THE NATIONAL ORIGIN OF THE OWNERSHIP ADVANTAGES OF FIRMS

ESRC Centre for Business Research, University of Cambridge
Working Paper No. 99

Lilach Nachum
ESRC Centre for Business Research
Department of Geography
University of Cambridge
Downing Place
Cambridge CB2 3EN

Jean Daniel Rolle
HEC – Management Studies
Geneve University
102, Boulevard Carl-Vogt
CH-1211 Geneve 4
Switzerland

Phone: 01223 339097
Fax: 01223 355674
E-Mail: ln207@cus.cam.ac.uk

Phone: +41 22 7058219
Fax: +41 22 7058104
E-Mail: rolle@uni2a.unige.ch

September 1998

This Working Paper relates to the CBR Research Programme on Industrial Organisation, Competitive Strategy and Business Performance.
Abstract

This study is designed to examine the extent to which home countries affect the nature of the ownership advantages of firms and subsequently their competitive position in the international market. The empirical test is based on a comparison of the ownership advantages of US, UK and French advertising agencies and examination of their possible origin in specific characteristics of the home countries.

The findings suggest that the impact of home countries is critical, but it provides only partial explanation for the nature of the ownership advantages which advertising agencies develop. Some of these advantages are related to the attributes of individual advertising agencies and they vary in line with their unique characteristics rather than as a response to the characteristics of their home countries.

Further information about the ESRC Centre for Business Research can be found on the World Wide Web at the following address: http://www.cbr.cam.ac.uk
THE NATIONAL ORIGIN OF THE OWNERSHIP ADVANTAGES OF FIRMS

Background

The theory of FDI assigns the origin of the ownership advantages of firms to the resources and conditions in the firms' home countries. Ownership advantages are regarded as advantages which firms develop in the home country, based on tangible and intangible assets which are tied to this country. These assets have the attributes of location specific advantages, as they are immobile geographically, and they are assumed to be shared by all firms within an industry of a particular country. Therefore the ownership advantages of firms are tied to the home country and subsequently firms of a particular nationality share similar advantages.

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 which 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. Hymer also acknowledged that the geographic distribution of such advantages is systematically unequal, as a result of "historical accident" (Hymer, 1960/1976, p. 72) in the distribution of skills and resource endowments between countries, and suggested that firms which have advantage are more likely to be from developed countries than from developing countries.

Attempts to explore further the national origins of the ownership advantages of firms as the factor which explains the industrial distribution of international economic activity among firms of different nationalities were made by Vernon (1966) who sought to explain why multinationals (at that time) were predominantly of US origin rather than of other nationalities. Vernon turned to the link
between the location advantages of the US and the advantages of US firms as the source of explanation. He maintained that the ownership advantages of US firms - and particularly their capacity to innovate new products and processes - are determined by the structure and pattern of US factor endowments and markets. The capabilities of firms in using physical and human assets to create ownership advantages are thus regarded as country-specific in origin.

Dunning explicitly attributes the type of ownership advantages of firms to the characteristics of their home countries, and maintains that the ownership advantages of one country’s firms result from utilisation of the resources available in their home country. Subsequently, the source of these advantages can be explained by the international disposition of country-specific and immobile endowments. The different structure of foreign activities of firms of different nationalities arises because the kind of ownership advantages generated by firms reflects the resource endowments and institutional framework of their home countries (Dunning, 1979, 1993).

Indeed, casual observation suggests that the ownership advantages of firms differ by nationality and subsequently excel in different industries and activities. For example, Dunning and Archer (1987) show that throughout history UK firms have enjoyed advantages in mature, relatively low technology sectors and in consumer goods industries, whereas German firms have recorded high performance levels in high technology sectors. Rugman (1987) argued that Canadian firms excel in marketing, building up a network of foreign distributors and establishing long term relationships with their customers and suppliers. The approach of Japanese firms to human resource management and to production management was maintained to underlie their unique advantages (Sullivan, 1992). Bartholomew (1997) shows that national systems leave their marks on firms in the biotechnology industry and lead to considerable national differences in the innovative activities of firms.
Empirical studies have provided systematic confirmation for these observations (see for example, Buckley, *et al*, 1984; Dunning and Pearce, 1985; Schroath *et al*, 1993; Shane, 1994; Dunning, 1996; Nachum, 1996; Yip *et al*, 1997). Firms of particular nationalities were shown in these studies to share common types of advantages, which differ from those of firms of other nationalities, and subsequently to compete successfully in different industries. This pattern suggests that the characteristics of home countries influence the ability of firms to create and sustain particular types of advantages.

However, the foundations of the theory of ownership advantages, as part of the more general theory of FDI, are in a period in which international economic activity was relatively limited. In fact, it was precisely the lack of international integration that was the basis of the barriers to international operations, and hence of the costs and disadvantages of ‘foreignness’ in Hymer’s approach (Yamin, 1991). Similar considerations underlie Vernon’s notion of a nationally limited technological and innovative horizon (Vernon, 1966). In an imperfectly integrated economy the link between ownership advantages and certain characteristics of home countries has strong theoretical appeal. With increasing globalisation and international integration, the nature of this link may change, because firms can have access to resources of foreign countries which may affect their ownership advantages similarly to the resources of the home countries. Under such circumstances, the sole role assigned to home countries in shaping the ownership advantages of firms might be questioned.

Indeed, more recently, and primarily in response to the globalisation of firms’ activities, scholars have increasingly dissociated the ownership advantages of firms from the characteristics of their home countries (see for example Bartlett and Ghosal, 1991; Vernon, 1992) and have regarded them as belonging to firms and originating from their unique characteristics and attributes. Factors internal to firms, which are developed as a result of the unique characteristics and assets
of firms, are considered to be the most critical determinants of their advantages (Teece, 1990; Barney, 1991; and Peteraf, 1993). Subsequently, ownership advantages reflect the proprietary attributes of individual firms rather than the characteristics of their home countries, and they vary according to factors such as firms’ experience, their level of performance, and the industry in which they operate, rather than their national origin. According to this conceptualisation, the characteristics of home countries play no role in affecting the ownership advantages of firms and there is no reason why firms of the same nationality would share similar attributes.

In the context of this debate, this study is designed to assess to what extent the type and nature of the ownership advantages of firms are linked to specific conditions in their country of origin, and hence are shared collectively by all firms of the same nationality, and what is the role of firm-specific attributes, which are the exclusive possession of individual firms and distinguish them also from their national cohorts.

The Choice of Advertising

The issues addressed in this paper are particularly interesting in the context of professional service industries. The leading firms in many of these industries originate from very few countries, a pattern which suggests that the characteristics of home countries strongly affect the ownership advantages of these firms. Yet, the advantages of professional service firms are based exclusively on intangible mobile assets. The ties of such assets to any particular location, including the home country, and subsequently, the link of the ownership advantages of firms to this location, are often unclear. Therefore, these industries are most interesting for the examination of the link between the characteristics of home countries and the competitiveness of firms.

In order to control for industry effects, we focus on a single professional service industry - advertising. The choice of advertising was influenced by several considerations. First, it has to be an industry
with intense international activity, because it is only in this context that the questions of this research are meaningful. The advertising industry satisfies this requirement. Estimates are that the cross-border activities of advertising TNCs accounted for about 50 percent of world-wide investment in advertising in the early 1990s (Kim, 1995).

