

***THE ECONOMIC GEOGRAPHY OF OFFSHORING:  
THE FIT BETWEEN ACTIVITIES AND LOCAL CONTEXT***

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**Abstract**

We draw from the literature on economic geography and from the thematic offshoring literature, and propose three hypotheses that rest on the assumption that the choice of offshoring location is based on the fit between the attributes of different destinations and the attributes of the offshored business activities. The study reveals a multi-faceted location pattern in which firms' location strategies, to some degree, follow a logic whereby manufacturing is relocated to low-cost destinations, and research and development is relocated to high-cost destinations. However, the picture is more nuanced when distinguishing between standardized and advanced activities. Asia attracts as many advanced activities as Western Europe while North America attracts more advanced activities even in manufacturing. Central and Eastern Europe attracts offshoring in manufacturing and IT, but the activities that are offshored to these regions are typically not advanced. One important theoretical implication of this study is that a more detailed understanding of the nature of offshored activities is needed, since such attributes appear to be an important determinant of location choice.

**Keywords:** Offshoring, offshore outsourcing, business strategy, global integration, location.

## INTRODUCTION

The increasing cross-border integration of formerly sheltered and, at times, isolated national economies may be viewed as a result of several co-evolutionary forces. These include international trade liberalization, deregulation and the dismantling of trade barriers among nations, and technological advances in IT, digital communication and transportation. Over the past 25 years, this evolution has dramatically changed the world economy. Foreign direct investment (FDI) outflows from investor countries have increased from USD 28 billion in 1982 to USD 1,216 billion (in current prices) in 2006 (UNCTAD, 2007).

Today, economic cross-border transfers do not merely include final goods and services, but increasingly encompass the exchange of knowledge, people and various intermediate activities in the value chain. These exchanges are outcomes of the disaggregation, relocation and reintegration of activities and business processes across borders, also known as *offshoring*. While offshoring, as such, is not a new phenomenon (the offshoring of manufacturing to low-cost countries dates back several decades), it has taken a new turn in the past decade. Offshoring is no longer confined to manufacturing but includes a wide range of services, such as various types of IT services, financial services, and customer service centers. As emphasized by Kenney et al. (2009), "...the scale, scope, and sophistication of the services that low-wage developing nations provided globally by the 21<sup>st</sup> century would have been unthinkable as recently as 15 years ago" (Kenney et al., 2009, p. 887). Increasingly, offshoring covers new services as well as more advanced and high-end business activities (Lewin et al., 2009; Lewin and Peeters, 2006; Manning et al., 2008).

With the opening of national markets in emerging economies, including the markets of the major emerging economies in the BRIC (Brazil, Russia, India, China) group, firms have many more options when choosing locations for activities outside their home market than they had 15-20 years ago. However, despite the increasing variety in the location options, offshoring firms appear to be more attracted to some locales than others. Some local contexts appear more conducive of agglomeration

effects than others. Depictions of India as “the back-office of the world” and China as “the factory of the world” are well known stereotypes. However, evidence regarding the location choices of MNCs show that the global offshoring strategies of firms go beyond such stereotypes.

For example, the Danish wind turbine producer Vestas, is a global industry leader with a commanding 25% share of the world market. By 2009, the firm had established a global R&D network with R&D centers in Denmark, the UK, Singapore, Chennai, India and, most recently, the US. Each of these local contexts is favorable for different reasons and each is a hotspot for a different field of knowledge (software knowledge in India, energy knowledge in the US, system knowledge in Denmark, etc.). The globalization of Vestas’s R&D activities reflects the firm’s endeavors to access technological centers around the world as it undertakes a global search for talent. In addition to internally generated research, all research centers are engaged in local networks with external research centers and universities. Furthermore, in terms of the globalization of Vestas’s R&D strategies, the research centers can serve as important assets in terms of market access. For example, the research center in Singapore created a gateway to the increasingly important Chinese market. In the same vein, the recently established research center in Houston, Texas is expected to provide Vestas with a closer connection to the large US market. As this example shows, the offshoring of R&D may involve multiple strategic objectives and may be based on their fit with the context-specific advantages offered by different locations.

In this article, we investigate the relationship between the attributes of offshoring destinations and the location choices made by offshoring firms. Using a large-sample survey of firms located in Denmark, we analyze the location choice for the offshoring of specific business activities (e.g., manufacturing, IT, administrative back-office services and R&D), and examine whether and how these choices match the attributes of the chosen destinations. Although some recent contributors have addressed the issue of location choice and offshoring destination attributes from a theoretical perspective (e.g. Graf and Mudambi, 2005; Stringfellow et al., 2008) and in empirical studies (e.g. A.T. Kearney, 2007; Deloitte, 2004), research on offshoring that combines theoretical rigor with empirical estimation is relatively

scarce (Nassimbeni and Sartor, 2008). Some authors have addressed the importance of local contexts in offshoring research (Doh et al., 2009; Zaheer et al., 2009), but there is, for example, “little exploration of how differences among services tasks influence offshore location choice” (Doh et al., 2009, p. 939). Much of the recent offshoring literature focuses on the home country or the offshoring firm, while limited consideration is paid to the local context of the offshoring destinations (Jensen, 2008). We draw on two main strands of literature – economic geography and the thematic literature on offshoring – to address the connection between the offshoring strategies of firms and the contextual attributes of the offshoring locations. This is the gap in the literature that the current paper aims to fill.

