83	3.76	4.50
Access to resources and assets	(1.39)	(1.28)	(1.13)	(1.00)	(1.31)
(i) Natural resources	4.24	3.82	3.90	4.21	4.62
	(1.70)	(2.01)	(1.84)	(1.34)	(1.84)
(ii) Unskilled labour	3.98	2.26	3.57	4.38	4.52
	(1.70)	(1.58)	(1.80)	(1.44)	(1.60)
(iii) Skilled and professional labour	2.98	2.06	2.48	3.33	3.48
	(1.27)	(1.18)	(0.90)	(1.19)	(1.20)
(iv) Innovatory capacity	2.88	2.82	2.67	2.80	3.43
	(1.40)	(1.81)	(1.20)	(1.32)	(1.22)
(v) Organizational capacity	3.12	1.94	2.88	3.37	3.57
	(1.32)	(1.25)	(1.26)	(1.09)	(1.19)
(vi) Managerial expertise	3.24	2.35	2.71	3.55	3.73
	(1.42)	(1.27)	(1.30)	(1.29)	(1.28)
(vii) Relational skills	3.75	2.35	3.21	4.13	4.43
	(1.62)	(1.84)	(1.38)	(1.29)	(1.48)
Group 2	3.94	3.27	3.32	3.98	4.96
Consumer demand	(1.59)	(1.98)	(1.39)	(1.43)	(1.49)
(i) Upgrading of product quality	3.31	3.00	2.79	3.34	4.18
	(1.37)	(1.80)	(1.28)	(1.11)	(1.33)
(ii) Making for more product innovation	3.44	2.94	3.17	3.49	4.04
	(1.45)	(1.48)	(1.46)	(1.36)	(1.32)
Group 3	4.60	4.29	4.08	4.68	5.37
Inter-firm competition/rivalry	(1.67)	(1.79)	(1.67)	(1.56)	(1.43)
Group 4	4.10	3.06	3.50	4.27	4.87
Linkages with foreign or domestic firms and institutions	(1.37)	(1.48)	(1.25)	(1.25)	(1.14)
(i) Related firms (agglomerative economies)					
(ii) Universities and other research institutions	3.29	2.12	2.87	3.54	3.90
	(1.30)	(0.93)	(1.55)	(1.15)	(1.11)

Source: Author's estimates, based on the survey of sample firms.

^a For a more precise definition of the extent of transnationality, see the introduction.

percentage of global R & D expenditures undertaken outside the home country—to the values placed on Porter's four facets of competitive advantages (groups 1 to 4), in a series of bi-variate relationships.

Table 7. Bi-variate correlation coefficients between perceived competitive advantages derived from foreign activities and the extent of transnationality of the sample firms, 1993

(Correlation coefficients)

	A	B
Natural assets (group 1 [i-ii])	0.31982	0.18998
Created assets (technological) (group 1 [iii-v])	0.36478	0.37895
Created assets (managerial) (group 1 [vi-viii])	0.43228	0.39619
Consumer demand (group 2)	0.36339	0.35007
Inter-firm rivalry (group 3)	0.27146	0.28016
Linkages with related firms (group 4 [i])	0.46452	0.39511

Source: Author's estimates, based on the survey of sample firms.

NOTE: A = Extent of transnationality = average foreign employment and assets.

B = Extent of transnationality = average foreign R & D.

Table 6 shows quite clearly that a greater degree of transnationality of firms is likely to be associated with the perception that an increasing proportion of global competitive advantages is derived from foreign sources. This is the most striking finding presented here. It would also appear that, for created assets (group 1 [iii-vii]), the biggest rise in the significance of foreign operations for global competitiveness occurs when the average degree of transnationality (in terms of assets and employment) is 30 per cent or above. However, for innovatory capacity, it is only when the degree of transnationality exceeds 60 per cent that the (average) ranking exceeds 3.00; while, as far as the influence of consumer demand and inter-firm rivalry is concerned, it exceeds 5.00. The distinction between the sources of competitive advantages perceived to be derived from the foreign activities of firms, or from cross-border strategic alliances is particularly noticeable in the case of firms with low and high degrees of transnationality.

Table 7 shows some bi-variate correlation coefficients between the two measures of transnationality (mentioned above) and six indices of competitive advantage. It suggests that, for the main measure of transnationality (A in table 7), the coefficients are positive and significant at the 99 per cent level or above, and that the most likely benefits of increased transnationality are likely to arise from access to foreign organizational capacity and managerial expertise, or linkages forged with foreign firms.