Second, the dominant global players should be geographically concentrated in a non-stochastic manner, to allow the researcher to hypothesise home country effect. The leading advertising agencies have been concentrated in four geographic areas: the US, the UK, France and Japan. In 1993, all the top 20 agencies world-wide were based in these four countries. 43 out of the top 50 in this year were of these origins (20, 6, 3 and 14 from the US, the UK, France and Japan respectively) (Advertising Age, 1994). The study focuses on advertising agencies based in the US, UK and France. Japanese agencies, though they have a dominating position in the industry, are excluded because their activity is concentrated mostly in Japan and they are not significant competitors in international markets (The Economist, 1993).

Third, the combination of advantages which derive from creativity and from the need to respond to domestic demand creates special relations between home country and firm-specific characteristics. These relations make the advertising industry a particularly interesting case for the test of the questions addressed in this study. The critical role of creativity in the production leads to the development of strong firm-specific attributes. Consequently, a-priori there may be no basis to expect agencies of same nationality to share similar characteristics. At the same time, the strong need to respond to cultural characteristics and to reflect domestic factors may lead agencies of the same nationality to develop similar types of advantages, as they all have to respond to similar local needs. While this combination also exists in other professional service industries, it is most apparent in advertising.
The Conceptual Framework: Ownership Advantages in Advertising

While ownership advantages are characteristics of firms, if home countries affect their evolution, they become generic to particular countries, reflecting broader country characteristics that have been imprinted similarly on all firms within the country. We use the differences in the ownership advantages of advertising agencies of various countries, and the similarity within countries, as a way to examine the extent to which home countries affect the type and nature of the ownership advantages which firms develop.

The ownership advantages which form the conceptual framework were selected with the intention to identify the most critical dimensions of competitiveness in advertising. We add to this list one variable which is the outcome of the possession of ownership advantages rather an advantage by itself - internationalisation - as an additional dimension for the comparison between agencies of different nationalities. Home countries seem to exercise strong impact on the international expansion of advertising agencies, and this impact is not captured by the other ownership advantages examined. Therefore, this is an important variable in the context of the present study.

In what follows, we discuss briefly each of the variables included in the theoretical framework and its possible origin in particular characteristics of home countries, as well as how it is measured in the statistical analysis.

(i) Size

The reasons for the economic success of large advertising agencies are not very clear. Unlike manufacturing firms, these firms do not enjoy cost reduction with increased quantities of production, nor do they enjoy obvious advantages of internalisation. Yet, a closer look at the
industry over the last decades shows that ‘the optimal size’ (in terms of economic performance) of advertising agencies is increasing.

There are several size-related economies, which are not production-oriented, which seem to explain this phenomenon. First, larger agencies can gain economies from greater efficiencies in capacity utilisation achieved by specialisation of personnel and the economies of common governance (Dunning, 1989). Second, large size allows firms to absorb more easily the costs and risks associated with expansion abroad, and to offset the disadvantageous position which results from foreignness (Terpstra and Yu, 1988; Li and Guisinger, 1992; Li, 1994). Third, larger agencies can attract and handle larger clients, and these assignments tend to be more profitable (Maister, 1984). To attract the most desired clients, agencies need offices in the world’s most important markets, and only agencies of a certain size can have such operations. Fourth, large international agencies are better able to attract the best employees because they can offer them a more challenging and stimulating career.

The size of firms is often linked to the size of their home markets. The extent and nature of this link vary in line with certain characteristics of countries and industries. Large home markets may facilitate the emergence of large firms, because they provide advantages to firms which are able to benefit from economies of scale. Moreover, national attitudes towards mergers, conglomerations, internalisation are likely to affect the size of national firms. The size of the home market is likely to exercise strong impact on the size of firms in industries in which there are strong economies of scale and when the output is not tradable. This link is maintained to be particularly strong in service industries, because the possibility to compensate for the size of the home market by export is limited, if at all existing (UNCTC, 1990). As the main modality of servicing foreign markets in advertising is FDI, the ability to compensate for small home market through either export and non-equity agreements is limited, and the size of the home
market is thus an important factor which enhances the emergence of large agencies.

The size of the home market is cited as a main reason for the strong competitive position of US advertising agencies and their dominance in the industry (Mattelart, 1991; West, 1996). US agencies have enjoyed the advantage of operating in a home market far larger than any other market in the world: in 1996, domestic expenditure on advertising reached $169, $16 and $12 billions in the US, UK, and France respectively (WPP, 1996). Indeed, US agencies tend to grow far larger than agencies based in smaller home countries (Nachum, 1996). Due to the large size of their home market, US agencies are more familiar with managing activities on a large scale because they have acquired these capabilities in their home country and this provides them with an additional advantage in the international market, where there is a need to manage large operations.

Total gross income from advertising activities is used as a proxy for the size of agencies. There are two common measures for the size of business activity in the advertising industry: billing and gross income. Billing is a misleading indicator because it measures the amount which agencies spend for the purchasing of media space on behalf of their clients. Agencies are usually paid a commission of that amount (traditionally 15%) which is called ‘gross income’. This is the more meaningful measure of the size of their business activity.

(ii) Scope

Many advertising agencies have diversified into closely related areas (such as market research, direct marketing, public relations, sales promotion) in order to provide their clients various marketing and communication services by units of the same group or agency, and thus assure that the entire marketing communications of the clients would be synergistic (Enderwick, 1992). There seem to be strong potential for economies of scope in advertising which arise from
factors such as shared client databases or shared teams of creative employees. Evidence regarding these benefits, however, yields mixed results. Industry profit survey for the UK advertising industry found that the best performers for 1990-91 tend to be agencies that are narrowly focused (Mills, 1992). On the other hand, the appearance of WPP which is based on the idea of diversification, and achieved the dominant position in the industry in only a few years, suggests that diversification does pay. The problems faced by agencies which have not diversified are partially explained by their sole focus on traditional advertising.

Preference of home clients for a variety of promotional methods, as opposed to advertising alone, may push advertising agencies to diversify and give them advantages derived from scope. Indeed, agencies of different nationalities were found to pursue different diversification strategies, in response to demand of their home clients (Nachum, 1996). In the US ‘total marketing’ is an objective of advertisers, and US agencies have long adopted strategies of diversification such as ‘The Whole Egg’ (Young & Rubicam), and ‘Seamless Marketing’ (Grey). European advertisers to a lesser extent have an overall approach to marketing, and consequently most European agencies do not provide a wide range of promotion services (Rawsthorn, 1990). The traditional European approach viewed advertising as a separate discipline and, consequently advertising agencies were not engaged in other forms of promotion. Also today, diversification is common in Europe mostly among large agencies, such as Saatchi & Saatchi and WPP, and the smaller agencies tend to focus on advertising alone.

A proxy for scope should be based on measurement of the variety of different services offered by an agency, to capture the dispersion of their activity. Several measures can be used such as the number of marketing-services offered or the share of advertising in total revenues. We chose the latter since it is more informative regarding the distribution of economic activity. While many agencies diversified
into closely related areas, most of them continue to draw most of their revenues from media advertising. A measure of the number of services offered would provide a misleading picture as it would give undue weight to a wide dispersion of activities that account for only a small proportion of agencies’ total business.

(iii) Age

The accumulation of the most essential assets for competitive position is a process which typically lasts over a long period of time. If an advantage can be created quickly, competitors will have fast access to it through imitation (Itami, 1987), and will erode its competitive value. Therefore age is a critical determinant of competitive performance. Indeed, almost as a rule, the winners in the advertising industry are elders. Their establishment goes back to the turn of the century (for example, Lopex) or even to the last century (J. Walter Thompson, Lintas). Saatchi & Saatchi illustrates a case of an agency which accumulated competitive assets very rapidly and acquired dominant position which is not reflected in its age. However, such examples are rare and are the exception rather than the rule.

