

The Economic Geography of Offshoring: The Fit between Activities and Local Context

Peter D. Ørberg Jensen and Torben Pedersen

Copenhagen Business School

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 attract 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.

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 US\$28 billion in 1982 to US\$1216 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

Address for reprints: Torben Pedersen, Centre for Strategic Management and Globalization, Copenhagen Business School, Porcelænshaven 24 B, 2000 Frederiksberg, Denmark (tp.smg@cbs.dk).

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 centres. As emphasized by Kenney et al. (2009), ‘... the scale, scope, and sophistication of the services that low-wage developing nations provided globally by the 21st century would have been unthinkable as recently as 15 years ago’ (p. 887). Increasingly, offshoring covers new services as well as more advanced and high-end business activities (Lewin and Peeters, 2006; Lewin et al., 2009; 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 (Meyer et al., 2011; this issue). 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 multinational corporations (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 per cent share of the world market. By 2009, the firm had established a global R&D network with R&D centres in Denmark, the UK, Singapore, Chennai, India and, most recently, the USA. Each of these local contexts is favourable for different reasons and each is a hotspot for a different field of knowledge (software knowledge in India, energy knowledge in the USA, system knowledge in Denmark, etc.). The globalization of Vestas’s R&D activities reflects the firm’s endeavours to access technological centres around the world as it undertakes a global search for talent. In addition to internally generated research, all research centres are engaged in local networks with external research centres and universities. Furthermore, in terms of the globalization of Vestas’s R&D strategies, the research centres can serve as important assets in terms of market access (Benito et al., 2011; this issue). For example, the research centre in Singapore created a gateway to the increasingly important Chinese market. In the same vein, the recently established research centre 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 analyse 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 (Rugman et al., 2011; this issue). 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 rigour with empirical estimation is relatively scarce (Nassimbeni and Sartor, 2008). Some authors have addressed the importance of local contexts in offshoring research (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 (Tallman and Chacar, 2011; this issue). 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 USA and Canada offer a set of knowledge-specific advantages that outweigh cost considerations. Therefore, we argue that offshoring must be analysed 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.

The section below 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 the next section. The study's empirical findings are presented, before we interpret the results 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 USA, 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 USA 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; McCann and Mudambi, 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 labour, 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, labour 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 (Meyer et al., 2011; Rugman et al., 2011). 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 (Bajpai 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).

Table I. Location attributes of offshore destinations

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

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 (A.T. 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).

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 1960s, 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 labour-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 grow not only out of unique assets and knowledge, but also out of the specific qualities of the location (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.

Hypothesis 1: 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 inter-related 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 labour 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.

Hypothesis 2: 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 labour, particularly the shortage of science and engineering graduates in the USA 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 propose the hypothesis:

Hypothesis 3: 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 USA and the UK, to low-cost destinations in Asia, mainly China and India (see Jensen, 2008, for a review of the literature). Our dataset 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 labour 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 were 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 3580 firms in the selected sectors. We contacted all firms four or five times by phone at regular intervals

Table II. Descriptive statistics – motives for offshoring with Duncan grouping

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

*** Indicates a 0.1% significance level.

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 1504 firms, which gives a response rate of 42 per cent. However, only 22 per cent of these firms have made offshoring location decisions, i.e. had decided during the three-year period (2002–05) 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. The sample on which we conduct the statistical analysis and test the proposed hypotheses comprises these 207 firms. For each firm, we have data on the most important offshoring venture of the period 2002–05. 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 the Appendix 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 5-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.

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 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 2002–05 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 centres, financial services, bookkeeping, or human resource management (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 5-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 5-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/labour 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, 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.