The results for the second measure of transnationality, the foreign R & D ratio (B in table 7), are virtually identical to the results obtained from

the first measure. Except for the correlation with natural assets (group 1 [i-ii]), all of the coefficients are positive and significant at the 99 per cent level or above. Not surprisingly, the two measures of transnationality are also significantly positively correlated with each other (0.69, $p < 0.0001$), confirming that they essentially measure aspects of the same phenomenon.²⁴

(d) *Size of firm*

The final contextual variable which, to some extent, is correlated with the degree of transnationality,²⁵ is the size of the firm. While it is not obvious why size itself should be related to the geographical sourcing of competitiveness-enhancing assets, the literature (Dunning, 1993, chap. 6) suggests that large firms are more likely to engage in FDI than small firms, and that transnationality itself may help a firm to preserve (or increase) its share of global markets.

At the same time, it might be hypothesized that medium-size firms are likely to be more specialized in their portfolio of global assets and, hence, more reliant on foreign sources to enhance or complement that portfolio. However, in recent years, the evidence suggests that very large firms are just as likely to engage in merger-and-acquisition (M & As) activities as are their smaller competitors. Finally, it might be predicted that the portfolio of foreign competitiveness-enhancing assets sought by medium-size firms,²⁶ relative to larger firms, may have more to do with gaining access to specialized resources, capabilities and markets, and/or establishing linkages with local foreign firms. (Medium-size firms are typically expected to engage in less competition with foreign-owned firms than their larger counterparts.)

The results of the table 8 survey show that the size of firms is only of marginal importance in affecting the sourcing of most categories of competitive advantage.

²⁴ Since the group 1-4 variables are not continuous, the significance levels reported here should be taken as indicators of a possible relationship (to be investigated further in a future article), rather than a form of final analysis.

²⁵ Although the Pearson correlation coefficient between size and transnationality is not significantly different from zero.

²⁶ It should be remembered that all the firms in the sample are large, relative to the universe of firms, but that some are much larger than others.

Table 8. The sourcing of competitive advantages, classified by the size of the sample firms, 1993

(Mean value)

	All	Medium (<5 billion dollars)	Large (5-24.9 billion dollars)	Very Large (25-49.9 billion dollars)	Mega (>50 billion dollars)
Group 1	3.54	3.58	3.53	3.57	3.43
Access to resources and assets	(1.39)	(1.54)	(1.44)	(1.09)	(0.94)
(i) Natural resources	4.24 (1.70)	3.96 (1.79)	4.41 (1.76)	4.20 (1.61)	4.69 (1.03)
(ii) Unskilled labour	3.98 (1.70)	4.03 (1.68)	3.89 (1.92)	4.25 (1.39)	3.86 (1.17)
(iii) Skilled and professional labour	2.98 (1.27)	2.96 (1.28)	3.06 (1.41)	2.88 (1.12)	2.86 (0.77)
(iv) Innovatory capacity	2.88 (1.40)	2.71 (1.41)	2.98 (1.49)	3.25 (1.13)	2.71 (1.20)
(v) Organizational capacity	3.12 (1.32)	3.13 (1.39)	3.22 (1.39)	3.00 (1.15)	2.79 (0.89)
(vi) Managerial expertise	3.24 (1.42)	3.45 (1.56)	3.09 (1.38)	3.19 (1.42)	3.14 (0.95)
(vii) Relational skills	3.75 (1.62)	3.82 (1.66)	3.78 (1.72)	3.50 (1.59)	3.64 (1.08)
Group 2	3.94	4.07	3.90	3.93	3.67
Consumer demand	(1.59)	(1.68)	(1.63)	(1.58)	(1.15)
(i) Upgrading of product quality	3.31 (1.37)	3.30 (1.38)	3.40 (1.46)	3.13 (1.25)	3.14 (1.17)
(ii) Making for more product innovation	3.44 (1.45)	3.57 (1.46)	3.33 (1.48)	3.53 (1.46)	3.29 (1.33)
Group 3	4.60	4.58	4.72	4.50	4.29
Inter-firm competition/rivalry	(1.67)	(1.85)	(1.60)	(1.26)	(1.68)
Group 4	4.10	4.24	4.07	4.25	3.57
Linkages with foreign or domestic firms and institutions	(1.37)	(1.36)	(1.45)	(1.29)	(1.16)
(i) Related firms (agglomerative economies)					
(ii) Universities and other research institutions	3.29 (1.30)	3.28 (1.29)	3.30 (1.41)	3.20 (1.08)	3.43 (1.16)

Source: Author's estimates, based on the survey of sample firms.