Age seems to be an important factor also in international operation. Terpstra and Yu (1988) found that international experience, gained through continuous operation in the international environment, had a positive impact on the international expansion of advertising agencies. This led them to conclude that there is a learning curve or experience effect in the internationalisation process of advertising agencies, which expresses the fact that it takes time to break into new markets and to build up reputation in foreign countries.

The age of firms tends to reflect the development of demand for their products and services in the home countries. This link is particularly strong in the early stages of the development of the industry and it may diminish as industries become older, due to entry and exit of firms during decades. But initially, firms are established in response to
demand, and the role of home demand has been maintained to be more important than demand elsewhere (Linder, 1961; Vernon, 1966; Porter, 1990). The activities of firms, and particularly their innovative activities, are in response to the demand characteristics of their home market. This is because firms are more likely to be aware of the possibility of introducing new products in their own market than elsewhere. Porter (1990) pursued this line of argument further and assigned significant role for home country demand in explaining the competitive advantages of firms. Porter argued and illustrated that firms innovate and upgrade their capabilities in response to demand in their home countries and that foreign demand does not provide similar stimuli.

These arguments suggest that the age of firms in an industry reflects the historical development of demand for their products and services in the home countries. This link is evident in advertising. US manufacturers were the first to use promotion methods as a tool to increase the volume of their sales. In response to this demand, the first US advertising agency was established already in 1840 (Fox, 1984), and in 1920s more than one thousand advertising agencies were operating in the US (Hower, 1949). In Europe, where demand for advertising developed much later, domestic advertising industries emerged only several decades later (Nevet, 1982; Mattelart, 1991). Also today, US agencies are, on average, much older than their European counterparts (Nachum, 1996) which implies that the link between the historical development of home demand and the age of advertising agencies has not diminished as the industry matured.

Agencies’ age will be measured by two variables: number of years from establishment (domestic age), and years of activity outside the home market (international age).
(iv) Employee quality

Advertising agencies (as all other professional service firms) are ‘people based’ businesses (Thomas, 1978). Their output is produced by the capabilities of their employees to respond in a creative manner to specific client needs. Therefore humans are their most important asset (Sibson, 1971; Aharoni, 1996), and their success depends primarily on the ability of their professionals relative to that of their counterparts in rival agencies (Sveiby and Lloyd, 1987).

The supply of qualified employees is thus critical for the success of advertising agencies. The larger the pool of qualified employees in a country, and the higher its quality, the better employees are available for an agency. Agencies based in countries with an abundant supply of this asset will be better able to develop competitive strength.

Employee quality will be proxied by salaries paid (by production department: creative department director; media department director; account manager; copywriter; art director) relative to the average pay level in the local market. Agencies should rank themselves above, equal to or below the average. The assumption underlying the choice of this proxy is that there is a positive correlation between an employee’s quality and his or her pay levels. Better employees are in a better negotiating position and can demand and get higher salaries. They are highly valuable for the agency employing them which will compensate them accordingly in order to maintain them.

(v) Creativity

Creative work is the core essence in the creation of an advertisement, and it is where most of its value-added lies. Each advertising campaign is designed for a different set of clients’ needs, and it has to be tailored to the specific situation by designing new ideas and approaches. Hence, advertisements have to be different from each
other and this uniqueness is an essential part of their value creation. Therefore creativity has high value in advertising.

Certain country characteristics may facilitate the creative capabilities of firms. Studies have shown how national systems of innovation affect the innovativeness of firms within these countries (see for example, Ergas, 1984; Lundvall, 1992). A large body of research suggests that the innovative activities of firms are shaped by the structural components of their countries which influence the accumulation and diffusion of knowledge required for innovation (see Bartholomew, 1997 for review of the literature). Likewise, the creative capabilities of advertising agencies are likely to reflect certain national patterns. For example, the amount and quality of art institutions in home countries is likely to affect the creative capabilities of agencies because they can use the knowledge generated by these institutions as a basis for the development of their own creative capabilities.

The average number of awards obtained by an agency in the Cannes festival (a competition in which judgement is based primarily on assessment of the creative work) during the last 5 years is used as a proxy for creativity. This proxy might be biased on the ground that due to the high costs associated with participation in the Cannes competition, some of the agencies interviewed reported having a policy of staying away from them. Thus, some agencies compete less or not at all, and their chance to get rewards is smaller or does not exist.

(vi) Internationalisation

The literature suggests several reasons for the advantages gained from international activity. Some of them would appear likely to hold explanatory power also in advertising. First, an international market enables firms to grow more rapidly than the general rate of growth in their home market, by moving operations to faster growing markets.
Second, a geographically dispersed firm is able to take advantage of a wider range of investment opportunities than a domestically focused firm. Third, due to their ability to offer more exciting work opportunities and faster promotion (which results from their faster rate of growth), TNCs are able to attract and retain higher quality employees compared with indigenous firms (Aharoni, 1996).

The international activity of advertising agencies is linked, to a certain extent, with the international activity of their home clients. Advertising agencies use their home clients as a vehicle for their own international expansion and they often expand abroad in order to service their home clients in foreign markets (Weinstein, 1974; Terpstra and Yu, 1988; Li and Guisinger, 1992; West, 1988, 1996)\textsuperscript{3}.

This phenomenon of following home clients abroad was particularly common among US agencies in the early stages of their international expansion. J. Walter Thompson (JWT)’s agreement with General Motors in the 1920s is a well-known example for an international expansion of advertising agency which was pushed by its client. According to this agreement JWT opened an office in every country where General Motors had an assembly plant operation or distributor. In reward General Motors placed all domestic and international advertising exclusively with JWT (West, 1988). The agreement accelerated significantly the internationalisation of JWT (Merron, 1991), and was used as the basis for the establishment of JWT’s position in international markets. The expansion abroad of McCann Erickson was similarly pushed by its major client Standard Oil (UNCTC, 1979). Systematic evidence for this pattern of international expansion (Weinstein, 1974) suggests that the international expansion of US agencies during the first half of the 20th century followed closely the international expansion of US manufacturing firms\textsuperscript{4}.

In more recent decades the international expansion of advertising agencies has increasingly shifted from client-following to market seeking, and has been driven by their own strategic motivations,
independent from those of their clients. Yet, in some cases the push from the clients still acts as an important factor, particularly in relation to the entry of advertising agencies into markets which are entirely new for them. For example, the US agency Leo Burnett International opened recently its offices in Eastern Europe when Philip Morris and Procter & Gamble, its two major clients, moved into this region. ‘Following the client’ has been a deliberate strategy which underlies the international expansion of McCann Erickson in more recent decades, as expressed by the senior executive of its international operation in the early 1990s: ‘...McCann-Erickson has grown internationally in parallel to key international clients....it has not been our strategy to open an office in a new country and then look for clients. We generally open offices to serve existing clients who have become active in these markers’ (Kim, 1995, p. 14).

The ‘push’ from home clients is more common in some countries than in others, and it explains, at least partly, differences in the intensity of international activity among advertising agencies of different nationalities. This push has been particularly typical in the US and is often regarded as a country specific explanation for the international success of US agencies (West, 1996). European and Japanese TNCs to a lesser extent push their advertising agencies abroad. Rather, they display a preference for local agencies in the countries they establish operations.

Our proxy for internationalisation is the share of advertising revenues abroad (advertising revenues abroad/total advertising revenues).

Table 1 summarises the variables which form the theoretical framework for the comparison between agencies of different nationalities and how they are measured in the statistical analysis.