The article contributes new insights on the location strategies of multinational firms. We show that offshoring for a firm based in a high-cost country is a multifaceted process of value chain disaggregation. Business activities are offshored to high-cost and low-cost contexts. Determination of which business activities are to be offshored to which destinations is contingent upon the fit between the nature of the activity and the advantages offered by the particular local context. For example, low-cost locations in Asia are able to attract advanced, high-value activities due to the availability of highly skilled staff. Furthermore, while the offshoring of manufacturing has long been driven by the cost-seeking motive, some more advanced manufacturing activities are still offshored to the high-cost North American region, where the US and Canada offer a set of knowledge-specific advantages that outweigh cost considerations. Therefore, we argue that offshoring must be analyzed on a relatively detailed level, since firms’ offshoring strategies are the outcome of a complex set of interactions among several determinants: firm characteristics, the nature of the specific business activity and local context-specific factors.

Section two surveys the literature on offshoring and its links with literature streams on international business and economic geography. It also outlines the attributes of different offshoring destinations. This review forms the basis for the development of three hypotheses, which are tested empirically. The methodology is outlined in section three. Section four presents the study’s empirical findings, before the results are interpreted in greater detail in the final section.

## **LOCATION CHOICE FOR THE OFFSHORING OF FIRM ACTIVITIES**

### **The Importance of Location**

Although the location dimension of firm activity is a classic theme, the surge in the offshoring of manufacturing and services activities over the past decade indicates that it is still necessary to understand the importance of the location dimension. Dunning (1998) argued that despite the long history of “location” in research, the location of activities and investments by MNCs had become a “neglected factor” in international business research, and that it needed far more attention. In recent years, several contributions have highlighted new opportunities for firms to move business activities offshore (Farrell, 2005), finding that firms were likely to move business processes across borders on a far greater scale than in the past, especially to low-cost destinations (Gereffi, 2006). Kogut stressed the importance of location, stating that “the globalization of markets, and rapid changes in economic and political systems, has forced a re-thinking of the meaning of location, of competitive advantage, and of the transmission of knowledge among countries” (Kogut, 2002, p. 261).

In the “diamond” model of national competitive advantage, Porter argues that the competitive advantages held by firms in a particular country are determined by certain attributes unique to that location. Porter stresses the long-term sustainability of these attributes and notes that the diamond “...is slow and extremely hard to replicate. Once one nation has it, the cost of entry rises substantially” (Porter, 1990, p. 163). Using data from the US, Mithas and Whitaker (2007) show that, contrary to expectations, employment in certain types of IT work, which was considered particularly prone to offshoring, has risen in the US rather than declined. The authors conclude that this is probably the result of tacit components of the activities that make the knowledge “sticky”, as it is tied to persons and, therefore, to locations (Mithas and Whitaker, 2007). Similar arguments are a recurrent theme in the literature on clusters (see e.g. Andersen, 2006; Florida, 2005), which is part of a large body of empirical evidence showing that location-specific factors continue to play a crucial role. For example,

Mudambi points out that “firms are increasingly implementing strategies to take advantage of the comparative advantages of locations” (Mudambi 2008, p. 702).

### **Determinants of the Attractiveness of Offshoring Destinations**

Dunning and Narula (1996) sought to introduce a dynamic element into the theory of international production with their *investment development path* (IDP) model. The IDP model outlines five stages of a country’s economic development from the first stage, where the economy is primarily based on natural resources, to stages four and five, where the country’s economy is developed into a knowledge-based economy with increasing knowledge and service intensity. Dunning and Narula’s IDP model assumes that as a country develops, the configuration of the advantages of ownership, location and internalization (ODI) facing foreign-owned firms that might invest in that country and of the country’s own firms that invest overseas changes over time. In the context of offshoring, the IDP model implies, for example, that firms will mainly look for destination countries that are in the later stages (four or five) of economic development when they offshore advanced, high-end activities, and for countries in earlier stages when they offshore relatively simple, standardized activities.

Graf and Mudambi (2005) expand Dunning’s (Dunning, 1988; Dunning and Lundan, 2008) location framework of infrastructure, country risk and governmental policy to reflect location decisions for IT-enabled business processes. Given the nature of business processes in the IT domain and the need for skilled labor, Graf and Mudambi add a human capital dimension as well as two categories of moderating factors (firm-specific factors and situation-specific factors). Along a similar vein, Kedia and Mukherjee (2009) build on the eclectic OLI paradigm (i.e. that foreign direct investment decisions of MNCs are shaped by advantages related to, respectively, ownership, location and internalization, see Dunning and Lundan, 2008) to develop a theory that can explain why firms embark on offshoring. Kedia and Mukherjee (2009) suggest that a combination of disintegration-related advantages, externalization advantages and location-specific advantages spurs the growth of offshoring. The latter factor is composed of country-level advantages, human capital advantages, labor arbitrage advantages and knowledge arbitrage advantages.

The key point is that the location choices made by offshoring firms will be influenced by a range of factors within the host country and by the relative importance of these factors to the offshoring firm. With the exception of the contributions discussed above, the literature on offshoring location choice is relatively sparse. However, it does include a number of authors that have developed similar frameworks or taxonomies that cover the most important local features that attract foreign investors and offshore work (Bajpal et al., 2004; Carmel, 2003; Couto et al., 2006; Heeks and Nicholson, 2004; Nassimbeni and Sartor, 2008), assess how domestic investments in human capital, infrastructure and the business environment may further a country's export of services and goods (Contractor and Mudambi, 2008), and provide a theoretical model for assessing the "interaction distance" between onshore and offshore locations, a model that comprises the geographical, language and cultural factors that influence the relative ease or difficulty of collaboration among these locations. (Stringfellow et al., 2008). Based on this literature, we have grouped a range of relevant location attributes under four headings – cost levels, human capital, business environment and the interaction distance between onshore and offshore locations (see Table I).