4. Which foreign countries provide the most valuable assets to upgrading competitiveness?

The next section gives some details of the foreign countries most frequently identified by the sample firms as sources of competitiveness-enhancing assets. Here, it is not possible to evaluate the relative importance of one source country *vis-à-vis* another country; rather, the kinds of competitive advantages that are likely to be most closely associated with each country are identified.

What do the received theories of trade and investment predict in this respect? The answer is that much will depend on the type of FDI undertaken (i.e. market seeking, resource seeking, efficiency seeking, or strategic-asset seeking) and on the static and dynamic competitive advantages of the home and host countries. Also, like trade, FDI and strategic alliances might be either between or within industries. In the case of the former, one might expect the FDI recipient countries to provide assets in which the home country is deficient. In the case of the latter, FDI is likely to be more of the efficiency-enhancing and strategic-asset seeking variety, in which case the foreign country will tend to provide assets similar to those in which the investing firm (or country) has a competitive edge.

In carrying out the survey, each respondent was asked to name up to three foreign countries which were hosts to the firm's foreign affiliates and which, in their perception, have had the most positive impact on their own competitiveness. Table 9 presents some evidence derived by relating each of the competitive advantages identified to the number of times a particular host country was mentioned.

The data in table 9 confirm most of the predictions made here. Thus, developing countries clearly have a competitive advantage in affording access to natural resources, while Germany and Japan provided more than the average share of technological assets, and the United States more than the average share of managerial assets and consumer-demand conditions favouring competitiveness (e.g. large markets). United States firms were also perceived to offer a more competitive stimulus than other firms. Relative to other countries, Germany, Japan and the United States were perceived as good locations for establishing linkages with other firms.

Table 9. The sourcing of competitive advantages, classified by region or country, 1993

(Number of times countries are mentioned among three most important sources of advantages)

	Europe				North America			Rest of the World		Sum
	France	Germany	United Kingdom	Other	United States	Canada	Japan	Developed countries	Developing countries	
Group 1	0.50	2.00	5.00	4.00	6.00	2.00	0.50	2.50	30.00	52.50
Access to resources										
Natural assets										
Created assets (technological)	1.33	12.33	6.67	9.00	18.00	1.33	7.33	1.67	7.67	65.33
Created assets (managerial)	1.00	4.33	6.00	3.67	10.00	2.67	3.33	1.33	6.33	38.66
Group 2	0.00	4.00	4.00	0.00	8.00	0.00	0.00	0.00	3.00	19.00
Consumer demand										
Group 3	2.00	4.00	4.00	5.00	16.00	1.00	2.00	1.00	4.00	39.00
Inter-firm rivalry										
Group 4	6.00	8.00	7.00	4.00	17.00	1.00	9.00	0.00	4.00	56.00
Linkages with related firms										
Totals	10.83	34.66	32.67	25.67	75.00	8.00	22.16	6.50	55.00	270.4
Number of firms	(139)	(131)	(125)	(116)	(113)	(138)	(118)	(142)	(130)	9

Source: Author's estimate, based on the survey of sample firms.

NOTE: The number of firms reflects the sample firms excluding firms from the host country.

One surprising finding of the survey was the frequency with which developing countries were identified as providing access to created assets and to competitive advantages (groups 3 and 4). Although mostly this result is the outcome of pooling a number of countries at different stages of development into the same group, China and Brazil were both mentioned a number of times as providing a locale for more efficient production via economies of scale.²⁷ As might be expected, the host countries named varied on the basis of both the industry of the investing TNCs and their home countries. For example, firms in HT sectors accounted for 45-57 per cent of all mentions in the high-technology countries, i.e. the United States, Germany, Japan and the United Kingdom. Taking European, United States and Japanese firms as a group, 25 per cent of the countries mentioned by the respondents as sources of competitive advantages were located elsewhere in the Triad (or, alternatively, nearly three quarters of their advantages were derived from within the Triad).

5. Modes of foreign entry most likely to advance competitive advantages

The respondents of the sample firms were asked to rank (on a scale of 1 to 7) the importance of each of three modes of acquiring and/or tapping into the resources and capabilities of foreign countries, i.e. the "foreign" diamonds of competitive advantage. The modes are FDI, non-equity cooperative agreements (e.g. strategic alliances, management contracts, licensing and franchising agreements etc.) and arm's length transactions (in both intermediate and final goods and services).