The accuracy of the variables selected as measures of the theoretical concepts might be a source of controversy. The process of transforming qualitative factors into explicitly defined quantifiable variables is a difficult task. Some theoretical concepts are not
operational, and it may not be possible to find for them empirical (operational) counterparts. In other cases, there may remain a discrepancy between the theoretical concepts and the operational counterparts. As a result of the indirect link (in some cases) between the two, the accuracy of the latter as measures of the former often remains controversial.

Several of the measures refer only to activities under the same ownership (notably scope, size, internationalisation) and thus do not capture advantages which might be gained through non-equity co-operation agreements. However, since such agreements are rare in advertising (Marketing Business, 1992) the bias introduced by these measures is small.

In what follows we use the conceptual framework summarised in Table 1 to examine the possible influences of home countries on the ownership advantages of advertising agencies. This examination proceeds in the following fashion. First, we compare between winners and losers of various nationalities along the set of ownership advantages presented in Table 1 in order to examine to what extent the factors which distinguish between success and failure are the same in different countries. This comparison is used to isolate the factors which are critical for success in each country and to examine whether these are the same across countries. If the ownership advantages of firms are developed in response to certain characteristics of their home countries, firms of different nationalities are likely to develop different capabilities in order to compete successfully. Subsequently, the factors which discriminate the winners from the losers vary by country. If, however, firms develop their ownership advantages in a manner which is not related to their home country, but rather reflect their unique attributes or the characteristics of a global industry, then the factors critical for success would not be related to the nationality of firms.
Second, we test to what extent a common set of ownership advantages discriminates between advertising agencies of different nationalities. This test allows to assess whether there are common ownership advantages in the industry, which are shared by advertising agencies regardless of their nationality, or whether these are rather country-specific and vary by country. The argument which underlies this exercise is that if ownership advantages differ across countries but are similar within them (in which case a common set of ownership advantages discriminates between agencies of different national origin), it implies that home countries affect the ownership advantages which advertising agencies develop. Otherwise, there will be no reason for such patterns. If, however, ownership advantages do not vary systematically between agencies of different nationalities, nor are they similar among agencies of the same nationality (in this case, the set of ownership advantages does not possess discriminatory power among countries), it suggests that home countries do not affect the ownership advantages of firms. The latter are rather shaped by the unique attributes of the firms and in response to the conditions of a global industry, which are similar for all firms competing globally.

The Agencies Studied

Data on selected advertising agencies headquarters in the US, UK and France were used for the empirical analysis. It will be recalled that these three countries were chosen to be the focus of the analysis because they are the home of a large number of significant global players in advertising and thus allow us to examine the potential impact of home countries on the competitiveness of advertising agencies.

To be included in the study agencies had to meet two requirements. First, they should be multinationals, to allow us to compare among agencies of different nationalities competing, at least potentially, against each other. Our definition of multinationality includes agencies which draw at least 10 percent of their revenues from outside
their home market. Second, agencies should meet certain measures of survival and performance, which allow us to classify them as winners or losers. The first step to distinguish the winners from the losers was survival. At the next step, we use performance to separate between the mere survivors and the winners, as well as the losers from agencies which exit the market for other reasons (such as mergers, acquisitions). Thus, winners are existing agencies which maintained above industry-average growth over the 1980s. Losers are agencies which exit the market during the 1980s and were losing market share and/or were not profitable over their last years of existence.

The rush of mergers and acquisitions of the 1980s and early 1990s created difficulties in selecting the unit of analysis and in identifying the national identity of agencies. Because we are interested in operating units, we ignored mergers and acquisitions which created holding companies financing a network of independent agencies, with limited, if at all, synergy of resources among the different parts of the conglomerate. Some of the agencies compounding these conglomerates were included in the analysis as independent agencies. For example, J. Walter Thompson and Ogilvy & Mather, which are part of WPP, were included in the study as independent agencies, but WPP was excluded. Further, we limited our scope to agencies whose country of origin can be clearly defined, and omitted from the study agencies with mixed national identity. An example of an agency which was dropped for this reason is D’Arcy-MacManus and Masius, a result of a merger between US and French agencies. All the agencies which met these requirements were approached. The final sample excludes those which refused to participate (response rates were 74, 95 and 65 percent in the US, the UK and France respectively). Table 2 presents the structure of the sample.

Data were collected from annual reports of the agencies studied and through personal interviews with one representative in each agency, typically the chief executive. These were sources for data such as year of establishment and movement abroad, salaries to employees and
certain financial information. Data regarding agencies' performance in the Canne competition and turnover were collected from various publications of domestic and international advertising associations. The agencies which provided the data wish to remain anonymous and therefore their names cannot be released.

The structure of the sample reveals a different distribution of winners and losers in the three countries. The number of winners is larger in the US and the UK relative to France. We conducted a Fisher exact test, in order to test the independence between success (being winner or loser) and the national origin of an agency. The test yielded no indication that the agencies studied are biased vis-à-vis the countries or the performance groups. This means that there is no significant correlation in the sample between success and national origin.

Statistical Analyses and Discussion

In order to verify our choices of ownership advantages we tested the power of the set of ownership advantages (summarised in Table 1 above) in discriminating between winners and losers (regardless of national origin). For that end, we compared the mean values of the ownership advantages for the two groups, where \( \mu_1 \) is the mean of the winners, \( \mu_2 \) the mean of the losers and the null hypothesis is:

\[
H_0: \mu_1 = \mu_2
\]

If \( H_0 \) is rejected, it implies that the sources of competitive advantage identified above discriminate between winners and losers and thus can be regarded as critical determinants of competitiveness in the industry. A Yao Test (Yao, 1965) yielded \( Z = 3.35 \) (\( F \) distribution with \( p=8 \) and \( f=33 \) degrees of freedom), allowing us to reject the \( H_0 \) at the 1% level of significance\(^5\).

In the next step, we use the comparison between winners and losers to examine whether similar factors are critical for success in different
countries. Figures 1-4 present descriptive boxplots of the various sources of ownership advantages for winners and losers in the three countries and for the three countries combined. They allow us to draw some insight regarding the nature of the differences between winners and losers and the impact of home countries on these differences.

Comparison of the means of the various sub-samples suggests that different factors discriminate the winners from the losers in the three countries, which implies that the factors which are important for competitive success vary across countries. In the US domestic and international age, creativity and size are the most significant discriminators between winners and losers, while in France the quality of the employees and scope seem to make the difference. In the UK, the differences between winners and losers rest on a single variable - creativity.

Many of these differences can be attributed to specific characteristics of the countries studied. For instance, there are large differences between US winners and losers in terms of both domestic and international age but only minor differences in the UK and the French samples. Moreover, in the latter the losers are older than the winners (with the exception of international age in the UK) while in the former the winners are the older ones. These differences suggest that age plays a different role in these countries, a fact which can be explained by the historical development of the industry in these countries.

As discussed above, the advertising industry developed in the US long before it emerged in the UK and France. The first US advertising agency was established in 1840s, and by the beginning of the 20th century the industry was already operating in a form similar to its present form (Fox, 1984). Unlike the situation in the US, advertising was to a lesser extent part of the UK and the French way of doing business (Ogilvy, 1963) and advertising developed much later in these countries. The development of the UK industry was further delayed
because of the presence of US agencies, which created high barriers to entry for domestic agencies.