The correlation matrix for all variables is shown in the Appendix, 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

Table III. Operationalization of independent and control variables

<i>Variable</i>	<i>Operationalization</i>	<i>Data source</i>
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 2002–05 (value = 1)	Own survey
Research and development	Dummy indicating whether product development or R& D activities were offshored from 2002–05 (value = 1)	Own survey
IT services	Dummy indicating whether IT programming or IT development activities were offshored from 2002–05 (value = 1)	Own survey
Back office	Dummy indicating whether call centres, financial services, bookkeeping, or HRM activities were offshored from 2002–05 (value = 1)	Own survey
Advanced	Respondents asked to assess on a 5-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/labour 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

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 (Hypotheses 1–3), 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 Hypothesis 1 argued for manufacturing flowing to Asia and CEE. This is confirmed for CEE (coefficient: 2.26, $p < 0.05$), but not for Asia. Hypothesis 2 argued for R&D flowing to North America, which is marginally supported (coefficient: 0.61, $p < 0.10$). Finally, Hypothesis 3 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.

Table IV. Multinomial logit model on the propensity to offshore to each region (Western Europe is the baseline)

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

Notes: **, * and † indicate 1%, 5% and 10% significance levels, respectively.

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/labour 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 USA, 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 (Hypothesis 1) 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 shoemaker 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 centre, 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 labour among the existing factories is the ability to exploit location-specific advantages in terms of cheap and flexible labour, 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 labour 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 labour 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 centres in Eastern Europe (in the Baltic countries), albeit on a much smaller scale. In this way, the bank is exploiting local pools of skilled labour 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 USA. 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 explanation might be the fact that some firms include such activities in regional headquarters or shared services centres. 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 USA 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 USA 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 behaviour 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 analysed 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. This distinction also relates to a current theoretical discussion on the location pattern and organization of the activities of MNCs. This discussion spans the boundaries of international business, economics, and economic geography and identifies a trend emerging among MNCs, where firms 'slice' their value chain activities more finely and seek to find optimum locations for each closely defined activity and optimum governance mode for this activity in a specific location (Buckley, 2009; Buckley and Ghauri, 2004; Grossman and Rossi-Hansberg, 2008; Mudambi, 2008). Too our knowledge, our data are among the first to empirically reflect this trend of fine-slicing of the firm value chain (see Beugelsdijk et al., 2009, for a related empirical study) as we slice the activities in two dimensions: the nature of the activities itself (manufacturing, R&D, IT, back-office) and the extent to which these activities are advanced (or standardized).

To some extent, the location choice for business activities seems to follow the logic depicted in the 'smile 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 'smile'.

CONCLUSION

In this study, we analyse 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 analyse 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 the choice of offshoring destination is based on the fit between a broader range of location attributes and attributes of the offshored business activities. Hence, the first hypothesis (Hypothesis 1) expects that the offshoring of manufacturing is relocated to low-cost destinations. Hypothesis 2 expects that the offshoring of R&D flows to destinations with a substantial knowledge base, while Hypothesis 3 expects that the offshoring of IT and other types of administrative services flow to destinations with an abundant supply of human skills and talent accessible by foreign firms. We test the hypotheses through a multinomial

regression model with location choice as the dependent variable. It shows some support for Hypothesis 1 (where manufacturing activities tend to be offshored to CEE), and support for Hypothesis 2 (where R&D mainly flows to North America). The analysis shows support for Hypothesis 3 regarding the relocation of IT (destined for locations in Asia and the CEE), while other types of administrative services are offshored to a range of different locations.

While these results, to a large extent, follow the expected pattern, we have included an additional dimension in the analysis in order to understand better the role of the nature of the business activity as a determinant in offshoring location choices. We distinguish between relatively simple and standardized activities on one side and relatively advanced activities on the other across manufacturing, R&D, IT, and administrative services, the logic being that it might be how advanced the activities is (standardized vs. advanced) rather than which activity is offshored (manufacturing, R&D, IT, and administrative services) that influence the location choice. It could be that some destinations have a tendency to attract more advanced activities versus standardized activities across functions rather than manufacturing activities versus IT activities, etc.

Interestingly, the explanatory power of the model increases when including the variable on how advanced the offshored activities are. In addition, a more nuanced pattern of location choice appears for several activities. 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 more standardized (and less advanced). Surprisingly, the nature of the activities offshored to Asia is similar to the nature of the activities offshored to Western Europe (in terms of how advanced they are). This indicates that the emerging markets of Asia are able to attract not only standardized business activities but also advanced activities in manufacturing, IT, and R&D.