In addition, a series of studies by consulting firms have characterized and ranked a wide range of countries to identify the most attractive destinations for FDI, services offshoring, manufacturing offshoring or the offshoring of other activities (AT Kearney, 2004, 2005, 2007; Deloitte, 2004). The findings of these studies, combined with other studies and statistical data on the attributes of various locations (European Commission, 2005; Eurostat, 2008; Porter and Schwab, 2008) are condensed and summarized in a qualitative assessment of the location attributes of four different regions: Western Europe (EU15), Central and Eastern Europe (CEE), North America, and emerging countries in Asia (see Table I). We use a three-level scale to describe the attributes of the countries in the various regions (i.e. low/medium/high or poor/medium/good).

\*\*\* INSERT TABLE I ABOUT HERE \*\*\*

Table I provides an overview of the attributes of the countries in the various regions and characterizes each of these regions. At the same time, it highlights some of the differences between these locations. In the following section, we use these location attributes to formulate hypotheses about the abilities of the different locations to attract business activities that are offshored. The over-arching hypothesis of the study is that the degree of fit between the attributes of specific business activities (representing the demand side in our model) and the attributes of various locations (representing the supply side) will determine the business activities that are offshored to certain locations. By matching the business activity attributes with the location attributes, we are able to explain why some business activities are offshored to certain locations but not others.

### **Hypothesis Development**

In the 1960's, offshoring took off as a research field in international business literature. The studies undertaken by Buckley and Pearce (1979) and Stopford and Wells (1972) are classic contributions in the field and showed, among other things, how US MNCs offshored labor-intensive manufacturing processes to low-cost production zones in developing countries.

While these authors shared the view that cost minimization is the primary objective of offshoring, more recent international business models point out that MNCs use their international reach to generate a location-based competitive advantage that might not only grow out of unique assets and knowledge, but also out of low costs (Cantwell and Mudambi, 2005; Dunning, 1998). Technological advances, especially in the areas of information and communication technology, have enabled companies to disaggregate their activities into progressively smaller segments and eventually offshore more tasks. Factors other than cost advantages are at play and strategic motives, such as access to human resources and new (emerging) markets, are important in many cases. These two strategic motives are especially important in Asia and CEE, where regional markets are attractive targets for advanced economy firms. These markets have shown double-digit growth rates for several decades in the wake of economic reforms and liberalization far beyond what has been seen in advanced economies. Access to skilled workers is important for the offshoring of manufacturing activities to

CEE, where general skill levels are comparable with the EU15 and, in some cases, the proportion of educated people in the younger population segments is higher than in the EU15 countries (measured as the share of the population with at least an upper-secondary education qualification; European Commission, 2005, p. 291). Nevertheless, cost advantages are often a prominent motive when initiating offshoring, particularly when offshoring manufacturing (e.g. Farrell, 2005; UNCTAD 2004). Mudambi notes that “under the current location pattern, high value-added activities are largely performed in advanced market economies, with low value-added activities performed in emerging market economies” (Mudambi, 2008, p. 702). In view of the apparent durability of the cost saving motive as the primary strategic driver behind the offshoring of manufacturing activities, we formulate the following hypothesis.

*H1: The offshoring of manufacturing flows to low-cost destinations (Asia and CEE).*

The offshoring of R&D has an important spatial dimension. A decade ago, Dunning (1998) observed that the most significant change in the motives for FDI since the 1980s had been the rapid growth of strategic asset-seeking FDI. Although such FDI is similar in intent to that of natural-resource seeking investments in earlier times, its location needs are likely to be quite different (Dunning, 1998, p. 50). Dunning (1998) also notes that the assets sought, in terms of technical knowledge, learning experiences, management expertise and organizational competence, tend to be concentrated in advanced industrial countries or the larger developing countries. Porter’s (1990) “diamond” – a set of interrelated factors that determine the national competitive advantage – is another way of characterizing a nation’s location-specific advantages. To some extent, knowledge, skills and other input factors are location-specific and sticky, and firms must be present in these areas to tap into these resources.

Traditionally, advanced economy countries have been the preferred locations for advanced business activities. This pattern may be changing, since the geographical location of advanced business activities is the outcome of a dynamic process whereby firms from emerging economies strive to catch

up with advanced economy competitors (Mudambi, 2008). R&D activities are now being established in developing countries (Lewin and Couto, 2007; UNCTAD, 2005). However, a recent study (Bunyaratavej et al., 2007) argues that the dominant rationale is that firms do not offshore because they seek input factors that differ from those they have at home. Instead, firms look for similarities in inputs when they offshore (e.g. knowledge-intensive firms will look for advanced, knowledge-intensive inputs when offshoring, and not necessarily low labor costs). Furthermore, Doh et al. (2009) show that the location of offshored services depends on the mix of characteristics of a particular service – whether the particular type of service is “repetitive”, “interactive” or “innovative” (Doh et al., 2009, p. 934) – and the extent to which these attributes are reflected in the local context. In line with these arguments and the IDP model mentioned above, we expect the combination of knowledge, technology and capital to be more multifaceted and sophisticated in advanced, high-income economies than in emerging economies or developing countries. Hence, we propose the following hypothesis.

*H2: The offshoring of R&D flows to destinations with a substantial knowledge base (North America).*

Over the past decade, the surge in the offshoring of IT (software development, programming and other IT-enabled services) in particular has been the centre of attention. The shortage of skilled labor, particularly the shortage of science and engineering graduates in the US and Europe, is driving the current wave of services offshoring (Manning et al., 2008). Furthermore, some emerging nations have a large pool of highly skilled workers with specific competences in various technology domains (Farrell et al., 2006). As reflected in Table I, India has become the preferred location for the offshoring of IT work due to its unique combination of high skills and low costs. The other Asian giant, China, is also highly ranked as a location for offshored IT and other services (A. T. Kearney, 2007). However, other Asian countries too, such as Pakistan, the Philippines, and countries in CEE, are attracting a broad range of offshored administrative services, including financial services, payroll administration and bookkeeping (Bunyaratavej et al., 2008; Lewin and Couto, 2007). We therefore we propose the hypothesis:

*H3: The offshoring of IT and other types of administrative services flow to destinations with available talent pools (Asia, CEE).*

## **METHODOLOGY**

### **Data Compilation and Sample Characteristics**

Recent literature on offshoring is, to a large extent, focused on offshoring from English-speaking countries, notably the US and the UK, to low-cost destinations in Asia, mainly China and India (see Jensen, 2008, for a review of the literature). Our data set consists of a large sample of firms located in Denmark (indigenous and foreign-owned firms). The study may, therefore, contribute perspectives that differ from the predominant Anglo-Saxon bias in the offshoring literature: The Danish economy is closely tied to the international economy and is thus subject to global economic flows and trends, including offshoring trends. We can therefore view the Danish case as an example of how globalization develops in a small, open, European economy with a highly adaptive labor market, and a high level of internationalization in the manufacturing and service sectors. These features of the Danish economy introduce a context different from that seen in most previous studies on offshoring, while they also highlight one of the limitations of the study in terms of generalization outside the Danish context.

We have excluded outsourcing to domestic Danish firms from the analysis, and focused on the relocation of activities (i.e. activities rooted in Denmark prior to offshoring) to external partners or to foreign subsidiaries of the MNC network. The data was gathered through a survey of the total population of firms in the eastern regions of Denmark in the following sectors: manufacturing, utilities (electricity, gas and oil), transportation, financial services (banking, insurance) and business services. Firms in these sectors can offshore either their primary activities in the value chain or their secondary activities (e.g. administrative/back-office activities).

Firms with fewer than 10 employees are excluded from the sample, since offshoring is rarely an option for such small firms. This leaves a total population of 3,580 firms in the selected sectors. We contacted all firms four or five times by phone at regular intervals during the six-week data collection period (early summer 2005). In terms of the sector, geography and size of the firms, we believe the sample to be highly representative of the population of firms. In total, we obtained usable responses from 1,504 firms, which gives a response rate of 42%. However, only 22% of these firms have made offshoring location decisions, i.e. had decided during the three-year period (2002-2005) to move an activity abroad that was previously performed in Denmark. Furthermore, we were unable to establish a link between the location and the offshored activities in all cases, so our final sample is composed of 207 usable observations that provided full information about firm characteristics, the nature of the offshored activities and the offshoring location. These 207 firms is then the sample on which we conduct the statistical analysis and test the proposed hypotheses. For each firm, we have data on the most important offshoring venture of the period 2002-2005. This implies that some of the offshoring ventures in the sample are made by firms that have more offshoring experience than others. In the statistical tests, we control for this variation in offshoring experience.

Each firm has a unique identification number provided by the Danish Commerce and Company Agency, a government body. Using this identification code, we linked the survey data for each firm to individual firm data in official databases. This allows us to broaden the analysis to include key figures and accounting information, such as return on equity and capital investments. Furthermore, this combination of primary data (survey data) and secondary data (official firm statistics) makes the problem of common-method bias less of an issue.

Some descriptive characteristics of the sample are provided in Appendix 1 and Table II. Table II offers the firm's own assessment of its motives for offshoring to the various locations. We distinguish between three main motives (cost, market and knowledge seeking) measured on a five-point Likert scale. This initial description of the data results in the traditional, expected pattern – Asia and CEE

stand out as low-cost destinations, while North America has the highest score for knowledge seeking. However, this basic analysis is further enhanced by our in-depth examination of the data.

\*\*\* INSERT TABLE II ABOUT HERE \*\*\*

### **Operationalization of Variables**

The firms that have conducted offshoring were asked to specify which activities were offshored and to which locations.

Location was operationalized as a measure of whether the activity was offshored to Western Europe, CEE, North America or Asia. Since each firm only was only asked about the most important offshoring venture, these locations are mutually exclusive. The variable *location* was measured as a categorical variable taking the value Western Europe, CEE, North America or Asia, depending on the location of the offshored activity.

The offshoring of *manufacturing* was measured as a dummy variable that took the value 1 if the firm indicated that during 2002-2005 it had moved manufacturing activities abroad that were previously performed in Denmark.

In a similar way, *R&D* offshoring was measured as a dummy variable taking the value 1 if the firm had offshored activities involving product development and R&D. *IT* offshoring was similarly measured as a dummy capturing the offshoring of IT programming and IT development. *Back-office* offshoring took the value 1 if the firm had offshored call centers, financial services, bookkeeping or HRM activities. Of the 207 firms in the sample, 115, 25, 37 and 30 firms indicated that they had offshored manufacturing, R&D, IT services, and back-office services, respectively.

Furthermore, we asked the respondents to indicate how advanced the offshored activities were. We measured the level of advanced task offshoring on a five-point scale, where the lower end of the scale

indicated that the offshored activities were (standardized and) non-advanced and the higher end indicated that the offshored activities were highly advanced. The variable *advanced* was measured on this five-point scale in order to indicate the complexity of the offshored activities – the higher the value, the more advanced (e.g. creative and innovative) the activities.

In addition, we created four interaction variables by multiplying the four dummies for offshored activities (manufacturing, R&D, IT and back office) with the advanced activity variable. These interaction variables were created to measure the extent to which standardized versus advanced activities are offshored for manufacturing, R&D, IT and back office.

A number of control variables were added, mostly to cover different firm characteristics. Some of these variables captured the resources of the firms, as firms with more resources might offshore not only more activities but also more advanced activities. These variables include whether the firm is a multinational company, the size of the firm, the offshoring experience of the firm, and whether the firm has international sales. Capital intensity was then added to control for the capital/labor ratio in the firm, while the return on equity (ROE) in 2000 (i.e. prior to the offshoring event) helped to capture whether the firm at the time was low performing and bleeding, or well-performing firms, as this might affect the subsequent pattern of offshoring. Finally, we control for whether the offshored activity is a captive offshoring (i.e. offshore outsourcing), and whether the firm is a service or manufacturing company.