The differences between the countries are even more substantial when it comes to age of international activity. US agencies have been operating outside the US since the turn of the century (West, 1988), and significantly extended their international activity during the post Second World War years, taking advantage of the outward FDI flows of US manufacturers (Weinstein, 1974). Already in the early 1960s, 36 US agencies were operating a total of 281 overseas offices (Nevet, 1982). By contrast, UK and French agencies were very late to go abroad and until very recently, most of their activity was concentrated in their local markets. In the early 1970s, only one French agency - Publicis - was active outside France (Mattelart, 1991). The international activity of UK agencies was small in magnitude and concentrated in the Commonwealth countries. In 1978, not one of the world's top 50 agencies was of UK origin (Advertising Age, 1979).

It might be that the younger age of the industries in the UK and France has not allowed differences between winners and losers to emerge yet, as agencies at all levels of competitiveness are relatively young. In the US such differences have strongly emerged during decades of domestic and foreign activity.

Another illustration of the impact of home country characteristics on the factors which distinguish the winners from the losers is suggested by creativity. While creativity is regarded as one of the most critical factors for success in advertising (see above), in France, winners and losers are identical along this measure. Creativity distinguishes better the winners from the losers in the UK, and it is critical in the US. These differences might be explained by national attitudes towards the Cannes competitions, the proxy used for creativity. In the US, and increasingly in the UK, advertisers regard success in these competitions as an evidence of agencies' creative capabilities. US and UK agencies use their achievements in these competitions as a
promotion tool and regularly inform their clients about the number of awards won. Such an attitude is not common in France. French agencies, regardless of their levels of performance, do not assign much value to performance in the Cannes competitions and they compete less than their UK and US counterparts (Advertising Age, 1991). Hence, creativity distinguishes between the winners and losers in the UK and even more in the US, but it is not a factor critical for success in France.

The differences in the discriminatory value of size between winners and losers in the three countries suggest another example for the impact of country of origin. As discussed above, the three countries differ substantially in terms of their size, with US agencies enjoying considerable advantage in this respect. Indeed, size is a critical discriminator between US winners and losers, but it is far less important in the European countries. In the UK, winners and losers are identical in terms of their size, and in France the differences are relatively small. The US provides a potential source for size advantage, and successful US agencies use it to develop firm-specific advantage in terms of large size. By contrast, the UK and France do not provide similar opportunity and therefore size does not distinguish the winners from the losers in these countries.

The discussion above suggests that the causes of success and failure differ from country to country, in a manner which reflects specific characteristics of the countries concerned. Some factors, though critical for success in one country, are irrelevant in others. These findings suggest that firms develop their ownership advantages in response to specific characteristics of their home countries. Since the latter differ, different types of ownership advantages emerge in various countries and different factors are critical to compete successfully. When moving abroad firms use these attributes which they developed initially in the home country, in competition against firms of other nationalities. The latter have strength in different areas,
which they developed in response to the characteristics of their home countries.

A more formal test of the impact of home countries on the ownership advantages of firms is sought by examining the relations between national origin and a set of ownership advantages of advertising agencies \(X=X_1, \ldots, X_7\) by mean of discriminant analysis. National origin is tested at two levels: one for US, UK and French agencies, and another in which UK and French agencies are grouped together (hereafter European agencies) and compared with US agencies.

Discriminant analysis is based on the idea of finding suitable linear combinations of some quantitative variables (ownership advantages in this study) which separate between the groups concerned (US, UK and French agencies), a feature which makes it particularly suitable for the test of the issues addressed by this study. A variable (ownership advantage) possesses discriminatory power between agencies of different nationalities if its mean value changes considerably from country to country, and the values within a country are fairly constant. The more the discriminatory variables (ownership advantages) differ across the countries, the stronger the link between them and the national origin of the agencies studied.

The variables used in the analysis were scaled, i.e. replaced by:

\[
(X_j - \text{mean}(X_j))/\text{std}(X_j)
\]

where \(\text{mean}(X_j)\) and \(\text{std}(X_j)\) are the mean and the standard deviation of \(X_j\), so that the mean and standard deviation of the scaled variables are 0 and 1, respectively. Table 3 presents the correlation ratios (sum of squares between the groups divided by total sum of squares), the F-ratios and the resulting p-values for the usual F-test, which emerged from the two analyses, using a classical one-way analysis of variance (Manly, 1994, p.50).
The data in Table 3 illustrate considerable differences among the various ownership advantages in terms of their discriminatory power among agencies of different nationalities. Some ownership advantages discriminate strongly, which implies that they are similar within a country but vary systematically across countries. Other ownership advantages, however, lack such power, a finding which suggests no systematic variation across countries. These findings imply that the impact of home countries on advertising agencies is mixed - it is strongly pronounced in some ownership advantages, while others are affected by the characteristics of home countries to a lesser extent. These are likely to reflect the firm-specific attributes of individual firms and to be developed in response to the conditions of a global industry, which affect all agencies competing globally, regardless of their nationality.

Similar variables possess discriminatory power in the two analyses presented in Table 3 but their discriminatory power increases substantially when UK and French agencies are grouped together. The variables which have significant discriminatory power between US, UK and French advertising agencies - domestic and international age and size at the 0.05 level, and employees’ quality and creativity at the 0.1 level - become more significant in the analysis of European and US agencies. Scope and internationalisation are not significant in both analyses. These findings suggest that the differences between the two analyses are a matter of degree rather than of kind. National differences lie on the same ownership advantages, but since the European agencies are relatively similar compared with US agencies, the discriminatory power of these ownership advantages increases.

The most powerful discriminatory variables are domestic and international age, followed by size. It is in these areas that home countries affect the competitiveness of advertising agencies most strongly. As discussed above, US agencies are far older than UK and French agencies and they internationalised much earlier. These developments were a response of US agencies to certain conditions in
their country, which were missing in the UK and France. The strong discriminatory power of size is likely to be the result of large differences in the size of home markets of these agencies. Indeed, these three variables become much more significant in the analysis for European vs US agencies, which suggests that the differences between US and European agencies in terms of these ownership advantages are larger than between US, UK and French agencies.

Somewhat surprising are the non-significant results for internationalisation, as agencies from the three countries differ much in terms of the intensity of their international activity. It might be that internationalisation is correlated with international age and therefore yields non-significant results. In order to account for the correlation between the original variables, and subsequently to diminish the number of discriminatory variables, we conducted actual discriminant function analysis (Manly, 1994, pp. 107-118). This analysis results in a smaller number (at the most the number of the groups minus one) of new variables which are linear combinations of the original variables.

Two new variables, $Z_1$ and $Z_2$ (the so-called first and second discriminant variables), yielded the highest F-ratio in a one-way analysis of variance for the variation within and between the three countries (under the condition that there is no correlation between them). The coefficients of $Z_1$ and $Z_2$ are the eigenvectors associated with the two largest eigenvalues ($Z_1=1.05; Z_2=0.04$) of the matrix product $WB$, where $W$ is the within-sample matrix and $B$ is the between-groups matrix (Manley, 1994, p. 110). The large differences between the eigenvalues of $Z_1$ and $Z_2$ imply that most of the variance among agencies originated from the three countries is captured by $Z_1$ alone, whereas $Z_2$ accounts for a far smaller portion of the differences. In a similar analysis between European and US agencies, only one discriminant variable - $Z_1$ - was significant. Table 4 presents the correlation coefficients (usual and intra-class correlation) between the original variables $X_1,...,X_7$ and the new variables $Z_1$ and $Z_2$, in the two analyses.
In the analysis between the US, UK and French agencies, Z1 is strongly correlated with both measures of age (domestic and international) and with size. This means that Z1 discriminates strongly among agencies on the basis of these variables. Z2 correlates negatively with creativity. Lower values of Z2 will thus be displayed by agencies which are highly creative. In the analysis between European and US agencies, Z1 correlates with both measures of age, size and employee quality, and to a lesser extent with creativity. A test of significance (see appendix) confirmed these choices and showed that in the analysis of the three countries Z1 possesses only moderate discriminatory value, whereas Z2 lacks such power. Moreover, Z1 does not discriminate between French and UK agencies, which hence appear to have similar attributes, in terms of the original variables (the set of ownership advantages). Most interestingly, Z1 becomes far more significant in the analysis of European vs US agencies, a finding which provides additional confirmation for the larger differences between these two regions compared with the three countries in terms of the seven original variables, notably in terms of age and size.