One important theoretical implication of this study emerges from the application of the distinction between standardized activities and advanced activities. The adoption of a more detailed perspective on the attributes of the specific value chain activity greatly influences the results and provides a more nuanced portrait of offshoring location choices. This suggests that a more fine-grained distinction and understanding of the nature of offshored activities is needed as this appears to be an important determinant of location choice. Our distinction between standardized activities vs. advanced activities applied here is but one approach and there may be several alternative approaches to characterize the nature of offshored activities. In this respect it is interesting to note that although previous research on offshoring rarely has taken the attributes of the disaggregated value chain activities into consideration (Jensen, 2008), some recent contributions in offshoring research have begun exploring this question and consider how the specific attributes of the offshored activities relate to different aspects of offshoring, including location choice (Buckley and Ghauri, 2004; Jensen, 2009; Kumar et al., 2009; Mudambi, 2008; Pyndt and Pedersen, 2006; Sako, 2006; Stringfellow et al., 2008). Our study builds on these contributions and seeks to advance a research agenda that investigates the globalization of the firm value chain at a more disaggregated level where the nature and attributes of the activity are taken into account.

APPENDIX: 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

Note: * All coefficients above |0.11| are significant at $p > 0.05$.

REFERENCES

- Andersen, P. H. (2006). 'Regional clusters in a global world: production relocation, innovation and industrial decline'. *California Management Review*, **49**, 101–22.
- A.T. Kearney (2004). *Making Offshore Decision: A. T. Kearney's 2004 Offshore Location Attractiveness Index*. Chicago, IL: A.T. Kearney.
- A.T. Kearney (2005). *FDI Confidence Index*. Chicago, IL: A.T. Kearney.
- A.T. Kearney (2007). *Offshoring for Long-Term Advantage: The 2007 Global Services Location Index*. Chicago, IL: A.T. Kearney.
- Bajpai, N., Sachs, J. D., Arora, R. and Khurana, H. (2004). *Global Services Sourcing: Issues of Cost and Quality*. Working Paper No. 16, Center on Globalization and Sustainable Development, Columbia University, New York.
- Benito, G. R. G., Lunnan, R. and Tomassen, S. (2011). 'Distant encounters of the third kind: multinational companies locating divisional headquarters abroad'. *Journal of Management Studies*, **48**, 373–94.
- Beugelsdijk, S., Pedersen, T. and Petersen, B. (2009). 'Is there a trend towards global value chain specialization? An examination of cross border sales of US foreign affiliates'. *Journal of International Management*, **15**, 126–41.
- Blinder, A. S. (2006). 'Offshoring: the next industrial revolution?'. *Foreign Affairs*, **85**, 113–28.
- Buckley, P. J. (2009). 'Internalisation thinking: from the multinational enterprise to the global factory'. *International Business Review*, **18**, 224–35.
- Buckley, P. J. and Ghauri, P. N. (2004). 'Globalisation, economic geography and the strategy of multinational enterprises'. *Journal of International Business Studies*, **35**, 81–98.
- Buckley, P. J. and Pearce, R. D. (1979). 'Overseas production and exporting by the world's largest enterprises: a study in sourcing policy'. *Journal of International Business Studies*, **10**, 9–20.
- Bunyaratavej, K., Hahn, E. D. and Doh, J. P. (2007). 'International offshoring of services: a parity study'. *Journal of International Management*, **13**, 7–21.
- Bunyaratavej, K., Hahn, E. D. and Doh, J. P. (2008). 'Multinational investment and host country development: location efficiencies for services offshoring'. *Journal of World Business*, **43**, 227–42.
- Cantwell, J. and Mudambi, R. (2005). 'MNE competence-creating subsidiary mandates'. *Strategic Management Journal*, **26**, 1109–28.