The hypothesis here is that deeper forms of cross-border structural integration, such as FDI and non-equity cooperative agreements, are more likely to result in an addition of competitive advantages to the home company (and country) than shallower forms of transactions, such as arm's length trade. It might also be predicted that firms are more likely to internalize their assets in industries that are technologically intensive than in those that are not. A related hypothesis is that non-equity cooperative ventures are likely to be ranked higher as a modality for competitive advantages in less

²⁷ The figures in table 9 somewhat understate the importance of scale economies, as the figure for group 2 indicates the overall importance of consumer demand conditions and not scale economies specifically.

Table 10. Perceptions of the importance of the mode of foreign involvement of the sample firms, by technological intensity, extent of transnationality and size, 1993

(Mean value)

	Foreign direct investment	Non-equity arrangements	Arm's length transactions
All firms	5.22 (1.63)	4.66 (1.46)	3.96 (1.45)
High technology	5.23 (1.63)	5.31 (1.08)	4.27 (1.59)
Medium technology	5.53 (1.42)	4.62 (1.41)	3.55 (1.28)
Low technology	5.02 (1.74)	4.07 (1.57)	3.92 (1.36)
Low transnationality	4.06 (2.19)	4.71 (1.69)	3.59 (1.62)
Medium-low transnationality	5.46 (1.67)	5.25 (1.07)	4.25 (1.26)
Medium-high transnationality	5.44 (1.38)	4.83 (1.28)	4.12 (1.53)
High transnationality	5.28 (1.67)	3.93 (1.65)	3.55 (1.21)
Medium size	4.83 (1.84)	4.48 (1.50)	4.00 (1.41)
Large	5.19 (1.61)	4.69 (1.31)	3.95 (1.46)
Very Large	6.07 (0.80)	5.07 (1.79)	4.13 (1.46)
Mega	5.93 (0.92)	4.79 (1.58)	3.71 (1.64)

Source: Author's estimates, based on the survey of sample firms.

technological-intensive industries than other modes of foreign entry. Because of the need to integrate their global operations, it might be expected that these firms that are the most transnationalized may be expected to rank FDI higher than firms whose foreign operations are less significant to their overall prosperity. Finally, it might be supposed that firms from countries whose domestic institutions are organized along hierarchical lines (e.g. the United States) would be more likely to rank FDI as a foreign asset-acquiring modality than firms from countries whose institutions practice more cooperative modes of governance (e.g. Japan).

Tables 10 and 11 offer evidence to assess these hypotheses. Overall, it is clearly true that deeper forms of integration were perceived to offer the most benefits as regards the acquisition of competitive advantages abroad. In table 10, the average rankings of each of the three modalities were classified according to the technological intensity of the firm. While the LT and MT firms behaved as expected, in other words, FDI was perceived to offer the most advantages, and arm's length transactions were perceived to offer the least, HT firms claimed that they derived more advantages from cooperative alliances than from FDI.

Table 11. Perceptions of the importance of the mode of foreign involvement of the sample firms, by region or country of origin, 1993

(Mean value)

	Foreign direct investment	Non-equity arrangements	Arm's length transactions
All firms	5.22 (1.63)	4.66 (1.46)	3.96 (1.45)
"Large" European countries	5.47 (1.42)	4.60 (1.45)	3.81 (1.24)
"Small" European countries	4.70 (1.95)	4.81 (1.63)	4.32 (1.34)
United States	4.97 (1.80)	4.58 (1.26)	3.29 (1.64)
Japan	5.96 (1.17)	5.36 (1.41)	4.88 (1.26)
Developing countries	4.79 (1.37)	4.29 (1.14)	4.21 (1.25)
Other countries	4.57 (2.15)	3.14 (1.57)	3.29 (1.38)

Source: Author's estimates, based on the survey of sample firms.

Also, somewhat contrary to what was expected, the medium-low and medium-high transnationalized firms actually derived more advantages from all three modalities of foreign involvement than did firms in the high-transnationalization group. Whether this is another manifestation of the law of diminishing returns, or of the differences between the first mover versus late mover experiences, remains to be seen. More in line with what was expected, the connection between internationalization and size of firm was confirmed. The figures in table 10 appear to indicate that the gains from FDI accrue predominantly to the largest firms, whereas the benefits from cooperative alliances and trade do not exhibit any obvious pattern.