In Table 5 we present the results of discriminant analyses between US, UK and French agencies based on Z1 and Z2 as the discriminatory variables, and between European and US agencies, based on Z1.

Z1, which correlates with age and size, strongly separates the large, well-established US agencies from UK and French agencies, whose values on Z1 are lower and rather mixed. Yet, Z1 hardly discriminates between UK and French agencies, which are quite similar in terms of age and size. Z2, which correlates (negatively) strongly with creativity, varies only little across the three countries and does not possess significant discriminatory power. In the analysis of European and US agencies, Z1 separates sharply between European and US agencies, in a manner which corresponds to the following:
if Z1>0.16, then US agencies
if Z1<0.16, then European agencies.
The four US agencies which are the exception for this rule (i.e., they have $Z1<0.16$ and thus appear mixed among the European agencies) were classified earlier as US losers. The distinction between winners and losers of European origin in Table 5 is far less sharp, which suggests that the set of variables discriminates more between success and failure in the US than in Europe. This finding provides additional evidence for the mixed impact of home countries on the ownership advantages of advertising agencies, as the discriminatory power of the set of variables analysed varies partly in line with national origin and partly with success and failure.

The findings of the previous analyses suggest that a combination of both country-specific and idiosyncratic factors is in play. Ownership advantages are shaped both by the resources available in home countries and by firm-specific attributes. It is possible to identify the impact of home countries on some ownership advantages. These advantages are generic to particular countries and they differ systematically across countries, reflecting broader country characteristics that have been imprinted similarly on all firms within the country. Some other ownership advantages do not differ across countries, nor are they similar within them, but rather seem to be the attributes of individual agencies. These ownership advantages are developed in response to competitive pressures of a global industry, rather than to specific characteristics of home countries, and they vary across advertising agencies in a manner which is not related to their nationality.

The most powerful discriminatory variables were found to be international and domestic age and size, while scope and internationalisation possess no discriminatory power. It might be suggested that the impact of home countries is more critical when it comes to ownership advantages which are related to the core characteristics of firms, such as their size and age, while in factors related to strategic choices (and which tend to have a more temporary nature), firms develop capabilities which are less related to the
characteristics of their home country but rather reflect their firm-specific attributes.

The discriminatory power of the set of ownership advantages increased substantially when the European agencies were grouped together and were compared with US agencies. Yet, the differences are a matter of magnitude rather than of a kind, i.e., the same variables possess discriminatory power in both analyses but their discriminatory power varies between them. This implies that US and European agencies differ more than US, UK and French agencies, in terms of the ownership advantages analysed. Also the presentations in the boxplots above (see figures 1-4 and the discussion which follows) suggest larger differences between the two regions relative to the differences within Europe.

Similar differences were also found between firms competing in other industries. While there is large variety among European firms, they were found to be homogenous when compared with their US counterparts (see for example, Yip, 1991; Yip et al, 1997). Yip et al (1997) suggest that while nationality matters very much for the strategic behaviour of multinational firms, in the case of European firms, it seems to apply at the regional level rather than at the level of individual countries.

Due to limitations of the data (particularly the small number of observations), the conclusions of this study can only be viewed as indicative and suggestive rather than as a statistical confirmation of a theory. We believe that despite these limitations, some insight on the issue under consideration could be drawn. However, this insight should be confirmed by future research, based on larger samples of both firms and countries. Future research should also examine the validity of the findings for different service and manufacturing industries.
The Implication of the Study for Firms and Governments

Evidence regarding the extent to which national firms enjoy collective advantages which accrue to them from the utilisation of the resources in their home country, or they rather develop their capabilities individually and without direct reference to these resources, is of crucial importance, because it assigns different roles for governments and firms in shaping the competitiveness of firms. The more advantages are affected by specific conditions in home countries, the more significant is the role of governments. If, however, advantages are the outcome of unique capabilities of individual firms, then government actions have only limited impact on the competitiveness of firms.

The findings of the present study suggest that the competitiveness of advertising agencies is partly determined at a national level, rather than entirely by specific attributes of individual agencies. This suggests limits to the degree of control which individual firms can exercise on their competitive position. The ability of firms to improve their competitive position, by ways of strategic actions, is limited because their advantages are partly shaped by the conditions in their home countries, on which they usually have no individual control. These lessons need to be explicitly recognised in international strategy formulation and interpretation. As home countries affect the ability of advertising agencies to create ownership advantages, home-based factors, which are external to firms and mostly not under their control, should be incorporated in the strategies of firms.

While the findings suggest some limits to the control of firms over their competitiveness, they assign a significant role for governments. In recent decades, factors internal to firms have become the focus of explanations for firms’ competitiveness. Characteristics of individual firms have been regarded as the forces that enable them to operate in countries outside the ones where they originated in competition with local firms that have advantage of familiarity with local markets and
are favoured by local governments. These characteristics are regarded as belonging to firms rather than to countries and as being readily transferable from country to country within, but not between, firms. The implications of this conceptualisation for government policies is that their ability to affect the competitiveness of national firms is limited, if at all existing, because the factors which affect competitiveness are only partially, if at all, under their control.

Our study, however, has shown that this is not the case, because the factors which affect the competitiveness of firms are, to a large extent, tied to the conditions in the home countries of these firms, on which governments exercise the sole impact. Developing and improving these conditions is thus crucial in determining the competitiveness of firms.

Moreover, the evidence of the present study is based on a professional service industry, in which ownership advantages are drawn entirely from intangible assets, many of which are mobile. This suggests that the impact of government policies is not limited to the factors of production which can only be exploited within their national borders, but it reaches also those which might be exploited by firms outside the country where they were initially developed. This implies different, and probably greater, role for governments than ever before, because their policies are directed towards the creation of assets such as human capital, different kinds of knowledge, or organisational systems. The ability to affect assets of this kind by way of various policies is larger than the ability to affect the amount and quality of natural resources.
Notes

1. Most other professional service industries are characterized by intense international activity. For example, estimations are that the market share of multinationals in the management and engineering consulting industries are 40% (Aharoni, 1996) and 55% (UNCTC, 1989) respectively. However, these industries do not meet the second requirement. The most internationally competitive management consulting firms are concentrated in a single country (the US), which limits the scope of research to observation based on a single country, and questions its validity. The leading firms in the engineering consulting industry originate from a large number of countries, and home country impact cannot be hypothesized (UNCTC, 1989).

2. It might be argued that this measure should be adjusted to size, because large agencies may compete more in these competitions. However, size of agencies was found to be unrelated to their tendency to take part in these competition (Advertising Age, 1991) and we therefore use absolute numbers.

3. Following home clients abroad was shown to derive the international expansion of other professional service firms as well. See Sluyterman (1997) for accounting, Spar (1997) for law, Erramilli and Rao (1990), Li and Guisinger (1992) and Li (1994) for several service industries.