- Carmel, E. (2003). 'The new software exporting nations: success factors'. *Electronic Journal on Information Systems in Developing Countries*, **13**, 1–12.
- Contractor, F. J. and Mudambi, S. M. (2008). 'The influence of human capital investment on the exports of services and goods: an analysis of the top 25 services outsourcing countries'. *Management International Review (MIR)*, **48**, 433–45.
- Couto, V., Mani, M., Lewin, A. Y. and Peeters, C. (2006). *The Globalization of White-Collar Work. The Facts and Fallout of Next-Generation Offshoring*. Durham, NC: Booz Allen Hamilton and Duke University.
- Deloitte (2004). *It's 2008: Do You Know Where Your Talent Is? Why Acquisition and Retention Strategies Don't Work*. Deloitte Research.
- Doh, J. P., Bunyaratavej, K. and Hahn, E. D. (2009). 'Separable but not equal: the location of discrete services offshoring activities'. *Journal of International Business Studies*, **40**, 926–43.
- Dunning, J. H. (1988). *Explaining International Production*. London: Unwin Hyman.
- Dunning, J. H. (1998). 'Location and the multinational enterprise: a neglected factor?'. *Journal of International Business Studies*, **29**, 45–66.
- Dunning, J. H. and Lundan, S. M. (2008). *Multinational Enterprises and the Global Economy*. Cheltenham: Edward Elgar Publishing.
- Dunning, J. H. and Narula, R. (1996). 'The investment development path revisited: some emerging issues'. In Dunning, J. H. and Narula, R. (Eds), *Foreign Direct Investment and Governments: Catalysts for Economic Restructuring*. London: Routledge, 1–41.
- European Commission (2005). *Key Data on Education in Europe*. Luxembourg: European Commission.
- Eurostat (2008). *Europe in Figures 2008*. Luxembourg: Eurostat.
- Farrell, D. (2005). 'Offshoring: value creation through economic change'. *Journal of Management Studies*, **42**, 675–83.
- Farrell, D., Laboissière, M. A. and Rosenfeld, J. (2006). 'Sizing the emerging global labor market: rational behavior from both companies and countries can help it work more efficiently'. *Academy of Management Perspectives*, **20**, 23–34.
- Flores, R. G. and Aguilera, R. V. (2007). 'Globalization and location choice: an analysis of US multinational firms in 1980 and 2000'. *Journal of International Business Studies*, **38**, 1187–210.
- Florida, R. (2005). *Cities and the Creative Class*. New York: Routledge.
- Gereffi, G. (2006). *New Offshoring of Jobs and Global Development*. Geneva: International Labour Office.
- Graf, M. and Mudambi, S. M. (2005). 'The outsourcing of IT-enabled business processes: a conceptual model of the location decision'. *Journal of International Management*, **11**, 253–68.
- Grossman, G. M. and Rossi-Hansberg, E. (2008). 'Trading tasks: a simple theory of offshoring'. *American Economic Review*, **98**, 1978–97.
- Heeks, R. and Nicholson, B. (2004). 'Software export success factors and strategies in "follower" nations'. *Competition and Change*, **8**, 267–303.
- Jensen, P. D. Ø. (2008). *Offshoring of Advanced and High-Value Technical Services: Antecedents, Process Dynamics and Firm-Level Impacts*. PhD series 23.2008. Copenhagen: Copenhagen Business School.
- Jensen, P. D. Ø. (2009). 'A learning perspective on the offshoring of advanced services'. *Journal of International Management*, **15**, 181–93.
- Kedia, B. L. and Mukherjee, D. (2009). 'Understanding offshoring: a research framework based on disintegration, location and externalization advantages'. *Journal of World Business*, **44**, 250–61.
- Kenney, M., Massini, S. and Murtha, T. P. (2009). 'Offshoring administrative and technical work: new fields for understanding the global enterprise'. *Journal of International Business Studies*, **40**, 887–900.
- Kogut, B. (2002). 'International management and strategy'. In Pettigrew, A. M., Thomas, H. and Whittington, R. (Eds), *Handbook of Strategy and Management*. London: Sage, 261–78.
- Kumar, K., van Fenema, P. C. and von Glinow, M. A. (2009). 'Offshoring and the global distribution of work: implications for task interdependence theory and practice'. *Journal of International Business Studies*, **40**, 642–67.
- Lewin, A. Y. and Couto, V. (2007). *Next Generation Offshoring – The Globalization of Innovation*. Durham, NC: Duke University, Fuqua School of Business.
- Lewin, A. Y. and Peeters, C. (2006). 'Offshoring work: business hype or the onset of fundamental transformation?'. *Long Range Planning*, **39**, 221–39.
- Lewin, A. Y., Massini, S. and Peeters, C. (2009). 'Why are companies offshoring innovation? The emerging global race for talent'. *Journal of International Business Studies*, **40**, 901–25.
- Manning, S., Lewin, A. Y. and Massini, S. (2008). 'A dynamic perspective on next-generation offshoring: the global sourcing of science and engineering skills'. *Academy of Management Perspectives*, **22**, 35–51.