Finally, table 11 sheds some light on the advantages derived from the different modalities classified by the nationality of the firm. The results here contradict the hypothesis that firms from countries with typically hierarchical organizational structures would prefer FDI over other modes of foreign entry. Japanese firms stand out not only in terms of their perceived advantages being derived from FDI, but also in terms of their perceived advantages being derived from cooperative ventures and arm's length trade. In summary, although FDI is most likely to be the preferred route by which the domestic and foreign diamonds of competitive advantages are linked, the relative significance of this route is the greatest in the case of (large) firms that have medium-to-high technology and are moderately-to-highly transnational.

Table 12. Perceptions of firms as to whether foreign sourcing of competitive advantages has become relatively more important in recent years, 1993

(Mean value)

All	1.50 (1.36)	All	1.50 (1.36)
High technology	1.69 (1.35)	Medium size	1.47 (1.32)
Medium technology	1.79 (0.95)	Large	1.31 (1.55)
Low technology	1.16 (1.51)	Very Large	1.87 (0.83)
"Large" European countries	1.64 (1.27)	Mega	2.00 (0.96)
"Small" European countries	1.90 (1.04)	Low transnationality	0.94 (1.55)
United States	1.26 (1.53)	Medium-low transnationality	1.29 (1.37)
Japan	1.62 (1.39)	Medium-high transnationality	1.62 (1.44)
Developing countries	1.43 (0.85)	High transnationality	1.96 (0.92)
Other countries	0.38 (2.00)		

Source: Author's estimates, based on the survey of sample firms.

6. The dynamics of the geographical sourcing of competitive advantage

To what extent do firms perceive that their access to foreign diamonds of competitive advantage is becoming a more important contribution to their overall competitive advantages? It might be hypothesized that, as firms increase their degrees of transnationality, they will augment increasingly—rather than exploit—their competitive advantages from their foreign operations.²⁸ In the course of the survey, firms were asked to rank, on a scale of -3 to +3, whether they perceived that their competitive advantages were becoming less or more dependent on their foreign operations (indicated by negative or positive signs).

The results presented in table 12 essentially confirm the impressions already gained from tables 10 and 11 concerning the benefits derived from internationalization. Although all the sample firms, overall, perceived that the foreign sourcing of competitive advantages has become more important

²⁸ For an interesting article that supports this contention in relation to the R & D activity of TNCs in the electronics and pharmaceuticals industries, see Kuemmerle (1996).

over time, medium- and high-technology firms had a more positive view of that importance, as did the very large and mega firms. When classified by their regions of origin, firms from small European countries were the most positive in their responses, a finding that may not only reflect their size, but also the aftermath of the wave of investment created by the perceived threat of a "fortress" Europe by 1992 for the countries outside the European Union. Not surprisingly, the firms that were the most transnationalized also perceived the influence of foreign sourcing of competitive advantages to be very important.

7. Home-country governments and competitiveness

The role of governments in affecting the competitiveness of firms is a subject which has long been of fascination to economists and other scholars (Dunning, 1997, forthcoming). In the present context, we are interested in the perceived influences of home governments on the ability and willingness of the sample firms to be competitive globally. In the questionnaire, eighteen possible ways in which governments might exert such an influence were identified. For each of these ways, firms were asked to assign a figure from a range of -3 to +3, according to whether or not, in their opinion, home governments had influenced their *global* competitiveness negatively or positively between 1988 and 1993 (0 would indicate no influence at all). Table 13 presents the findings classified by the three groups of industries used here. Table 14 does the same for firms classified on the basis of nationality and table 15 does the same for firms classified on the basis of the degree of transnationality.

Table 13 shows that, on average, the sample firms thought that actions by their home governments either had a marginally beneficial effect on their global competitiveness (e.g. the provision of infrastructure, trade, or industrial and technology policies), or a marginally adverse effect (e.g. in terms of market facilitating, social and environmental policies). There were few consistent differences between industry groupings, except that LT firms thought more favourably of most government actions (notably, trade, industrial, technology, monetary and exchange rate policies) than either HT or MT firms.