The operationalization and exact wording of all the variables capturing multinationality are given in Table III.

\*\*\* INSERT TABLE III ABOUT HERE \*\*\*

The correlation matrix for all variables is shown in Appendix I, including descriptive data on each variable (i.e. mean, standard deviation, minimum, and maximum values). None of the independent

variables are correlated at a level where one expects problems of multicollinearity, with the exception of interaction effects, which was expected. A number of alternative specifications for the model were tested, but the results were consistent, indicating that multicollinearity is not a major problem in this model.

## **RESULTS**

In order to test the hypotheses on the offshoring of different activities (H1-H3), a model of multinomial regression was applied with the categorical variable location (Asia, CEE, North America or Western Europe) as the dependent variable. Western Europe was used as the baseline since this is the extended home market for Danish firms – the region with least liability of foreignness for Danish firms. The implication is that the parameters in the model must be interpreted relative to the baseline of Western Europe.

This model allows us to explore the location pattern of offshoring on a more nuanced level. It includes interaction effects that capture the nature of the offshored activity, while controlling for a number of other factors that might determine the location pattern of offshoring.

The results of the multinomial regression for the three locations (compared with the baseline of Western Europe) are shown in Table IV. In terms of the main effects for manufacturing, R&D, IT and back office activities, we find that manufacturing is, to a larger extent, located in CEE (than in Western Europe), R&D activities are more often located in North America and IT activities tend to seek locations in Asia and CEE. One might say that these results, to some extent, support our hypotheses in the sense that H1 argued for manufacturing flowing to Asia and CEE. This is confirmed for CEE (coefficient: 2.26,  $p < 0.05$ ), but not for Asia. H2 argued for R&D flowing to North America, which is marginally supported (coefficient: 0.61,  $p < 0.10$ ). Finally, H3 proposed that IT and back-office activities tend to flow towards Asia and CEE. This hypothesis is confirmed for IT activities (coefficients of 3.21 and 3.22, respectively, and  $p < 0.05$  for both), but not for back-office activities.

However, the more interesting findings are related to the interaction with the variable *advanced*, as the interaction variables allow us to explore the types of activities within manufacturing, R&D, IT and back office that are offshored to each of these locations. The advanced variable alone (the main effect) is not significant, which indicates that there is not a general effect that cuts across all activities where some locations generally attract more advanced activities. However, the results indicate that locations attract advanced activities in some activities but not in others. This is in line with the Vestas case we presented in the introduction.

In terms of the results for main effects and interaction effects, we find that North America is not attracting more general manufacturing (main effect), but it is attracting more advanced manufacturing (coefficient: 1.40,  $p < 0.05$ ). Asia is not significantly different from Western Europe in terms of the offshoring of manufacturing. CEE attracts more manufacturing, but the activities it attracts are not particularly advanced.

For R&D activities, more offshoring is directed to North America. This is especially true for the more advanced R&D activities (coefficient: 1.52,  $p < 0.05$ ). The more advanced the R&D activities, the lesser likely it is that they will be relocated to CEE (coefficient: -0.71,  $p > 0.05$ ). However, Asia is not significantly different from Western Europe in terms of relocation.

IT services are, in general, offshored to Asia and CEE. However, the more advanced IT services are offshored to North America (coefficient: 2.80,  $p < 0.05$ ). For back-office activities, none of the locations differ from Western Europe in terms of offshoring, with one exception: more advanced offshoring seems to go to North America.

In general, North America is attracting many of the advanced activities in manufacturing, R&D, IT and back office, while Asia's offshoring seems to be comparable with Western Europe, although Asia attracts more IT activities. CEE seems to attract more of the less-advanced, standardized activities in R&D and, to some extent, in manufacturing and IT.

Most of the control variables are insignificant, indicating that they are not true determinants of location choice (see Table IV). However, a few exceptions are evident, all of which are related to offshoring to North America. Larger firms (proxy for resource availability) with a low capital/labor ratio and a preference for captive offshoring are more attracted to the location-specific factors found in North America. The fact that most control variables are insignificant or, at best, marginally significant supports the view that the nature of the offshored activities is highly influential in determining the choice of offshore location.

## **DISCUSSION**

In much of the recent offshoring literature, a focus on China and India dominates discussions on location choice. While the two countries are important, they are not the only offshoring destinations. Our data reveal a multifaceted pattern in which offshoring firms relocate business activities to different regions across the world. However, several researchers exclusively treat offshoring as a flow from developed, high-cost countries to low-cost destinations (see e.g. Blinder, 2006; Farrell, 2005). The fact that advanced countries, such as the US, are themselves offshoring destinations is largely overlooked. The spatial diversity in offshoring supports our view that firms' location strategies are shaped by the match between the demands of offshoring firms, the ability of local destinations to accommodate these demands and the nature of offshored activities.

Overall, the results show a trend similar to the trend highlighted in a recent study by Flores and Aguilera (2007). Flores and Aguilera found that US MNCs had expanded international activities well beyond the historically preferred regional locations, e.g. to locations in southeast Asia. Similarly, Danish firms have expanded their offshoring beyond the proximate "home" market in Western Europe. The offshoring of manufacturing (H1) is primarily aimed at low-cost destinations. Such offshoring, therefore, follows the classic cost or efficiency-seeking strategy. Although the emerging economies in Asia and in CEE represent low-cost destinations, the results indicate that CEE is the preferred destination for the offshoring of manufacturing from Denmark. This again highlights the

importance of proximate location – for firms based in Denmark, Eastern Europe offers a mixture of proximity and low costs. This was certainly the case for the Danish textile industry, where firms started splitting up the value chain in the late 1970s, initially moving manufacturing to southern Europe and then to Eastern Europe. Later, many firms moved further east, locating manufacturing in Asia. Today, nearly all textile manufacturing is conducted in Asia, while development, design, management and branding are kept in Denmark.