4. An important implication of this pattern of internationalization of advertising agencies is that the location advantages of potential host countries were largely irrelevant in this process. The clients selected the locations for their activities, based on their evaluation of the relative advantages offered by different countries, and the agencies followed them. Thus, agencies were passive in the choice of location. Only later, when the importance of the ‘follow the client’ motive diminished (see ahead), the advantages of
different countries became an important determinant of agencies' choice of location for their international activities.

5. A more common statistical test for the significance of differences between two groups (such as Hotelling T2 Test (see Manly, 1994, pp. 39-40)) was not adequate because it is typically based on the assumptions of normality and equal variability within the sample. Both assumptions do not hold in our data, a problem known in the literature as the multivariate Behrens-Fisher problem. The Yao Test (Yao, 1965) is commonly used in such cases.

6. The boxplots describe visually the distribution of the ownership advantage in question. The lower and upper lines of the box are the 25th and 75th percentile. The distance between the top and the bottom of the box is the interquartile range, a measure of dispersion. The line in the middle of the box is the median. When the mean does not appear in the centre of the box, the distribution is skewed.

7. The extent of individual control of firms on the characteristics of their home countries is very much a question of the size of the latter relative to the size of the domestic industry in their home market. Large firms based in small countries often can shape the location advantages of their countries rather than the other way around. However, most firms do not exercise individual impact on the location advantages of their home countries.

8. Z1 and Z2 should be interpreted as indexes of separation between national groups, on the basis of the ownership advantages (variables X1,..., X7).
TABLES AND FIGURES
Table 1. Ownership advantages of advertising agencies

<table>
<thead>
<tr>
<th>Ownership advantages</th>
<th>Measures (proxy variables)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Total advertising revenues ($)</td>
</tr>
<tr>
<td>Scope</td>
<td>The share of advertising in total revenues</td>
</tr>
<tr>
<td>Age</td>
<td>Years from establishment</td>
</tr>
<tr>
<td></td>
<td>Years of international activity</td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td>International</td>
<td></td>
</tr>
<tr>
<td>Employees quality</td>
<td>Salaries paid relative to the industry average</td>
</tr>
<tr>
<td>Creativity</td>
<td>5 years average of awards won for creativity in Cannes competition</td>
</tr>
<tr>
<td>Internationalisation</td>
<td>The share of advertising revenues abroad in total revenues</td>
</tr>
</tbody>
</table>

Table 2. The structure of the sample

<table>
<thead>
<tr>
<th>Country</th>
<th>Winners</th>
<th>Losers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>9</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>UK</td>
<td>8</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>France</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>12</td>
<td>35</td>
</tr>
</tbody>
</table>
**Table 3. Discriminatory power of individual ownership advantages**

One way analysis of variance for individual ownership advantages

<table>
<thead>
<tr>
<th>Ownership advantages</th>
<th>US, UK and French agencies</th>
<th>European and US agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>correlation ratio</td>
<td>F-ratio</td>
</tr>
<tr>
<td>domestic age</td>
<td>0.32</td>
<td>7.48</td>
</tr>
<tr>
<td>international age</td>
<td>0.25</td>
<td>5.41</td>
</tr>
<tr>
<td>employees quality</td>
<td>0.14</td>
<td>2.63</td>
</tr>
<tr>
<td>creativity</td>
<td>0.15</td>
<td>2.79</td>
</tr>
<tr>
<td>scope</td>
<td>0.00</td>
<td>0.02</td>
</tr>
<tr>
<td>size</td>
<td>0.20</td>
<td>3.97</td>
</tr>
<tr>
<td>internationalisation</td>
<td>0.02</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**Table 4. Correlation between the ownership advantages and the discriminant variables**

Correlation coefficients

<table>
<thead>
<tr>
<th>Ownership advantages</th>
<th>US, UK and French agencies</th>
<th>European and US agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Usual cor. coefficients</td>
<td>Intra-class cor. coefficients</td>
</tr>
<tr>
<td></td>
<td>Z1</td>
<td>Z2</td>
</tr>
<tr>
<td>domestic age</td>
<td>0.79</td>
<td>-0.19</td>
</tr>
<tr>
<td>international age</td>
<td>0.70</td>
<td>-0.10</td>
</tr>
<tr>
<td>employees quality</td>
<td>0.53</td>
<td>0.10</td>
</tr>
<tr>
<td>creativity</td>
<td>0.50</td>
<td>-0.76</td>
</tr>
<tr>
<td>scope</td>
<td>0.05</td>
<td>0.03</td>
</tr>
<tr>
<td>size</td>
<td>0.62</td>
<td>-0.10</td>
</tr>
<tr>
<td>internationalisation</td>
<td>0.21</td>
<td>0.00</td>
</tr>
</tbody>
</table>

35
Table 5. Index of discrimination between national groups on the basis of the ownership advantages
Firms ranked by increasing values of Z1