More interesting differences are revealed in table 14. While United States and European firms perceived that their home governments pursued

Table 13. Perceived influence of home governments on competitive advantages of the sample firms, by technological intensity, 1993

(Mean value)

	All	High technology	Medium technology	Low technology
1. Provision and upgrading of infrastructure	0.52 (1.00)	0.48 (1.08)	0.60 (1.00)	0.51 (0.93)
2. Social policies	-0.13 (1.44)	-0.10 (1.47)	-0.31 (1.42)	-0.05 (1.43)
3. Monetary and exchange-rate policies	-0.11 (2.16)	-0.04 (1.94)	-0.73 (2.00)	0.20 (2.40)
4. Trade policies	0.35 (1.45)	0.26 (1.40)	-0.12 (1.52)	0.70 (1.39)
5. Industrial and technology policies	0.36 (2.08)	0.35 (2.11)	0.06 (2.46)	0.54 (1.80)
6. Education and training policies	0.09 (1.25)	0.15 (1.43)	0.03 (1.29)	0.07 (1.04)
7. Environmental policies	-0.06 (1.24)	-0.34 (1.22)	0.09 (1.33)	0.13 (1.16)
8. Market-facilitating policies	-0.37 (1.99)	-0.38 (2.05)	-0.55 (2.15)	-0.25 (1.85)
9. Promoting an ethos of competitiveness	0.28 (2.91)	0.53 (3.57)	0.13 (2.72)	0.13 (2.30)
10. Promoting a culture of investment and saving	0.18 (1.91)	0.51 (2.12)	-0.09 (2.07)	0.04 (1.56)

Source: Author's estimates, based on the survey of sample firms.

macroeconomic, i.e. monetary and exchange rate and trade policies marginally favourable to their competitiveness, Japanese firms considered the same policies of their home government to work to their disadvantage. By contrast, Japanese firms believed that most macro-organizational policies of their Government (e.g. environmental, industrial and technology policies), together with the promotion of a culture of investment and saving, aided their global competitiveness, while United States respondents generally thought their Government worked to the detriment of their competitiveness in terms of these policies. Respondents of firms from countries with small and/or relatively unsophisticated domestic markets were generally more favourably disposed to the actions of their home governments than those of

Table 14. Perceived influence of home governments on competitive advantages of the sample firms, by region or country of origin, 1993

(Mean value)

	All countries	"Large" European countries	"Small" European countries	United States	Japan	Other developed countries	Developing countries
1. Provision and upgrading of infrastructure	0.52 (1.00)	0.68 (1.03)	0.81 (0.96)	-0.08 (0.85)	0.44 (0.96)	0.67 (0.67)	1.00 (0.99)
2. Social policies	-0.13 (1.44)	-0.45 (1.50)	0.38 (1.50)	-0.74 (1.37)	0.20 (1.00)	-0.13 (1.55)	0.92 (1.12)
3. Monetary and exchange-rate policies	-0.11 (2.16)	-0.21 (2.33)	0.52 (2.46)	0.29 (1.44)	-1.62 (1.77)	-0.13 (1.81)	-0.08 (2.43)
4. Trade policies	0.35 (1.45)	0.30 (1.15)	0.29 (1.95)	0.19 (1.49)	-0.19 (1.47)	1.13 (0.64)	1.54 (0.88)
5. Industrial and technology policies	0.36 (2.08)	-0.12 (1.87)	1.19 (2.40)	-0.53 (1.96)	0.72 (2.03)	0.13 (1.46)	2.08 (1.38)
6. Education and training policies	0.09 (1.25)	0.07 (1.32)	0.81 (1.47)	-0.58 (0.81)	0.12 (0.95)	0.00 (0.93)	0.62 (1.50)
7. Environmental policies	-0.06 (1.24)	-0.14 (1.32)	0.00 (1.00)	-0.55 (1.36)	0.50 (0.86)	-0.25 (1.39)	0.31 (1.18)
8. Market-facilitating policies	-0.37 (1.99)	-0.37 (2.02)	-0.14 (2.31)	-1.13 (1.87)	-0.54 (1.79)	-0.25 (1.39)	1.31 (1.38)
9. Promoting an ethos of competitiveness	0.28 (2.91)	0.21 (3.00)	0.57 (3.65)	0.10 (3.28)	0.19 (1.30)	-0.50 (2.20)	1.17 (3.41)
10. Promoting a culture of investment and saving	0.18 (1.91)	0.29 (2.00)	0.38 (1.72)	-0.77 (1.81)	0.84 (1.70)	-0.50 (1.07)	0.85 (2.19)

Source: Author's estimates, based on the survey of sample firms.

firms from other countries. Rather surprisingly, while firms from all the major investing countries believed that their governments did little to facilitate the efficient workings of markets, firms from developing countries were noticeably more appreciative in this respect.