The expansion of the value chain of Danish shoe maker ECCO may illustrate how an efficiency-seeking offshoring strategy may evolve over time. Founded in 1963, ECCO established its first offshoring manufacturing operation in Portugal in 1984. However, with the expansion of the firm, the Portuguese operation was turned into a group R&D center, and different parts of the shoe manufacturing process were relocated to other countries. During the 1990s, the production of uppers and shoes was moved to low-cost, emerging economies – Indonesia, Thailand and Slovakia. Recently, China was added to this list. Activities at the Indonesian and Thai locations also include leather tanning. The key in ECCO's strategy for setting up new factories and increasing the division of labor among the existing factories is the ability to exploit location-specific advantages in terms of cheap and flexible labor, access to raw hides and knowledge on how to manage the production process.

Our results indicate that IT predominantly flows to Asia and CEE, while the more the advanced IT services go to North America. The strategy for the IT offshoring from Danske Bank, one of the largest banks in Northern Europe with more than 24,000 employees, shows how a firm in need of skilled personnel can tap into local labor market pools. Through a series of national mergers and acquisitions undertaken in the Danish financial market in the early 1990s, Danske Bank built up a large IT operation. Many of the bank's IT systems are products of its own development and act as important strategic assets for the firm. Both before and after the breakout of the financial crisis in 2007-08, the bank has required IT developers with skills that are hard to find on the desired scale in the Danish market. In early 2006, Danske Bank began scanning the Indian market for potential offshoring partners and, later that year, it engaged in an offshore outsourcing collaboration with ITC Infotech.

This collaboration has since grown to encompass a headcount of around 400 consultants working offshore. Other offshoring destinations in Europe had previously been considered, as such destinations would be more convenient, but none appeared to possess sufficient capacity to match the future labor requirements that might have to be met to continue international expansion. However, after the launch of the operations in India, Danske Bank also established IT development centers in Eastern Europe (in the Baltic countries), albeit on a much smaller scale. In this way, the bank is exploiting local pools of skilled labor in emerging markets in both Asia and Europe.

Again, however, the pattern becomes more nuanced when the distinction between less advanced and more advanced activities is taken into consideration. While North America is generally not a preferred destination for IT offshoring from Denmark, the opposite is true for the offshoring of advanced IT activities. For this particular type of activity, the North American region is an attractive destination for offshoring. LEGO Group, the Danish toy maker, is one striking example of the strategic rationale underpinning advanced IT offshoring to a partnering firm in the US. Some of LEGO's products include robotics and online games. To strengthen the firm's product range in the field of massively multiplayer online games, which was not historically a core capability for LEGO, the Danish firm engaged the Colorado-based firm NetDevil in 2007. NetDevil is a small, innovative game development company that specializes in the development and construction of massive, multiplayer online games. LEGO hopes to gain competitive advantage in this market by capitalizing on NetDevil's specialized capability in the field.

Contrary to expectations, other types of administrative back-office services do not flow to the two low-cost regions. In fact, the tendency when offshoring of back-office services seem to be similar across all four locations, with only North America sticking out in terms of the offshoring of more advanced back-office services. Some explanation for the seemingly sticky nature of administrative back-office activities can most likely be found in language barriers. Another explanations might be the fact that some firms include such activities in regional headquarters or shared services centers. In such a situation, for example, the Scandinavian region might play a role.

For the offshoring of R&D, the study shows the attractiveness of the North American region, lead by the dominant US economy, as expected. CEE, on the other hand, is not a preferred location for R&D. For CEE, this result is even more pronounced in terms of the more advanced R&D activities. Surprisingly, however, the data show that Asia is not negatively associated with the offshoring of R&D. Since the Danish trade relations with Japan are limited, agriculture aside, this means that offshored R&D is attracted not only by the advanced countries in Western Europe and the US but also by countries in Asia. One explanation of this surprising finding might be that access to talented, highly qualified personnel can now be found in Asian countries – or, as Lewin et al. (2009) put it, the race for talent drives companies to offshore some R&D activities to Asia rather than to the US or Europe.

The model includes a range of control variables. However, most of the control variables are not significant or marginally significant, and they have no impact on the choice of offshore location. The exceptions are the size of the firm and the propensity to choose captive offshoring, both of which point towards offshoring to North America. Notably, the control variable for offshoring experience (operationalized as the number of offshored tasks) is insignificant. This indicates that offshore location choices are not influenced by different levels of experiential learning, even though it is important to note that the strategies and behavior of offshoring firms, in general, may change over time as these firms gain more experience in the field (e.g. Jensen, 2009; Maskell et al., 2007). These results, therefore, support our overall suggestion that location choice is largely determined by the fit between the attributes of the business activity in question and the attributes of the local context receiving the offshored activities.

Our findings suggest that overall relocation flows only reveal the tip of the iceberg, since more nuanced results appear when the nature of the offshored activities is analyzed in more detail. Our study underpins the necessity of adopting more detailed approaches in offshoring research, approaches that are able to integrate this level of detail into operational constructs rather than general considerations on the nature of the business activities being offshored. For example, when

manufacturing activities are considered *en bloc*, it is difficult to explain why some manufacturing activities are offshored to North America while others are relocated to other destinations. The underlying pattern becomes clearer when a distinction between simple and advanced business activities is included. Even though our distinction is not fine-grained, it reveals a much more nuanced pattern than what is otherwise provided in the literature.