<table>
<thead>
<tr>
<th>Agency’s origin</th>
<th>Z1</th>
<th>Z2</th>
<th>Agency’s origin</th>
<th>Z1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. France</td>
<td>-0.39</td>
<td>-0.01</td>
<td>1. Europe</td>
<td>-0.38</td>
</tr>
<tr>
<td>2. France</td>
<td>-0.36</td>
<td>-0.01</td>
<td>2. Europe</td>
<td>-0.35</td>
</tr>
<tr>
<td>3. UK</td>
<td>-0.31</td>
<td>-0.53</td>
<td>3. Europe</td>
<td>-0.35</td>
</tr>
<tr>
<td>4. UK</td>
<td>-0.27</td>
<td>0.08</td>
<td>4. Europe</td>
<td>-0.26</td>
</tr>
<tr>
<td>5. France</td>
<td>-0.23</td>
<td>0.10</td>
<td>5. Europe</td>
<td>-0.21</td>
</tr>
<tr>
<td>6. US</td>
<td>-0.23</td>
<td>0.08</td>
<td>6. US</td>
<td>-0.21</td>
</tr>
<tr>
<td>7. France</td>
<td>-0.21</td>
<td>0.00</td>
<td>7. Europe</td>
<td>-0.21</td>
</tr>
<tr>
<td>8. France</td>
<td>-0.20</td>
<td>-0.13</td>
<td>8. Europe</td>
<td>-0.20</td>
</tr>
<tr>
<td>9. France</td>
<td>-0.19</td>
<td>0.03</td>
<td>9. Europe</td>
<td>-0.19</td>
</tr>
<tr>
<td>10. France</td>
<td>-0.17</td>
<td>0.08</td>
<td>10. Europe</td>
<td>-0.16</td>
</tr>
<tr>
<td>11. UK</td>
<td>-0.14</td>
<td>-0.02</td>
<td>11. Europe</td>
<td>-0.14</td>
</tr>
<tr>
<td>12. UK</td>
<td>-0.13</td>
<td>-0.14</td>
<td>12. Europe</td>
<td>-0.14</td>
</tr>
<tr>
<td>13. France</td>
<td>-0.13</td>
<td>-0.04</td>
<td>13. Europe</td>
<td>-0.13</td>
</tr>
<tr>
<td>14. UK</td>
<td>-0.11</td>
<td>0.07</td>
<td>14. Europe</td>
<td>-0.10</td>
</tr>
<tr>
<td>15. UK</td>
<td>-0.09</td>
<td>-0.19</td>
<td>15. Europe</td>
<td>-0.10</td>
</tr>
<tr>
<td>16. France</td>
<td>-0.09</td>
<td>0.14</td>
<td>16. Europe</td>
<td>-0.08</td>
</tr>
<tr>
<td>17. UK</td>
<td>-0.08</td>
<td>0.02</td>
<td>17. Europe</td>
<td>-0.07</td>
</tr>
<tr>
<td>18. US</td>
<td>-0.08</td>
<td>0.07</td>
<td>18. US</td>
<td>-0.07</td>
</tr>
<tr>
<td>19. US</td>
<td>-0.05</td>
<td>0.04</td>
<td>19. US</td>
<td>-0.05</td>
</tr>
<tr>
<td>20. UK</td>
<td>-0.02</td>
<td>-0.10</td>
<td>20. Europe</td>
<td>-0.03</td>
</tr>
<tr>
<td>21. UK</td>
<td>-0.02</td>
<td>0.11</td>
<td>21. Europe</td>
<td>-0.01</td>
</tr>
<tr>
<td>22. UK</td>
<td>0.00</td>
<td>0.25</td>
<td>22. Europe</td>
<td>0.02</td>
</tr>
<tr>
<td>23. UK</td>
<td>0.06</td>
<td>-0.07</td>
<td>23. Europe</td>
<td>0.05</td>
</tr>
<tr>
<td>24. US</td>
<td>0.06</td>
<td>0.16</td>
<td>24. US</td>
<td>0.08</td>
</tr>
<tr>
<td>25. France</td>
<td>0.09</td>
<td>0.21</td>
<td>25. Europe</td>
<td>0.11</td>
</tr>
<tr>
<td>26. UK</td>
<td>0.15</td>
<td>0.02</td>
<td>26. Europe</td>
<td>0.15</td>
</tr>
<tr>
<td>27. US</td>
<td>0.17</td>
<td>0.15</td>
<td>27. US</td>
<td>0.18</td>
</tr>
<tr>
<td>28. US</td>
<td>0.21</td>
<td>-0.11</td>
<td>28. US</td>
<td>0.19</td>
</tr>
<tr>
<td>29. US</td>
<td>0.25</td>
<td>0.04</td>
<td>29. US</td>
<td>0.24</td>
</tr>
<tr>
<td>30. US</td>
<td>0.32</td>
<td>0.13</td>
<td>30. US</td>
<td>0.32</td>
</tr>
<tr>
<td>31. US</td>
<td>0.37</td>
<td>0.11</td>
<td>31. US</td>
<td>0.36</td>
</tr>
<tr>
<td>32. US</td>
<td>0.37</td>
<td>0.03</td>
<td>32. US</td>
<td>0.37</td>
</tr>
<tr>
<td>33. US</td>
<td>0.45</td>
<td>-0.28</td>
<td>33. US</td>
<td>0.41</td>
</tr>
<tr>
<td>34. US</td>
<td>0.47</td>
<td>-0.52</td>
<td>34. US</td>
<td>0.41</td>
</tr>
<tr>
<td>35. US</td>
<td>0.51</td>
<td>0.21</td>
<td>35. US</td>
<td>0.52</td>
</tr>
</tbody>
</table>
Fig. 4: Winners and losers for the United States

- x1 - company age (domestic)
- x2 - company age (international)
- x3 - employees quality
- x4 - creativity
- x5 - scope
- x6 - size
- x7 - internationalisation
Fig. 2: Winners and losers for Great Britain

- $x_1$ - company age (domestic)
- $x_2$ - company age (international)
- $x_3$ - employees quality
- $x_4$ - creativity
- $x_5$ - scope
- $x_6$ - size
- $x_7$ - internationalisation
Fig. 3: Winners and losers for France

x1 - company age (domestic)

x2 - company age (international)

x3 - employees quality

x4 - creativity

x5 - scope

x6 - size

x7 - internationalisation
Fig. 4: Winners and losers for the three countries

x1 - company age (domestic)

x2 - company age (international)

x3 - employees quality

x4 - creativity

x5 - scope

x6 - size

x7 - internationalisation
References

Advertising Age (1979), “The top advertising agencies” 17 April


Advertising Age (1994), “World top advertising agencies” 13 April


41


Ergas H. (1984), "Why do some countries innovate more than others?" Paper no. 5, Brussels, Centre for European Policy Studies


Fox S. (1984), The Mirror Makers New York, Morrow

Hu Y. S. (1992), “Global or stateless corporations are national firms with international operations” California Management Review Winter, 107-126


Lundvall B. A. (1992), National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning Pinter, London


Ogilvy D. (1963), Confessions of an Advertising Man, New York, Atheneum


UNCTC (1990), *Transnational Corporations, Services and the Uruguay Round Table*. New York, United Nations


Yao Y. (1965), “An approximate degrees of freedom solution to the multivariate Behrens-Fisher problem” Biometrika vol. 52, 139-147


APPENDIX
Appendix. Test of Significance of Discriminant Analyses

The test is based on the assumptions that the vector of ownership advantages \( X=X_1,\ldots,X_7 \) follows a multivariate normal distribution, with means corresponding to the number of cases (\( m_1, m_2, m_3 \), in the analysis of US, UK and French agencies, and \( m_1 \) and \( m_2 \) in the analysis of European vs US agencies). The dispersion of the vector must be invariant over these populations, that is, the means may differ among the populations, but not the covariance matrix.

Under these assumptions, it is possible to determine precisely the number of discriminant variables which should be taken into account, using a test of the \( q \) last ratios of correlation of the population. The Bartlett’s test procedure (Srivastava and Carter 1983) is based on the statistics:
\[
L_1 = 1-(r_1)^2 \quad \text{and} \\
L_2 = (1-(r_1)^2)(1-(r_2)^2) \quad \text{(the so-called ‘Wilk’s lambda’)}
\]
in the analysis for the US, the UK and France, and on the statistics:
\[
L_1 = 1-(r_1)^2 \\
L_2 = (1-(r_1)^2)(1-(r_2)^2)
\]
in the analysis for Europe and the US, where \( (r_1)^2 \) and \( (r_2)^2 \) are the sample ratios of correlation with \( Z_1 \) and \( Z_2 \) respectively in the first analysis, and \( (r_1)^2 \) is the sample ratio of correlation with \( Z_1 \) in the second analysis. The more these variables possess discriminatory power, the smaller the \( L_q \) tend to be.

The null hypothesis is that the ratios of correlation of the populations are zero. If the null hypothesis is rejected, it implies that the \( Z \)s have discriminatory power between the groups analysed. The null hypothesis is rejected for small values of \( L_q \).

Under the null hypothesis the statistic \( C_q = \{n-1-(p+k)/2\} \ln(L_q) \) follows approximately a chi-square distribution with \( q(p-k+q+1) \) degrees of freedom, where \( p \) is the number of variables (7 in our case) and \( k \) is the number of groups (3 in the first analysis and 2 in the second). The results of the calculation of these statistics on our sample are shown in the Table.

49
<table>
<thead>
<tr>
<th>US, UK and French agencies</th>
<th>European and US agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>q</td>
<td>Lq</td>
</tr>
<tr>
<td>1</td>
<td>0.97</td>
</tr>
<tr>
<td>2</td>
<td>0.47</td>
</tr>
</tbody>
</table>

The results imply that in the analysis with three countries Z2 is not significant (p value = 0.99 for q=1), whereas Z1 and Z2 together are significant only at the 8% level. In the second analysis, Z1 is significant at the 1% level. Most important, Z1 is more significant in the analysis of European vs US agencies than in the analysis of US, UK and French agencies, which implies that the set of ownership advantages used in the analyses differs more between the former than among the latter.