Table 15 suggests that the degree of transnationality of firms seems to be unrelated to their perception of the competitiveness-enhancing actions by their home-country governments. Thus, while the least transnationalized firms regarded industrial and technology policies and the promotion of an investment and savings culture more favourably than did the most transna-

Table 15. Perceived influence of home governments on competitive advantages of the sample firms, by extent of transnationality, 1993

(Mean value)

	All firms	Low firms	Medium-low firms	Medium-high firms	High firms
1. Provision and upgrading of infrastructure	0.52 (1.00)	0.67 (1.12)	0.67 (0.87)	0.37 (1.03)	0.61 (0.87)
2. Social policies	-0.13 (1.44)	-0.39 (1.20)	0.10 (1.64)	-0.27 (1.39)	0.03 (1.59)
3. Monetary and exchange-rate policies	-0.11 (2.16)	-0.39 (2.35)	-0.68 (1.89)	-0.03 (2.09)	0.83 (2.19)
4. Trade policies	0.35 (1.45)	0.50 (1.62)	0.32 (1.59)	0.27 (1.41)	0.60 (1.38)
5. Industrial and technology policies	0.36 (2.08)	1.33 (1.97)	0.59 (2.17)	0.17 (1.96)	-0.13 (2.13)
6. Education and training policies	0.09 (1.25)	0.28 (1.49)	-0.09 (1.06)	0.17 (1.15)	-0.10 (1.45)
7. Environmental policies	-0.06 (1.24)	-0.06 (1.43)	0.00 (0.98)	-0.08 (1.39)	-0.07 (1.08)
8. Market-facilitating policies	-0.37 (1.99)	-0.06 (1.66)	-0.41 (1.44)	-0.53 (2.18)	-0.40 (2.03)
9. Promoting an ethos of competitiveness	0.28 (2.91)	0.24 (2.25)	0.32 (2.93)	0.33 (2.79)	0.13 (3.73)
10. Promoting a culture of investment and saving	0.18 (1.91)	0.72 (1.84)	0.23 (2.43)	-0.02 (1.59)	0.03 (2.18)

Source: Author's estimates, based on the survey of sample firms.

tionalized firms, the reverse appeared to be the case for macroeconomic and social policies. Here, however, bi-variant comparisons tend to break down. It so happens that Japanese firms are the least transnationalized, and it could be (and most likely is) that the country of the respondent firms is a more important determinant of the role of government than the degree of their transnationality. It is precisely for this and related reasons why a multi-variant approach is necessary to complement the descriptive interpretation of the data set out here.

8. Summary and some policy conclusions

The findings of the survey show that a not insignificant part of the competitive advantages of some of the world's leading industrial TNCs are derived from their foreign-based activities. It has also been revealed here that a firm's competitive advantages are dependent on the types of FDI and/or cross-border alliances in which the firm engages; the technology intensity of the industries in which the firm is involved; the country from which the firm emanates; and, particularly, the degree of the firm's transnationality. The findings of the survey also reveal that an overwhelming majority of firms from all industries and countries believed that the importance of the foreign sourcing of their competitive advantages had increased in recent years, and that FDI (followed by inter-firm cooperative agreements) is the favoured modality for acquiring these advantages.

The role of home-country governments in influencing the global competitive advantages of the sample firms is also discussed briefly. In general, that role was not perceived to be of critical significance. However, there were noticeable differences observed among firms of different nationalities, and between large developed countries (particularly the United States and Asian developing countries, especially Japan, and smaller European countries, such as Sweden) that *inter alia* reflect some very distinctive country-specific philosophies of the role of governments, hierarchies and markets.

The policy implications of the findings are straightforward. Governments need to recognize that firms engage in foreign activities both to exploit their existing competitive advantages and to protect, or augment, these advantages. There is also a strong suggestion that, as the foreign operations of firms become a more significant component of the world economy, technology, organizational skills and other tangible assets are likely to be transferred across national boundaries, not only from the investing firms to their affiliates abroad, but also from the foreign affiliates back to the investing firms. This is particularly likely to be the case for TNCs (e.g. Asea Brown Boveri, Unilever, IBM) that operate from multiple home bases. This being so, it behoves governments to pursue as liberal policies towards both inward and outward FDI as their macro-organizational strategies would allow; at the same time, governments can pursue policies that help create the kinds of domestic economic environments that enable indigenous firms to become strong contestants in the global marketplace, and the country to attract high value-added FDI into its domestic arena. ■