To some extent, the location choice for business activities seems to follow the logic depicted in the “smiley” of value creation (Mudambi, 2007), whereby standardized or modularized activities with a low degree of value-added are expected to be relocated to low-cost destinations, while high-value adding activities will remain in high-cost locations. Similarly, the IDP model (Dunning and Narula, 1996) offers some explanation of why certain offshoring destinations are able to attract certain types of foreign investments. However, although the results of our study comply with these theories to some degree, they can only partially explain the results. The results show that emerging markets in Asia have attracted standardized, low value-adding activities as well as some high value-adding activities within such diverse business activities as manufacturing, R&D and IT. The mixture of high value-added (advanced) activities and low value-added (simple) activities that are offshored to emerging markets in Asia does not entirely follow the prescriptions of the IDP model and the “smiley”.

## CONCLUSION

In this study, we analyze the links between the nature of offshored activities and the features of different destinations for offshoring. We draw on the literature on economic geography and the thematic offshoring literature, and we analyze three hypotheses regarding location choices for the offshoring of four distinct types of business activities: manufacturing, R&D, IT and administrative services.

While the cost-saving motive is a recurrent theme in the offshoring literature and frequently portrayed as the key determinant of the location choice when activities are offshored, we build our hypotheses on the assumption that an understanding of the choice of offshoring destination must include

consideration of how well a wide range of attributes, including cost levels, of different destinations fit with the attributes of the offshored business activities. The study shows that when attributes of offshored activities, such as whether the offshored activities are standardized or advanced, are included in the model, the explanatory power of the model increases.

This study also provides a more detailed picture of the location pattern of offshoring among Danish firms. Relative to Western Europe, North America attracts more advanced activities in manufacturing, R&D and services, while CEE attracts more manufacturing and IT, but these activities are generally less advanced. Surprisingly, the nature of the activities offshored to Asia is similar to the nature of the activities offshored to Western Europe. This indicates that the emerging markets of Asia are able to attract not only simple business activities but also advanced activities in manufacturing, IT and R&D. One important theoretical implication of this study is that a more fine-grained distinction and understanding of the nature of offshored activities is needed because the type of activity appears to be an important determinant of location choice.

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**Table I: Location Attributes of Offshore Destinations**

<b>Location attributes</b>	<b>Western Europe (baseline)</b>	<b>Eastern &amp; Central Europe</b>	<b>North America</b>	<b>Asia (emerging markets)</b>
1. Cost levels 1.1 Wages 1.2 Infrastructure costs 1.3 Tax and regulatory costs	1.1 High 1.2 High 1.3 High	1.1 Low/Medium 1.2 Medium 1.3 Medium	1.1 High 1.2 High 1.3 High	1.1 Low 1.2 Medium/High 1.3 Medium
2. Human capital 2.1 Education 2.2 Availability	2.1 Good 2.2 Medium/Low	2.1 Medium 2.2 Medium/Low	2.1 Good 2.2 Medium/Low	2.1 Medium 2.2 High
3. Business environment 3.1 Infrastructures 3.2 Regulation 3.3 Industrial context 3.4 Country risk	3.1 Good 3.2 Good 3.3 Good 3.4 Low	3.1 Medium 3.2 Medium 3.3 Medium 3.4 Low	3.1 Good 3.2 Good 3.2 Good 3.3 Low	3.1 Medium/Low 3.2 Poor 3.3 Medium 3.4 Medium/High
4. Interaction distance 4.1 Geographic 4.2 Language 4.3 Cultural	4.1 Low 4.2 Medium 4.3 Medium	4.1 Low 4.2 High 4.3 High	4.1 High 4.2 Low 4.3 Low	4.1 High 4.2 High 4.3 High

**Table II: Descriptive Statistics – Motives for Offshoring with Duncan Grouping**

	Western Europe	Asia	Central and Eastern Europe (CEE)	North America	<b>ANOVA F-value</b>
	Average value on a 5 point scale				
Lower labor costs	2.81 (B)	4.03 (A)	4.33 (A)	2.19 (C)	<b>25.18***</b>
Improve market position	2.41 (A)	2.46 (A)	2.27 (A)	2.75 (A)	<b>0.54</b>
Access to new competencies	2.16 (A,B)	1.71 (B, C)	1.43 (C)	2.67 (A)	<b>6.98***</b>

\*\*\* indicates a 0.1% significance level

**Table III: Operationalization of Independent and Control Variables**

<b>Variable</b>	<b>Operationalization</b>	<b>Data source</b>
Dependent variable		
Location	Categorical variable taking the value Asia, CEE, North America or Western Europe depending on the location of the offshored activity	Own survey
Independent variables		
Manufacturing	Dummy indicating whether manufacturing activities were offshored from 2002-2005 (value = 1)	Own survey
Research and development	Dummy indicating whether product development or R& D activities were offshored from 2002-2005 (value = 1)	Own survey
IT services	Dummy indicating whether IT programming or IT development activities were offshored from 2002-2005 (value = 1)	Own survey
Back office	Dummy indicating whether call centers, financial services, bookkeeping or HRM activities were offshored from 2002-2005 (value = 1)	Own survey
Advanced	Respondents asked to assess on a five-point scale how advanced the offshored activity was. The scale ranged from 1 = standardized to 5 = very advanced activity.	Own survey
Four interaction variables	Each of the four activity variables above (manufacturing, R&D, IT and back office) multiplied with the advanced variable	Own survey
Control variables		
Multinational company	Dummy indicating whether the firm is owned by another Danish or foreign firm (value = 1)	Own survey
Firm size	Logarithm of the number of employees in Denmark in 2000 (i.e. the size before eventual offshoring)	Firm data Statistics Denmark
Offshoring experience	A count measure of how many of the 12 activities a firm has offshored	Own survey
International sales	Dummy indicating whether the firm has any international sales (value = 1)	Own survey
Capital investment	Logarithm of assets per employees in 2000 (million DKK/employee) i.e. the capital-labor ratio	Firm data Statistics Denmark
Financial performance	Return on equity (ROE) in 2000 (i.e. prior to eventual offshoring)	Firm data Statistics Denmark
Captive offshoring	Dummy indicating whether the offshored activity is conducted within the boundaries of the MNC (value = 1) or outsourced	Own survey
Service firm	Dummy indicating whether the firm is mainly categorized as a service firm in the industry classification (value = 1)	Firm data Statistics Denmark

**Table IV: Multinomial Logit model on the Propensity to Offshore to Each Region  
(Western Europe is the baseline)**

	<b>DEPENDENT VARIABLE: LOCATION</b>			<b>Chi-square</b>
	Asia	Central and Eastern Europe	North America	
<b>ACTIVITY</b>				
- Manufacturing	0.32 (0.86)	2.26* (0.92)	1.74 (1.08)	<b>8.44*</b>
- Manufacturing * advanced	0.19 (0.27)	-0.23 (0.31)	1.40* (0.79)	<b>7.38†</b>
- Research & Development	-0.78 (1.69)	-0.65 (1.70)	0.61† (0.31)	<b>6.38†</b>
- R & D * advanced	-0.02 (0.40)	-0.71* (0.46)	1.52* (0.85)	<b>9.36*</b>
- IT	3.21* (1.69)	3.22* (1.83)	-2.52 (1.54)	<b>10.84**</b>
- IT * advanced	-0.47 (1.04)	-0.35 (1.08)	2.80* (1.36)	<b>6.92†</b>
- Back office	-0.08 (0.99)	0.97 (1.16)	-1.92 (0.93)	<b>0.84</b>
- Back office* advanced	-0.26 (0.32)	-0.31 (0.33)	2.67* (0.92)	<b>5.98†</b>
- Advanced	0.06 (0.21)	0.20 (0.24)	0.99 (1.17)	<b>1.52</b>
<b>Control variables:</b>				
- Multinational company	-0.14 (0.69)	-0.53 (0.73)	0.08 (1.28)	<b>1.57</b>
- Size	0.22 (0.17)	0.08 (0.16)	3.52* (1.60)	<b>6.38†</b>
- Offshoring experience	-0.11 (0.32)	-0.07 (0.37)	-2.81 (3.00)	<b>0.98</b>
- International sales	0.80 (0.76)	-0.13 (0.64)	-1.85† (0.94)	<b>4.89</b>
- Capital intensity	-0.06 (0.18)	-0.07 (0.17)	-2.45* (1.31)	<b>5.63†</b>
- Return on equity, 2000	0.05 (0.35)	0.06 (0.26)	-2.26† (1.21)	<b>3.89</b>
- Captive offshoring	-0.51 (0.64)	-0.28 (0.67)	2.56** (0.60)	<b>7.88*</b>
- Service firm	-0.35 (0.56)	-0.15 (0.55)	1.94† (0.72)	<b>3.63</b>
Intercept	-2.30 (2.15)	-1.06 (2.00)	0.33† (0.17)	<b>4.98</b>
N	<b>207</b>			
Likelihood Ratio	<b>395.07</b>			

\*\*, \* and † indicate 1%, 5% and 10% significance levels, respectively

### Appendix I. Correlation Matrix for All Variables (N=207)\*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.Manufacturing	1.00																
2. R&D	-0.16	1.00															
3. IT	-0.47	0.03	1.00														
4. Administrative services	-0.33	-0.02	-0.04	1.00													
5. Advanced tasks	-0.13	0.27	0.16	0.01	1.00												
6. Manufacturing* advance	0.75	-0.02	-0.35	-0.23	0.21	1.00											
7. R&D*advance	-0.18	0.89	0.02	-0.03	0.38	-0.04	1.00										
8. IT*advance	-0.35	0.05	0.74	0.01	0.46	-0.26	0.04	1.00									
9. Back office* advance	-0.21	0.02	0.05	0.67	0.34	-0.14	0.01	0.09	1.00								
10. Multinational Company	-0.31	0.17	0.05	0.28	0.02	-0.20	0.13	0.04	0.14	1.00							
11. Size	-0.05	0.06	0.07	0.08	0.05	-0.03	0.09	0.10	0.11	0.28	1.00						
12. Offshoring experience	-0.16	0.40	0.37	0.36	0.16	-0.04	0.31	0.30	0.39	0.17	0.11	1.00					
13. International sales	0.04	0.03	0.04	0.14	-0.03	0.05	-0.01	-0.02	0.09	0.12	0.09	0.05	1.00				
14. Capital intensity	-0.14	0.11	-0.04	0.03	0.02	-0.07	0.08	0.01	-0.06	0.22	0.25	-0.01	-0.02	1.00			
15. Return on equity, 2000	-0.02	0.02	0.01	-0.14	-0.05	0.02	-0.01	-0.16	-0.14	0.04	-0.17	0.01	0.11	-0.05	1.00		
16. Captive offshoring	-0.22	0.11	0.07	0.31	0.04	-0.12	0.07	0.01	0.24	0.74	0.18	0.22	0.06	0.17	0.02	1.00	
17. Service firm	-0.67	0.03	0.38	0.29	0.12	-0.53	0.07	0.29	0.18	0.21	-0.06	0.07	-0.03	0.01	-0.05	0.12	1.00
Mean	0.54	0.12	0.17	0.14	2.40	1.16	0.46	0.54	0.34	0.48	3.75	1.36	0.89	6.78	0.11	0.34	0.47
Std. Dev.	0.50	0.32	0.38	0.35	2.06	1.44	1.42	1.59	1.25	0.50	1.45	1.02	0.31	1.23	1.22	0.47	0.50
Min. values	0	0	0	0	1	0	0	0	0	0	0	0	0	3.27	-10	0	0
Max. values	1	1	1	1	5	5	5	5	5	1	9.54	9	1	11.5	3.02	1	1

\*All coefficients above |0.11| are significant at  $p > 0.05$