Appendix: Characteristics of the sample

The sample consists of a total of 144 responses from 131 firms. For those firms that provided multiple responses, the statistics on the size and degree of transnationality, as well as industry classification, follow those of the largest corporate unit. Apart from the size and degree of transnationality, all other multiple responses are treated as unique individual responses in the analyses. Of the 144 responses to the survey, 110 came from firms that are ranked in the *Fortune* 500 (based on 1993 sales). The remaining firms were contacted to improve the industrial and/or geographical representation of the data. These firms are all among the largest TNCs in their respective home countries. The identity of one firm in the sample was concealed and therefore that firm could not be classified by industry. However, values for the other variables used in the various classifications were obtained.

References

- Almeida, P. (1996). "Knowledge sourcing by foreign multinationals: pattern citation in the US semi-conductor industry", Washington, D.C.: Georgetown University (mimeo).
- Cantwell, J. and C. Hodson (1991). "Global R & D and UK competitiveness", in M. Casson, ed., *Global Research Strategy and International Competitiveness* (Oxford: Basil Blackwell), pp. 133-182.
- Dunning, J. H. (1993a). *Multinational Enterprises and the Global Economy* (Wokingham, Berkshire: Addison Wesley).
- (1993b). "Internationalizing Porter's diamond", *Management International Review*, 33, 2 (Special Edition), pp. 7-15.
- (1995). "Reappraising the eclectic paradigm in the age of alliance capitalism", *Journal of International Business Studies*, 26, 3, pp. 461-491.
- , ed. (1997). *Governments, Globalization and International Business* (Oxford: Oxford University Press) (forthcoming).
- Kuemmerle, W. (1995). "Home base and investment into research and development abroad", Boston, Mass., Harvard Business School Working Paper No. 2685.
- (1996). "The drivers of foreign direct investment into research and development: An empirical investigation", Boston, Mass., Harvard Business School Working Paper No. 96:062.
- Mataloni, R. (1995). "U.S. multinational companies: Operations in 1993", *Survey of Current Business*, 6 (June), pp. 31-51.
- Pearce, R. D. and S. Singh (1991). "The overseas laboratory", in M. Casson, ed., *Global Research Strategy and International Competitiveness* (Oxford: Basil Blackwell), pp. 183-212.
-

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- _____ (1992). *Globalizing Research and Development* (London: Macmillan).
- Peteraf, M. (1993). "The cornerstones of competitive advantage: a resource based view", *Strategic Management Journal*, 14, pp. 179-191.
- Porter, M. E. (1990). *The Competitive Advantage of Nations* (New York: The Free Press).
- _____ (1997). "Globalization, governments and international business: A business analytic approach", in John H. Dunning, ed., *Governments, Globalization and International Business* (Oxford: Oxford University Press) (forthcoming).
- Rugman, A. M., ed. (1993). *Management International Review*, 33, 2 (spring) (Special Edition on Michael Porter's Diamond of Competitive Advantage).
- _____, J. Van den Broeck and A. Verbeke, eds. (1995). *Beyond the Diamond: Research in Global Management*, vol. 5 (Greenwich, Conn.: JAI Press).
- UNCTAD, Division on Transnational Corporations and Investment (UNCTAD-DTCI) (1992-1994). *World Investment Directory* (4 vols.). Sales No. E.94.II.A.10; E.93.II.A.9; E.93.II.A.1 and E.92.II.A.11.
- _____ (1993). *World Investment Report 1993: Transnational Corporations and Integrated International Production*. Sales No. E.93.II.A.14.
- _____ (1994). *World Investment Report 1994: Transnational Corporations, Employment and the Workplace*. Sales No. E.94.II.A.14.
- _____ (1995). *World Investment Report 1995: Transnational Corporations and Competitiveness*. Sales No. E.95.II.A.9.
- _____ (1996). *World Investment Report 1996: Transnational Corporations: Investment Trade and International Policy Arrangements*. Sales No. E.96.II.A.14.
- United Nations Centre on Transnational Corporations (UNCTC) (1991). *World Investment Report 1991: The Triad in Foreign Direct Investment*. Sales No. E.91.II.A.12.
- _____ (1992). *World Investment Report 1992: Transnational Corporations as Engines of Growth*. Sales No. E.92.II.A.19.
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