- Maskell, P., Pedersen, T., Petersen, B. and Dick-Nielsen, J. (2007). 'Learning paths to offshore outsourcing: from cost reduction to knowledge seeking'. *Industry & Innovation*, **14**, 239–57.
- McCann, P. and Mudambi, R. (2005). 'Analytical differences in the economics of geography: the case of the multinational firm'. *Environment and Planning A*, **37**, 1857–76.
- Meyer, K. E., Mudambi, R. and Narula, R. (2011). 'Multinational enterprises and local contexts: the opportunities and challenges of multiple embeddedness'. *Journal of Management Studies*, **48**, 235–52.
- Mithas, S. and Whitaker, J. (2007). 'Is the world flat or spiky? Information intensity, skills, and global service disaggregation'. *Information Systems Research*, **18**, 237–59.
- Mudambi, R. (2007). 'Offshoring: economic geography and the multinational firm'. *Journal of International Business Studies*, **38**, 206.
- Mudambi, R. (2008). 'Location, control and innovation in knowledge-intensive industries'. *Journal of Economic Geography*, **8**, 699–725.
- Nassimbeni, G. and Sartor, M. (2008). *Sourcing in India – Strategies and Experiences in the Land of Service Offshoring*. Houndsmill: Palgrave Macmillan.
- Porter, M. E. (1990). *The Competitive Advantage of Nations*. New York: Free Press.
- Porter, M. E. and Schwab, K. (2008). *The Global Competitiveness Report 2008–2009*. Geneva: World Economic Forum.
- Pyndt, J. and Pedersen, T. (2006). *Managing Global Offshoring Strategies: A Case Approach*. Frederiksberg: Copenhagen Business School Press.
- Rugman, A., Verbeke, A. and Yuan, W. (2011). 'Re-conceptualizing Bartlett and Ghoshal's classification of national subsidiary roles in the multinational enterprise'. *Journal of Management Studies*, **48**, 253–77.
- Sako, M. (2006). 'Outsourcing and offshoring: implications for productivity of business services'. *Oxford Review of Economic Policy*, **22**, 499–512.
- Stopford, J. J. and Wells, L. T. (1972). *Managing the Multinational Organisation of the Firm and Overlap of Subsidiaries*. New York: Basic Books.
- Stringfellow, A., Teagarden, M. B. and Nie, W. (2008). 'Invisible costs in offshoring services work'. *Journal of Operations Management*, **26**, 164–79.
- Tallman, S. and Chacar, A. S. (2011). 'Knowledge accumulation and dissemination in MNEs: a practice-based framework'. *Journal of Management Studies*, **48**, 278–304.
- United Nations Conference on Trade and Development (UNCTAD) (2004). *World Investment Report. The Shift towards Services*. Geneva: UNCTAD.
- United Nations Conference on Trade and Development (UNCTAD) (2005). *World Investment Report: Transnational Corporations and the Internationalization of R&D*. Geneva: UNCTAD.
- United Nations Conference on Trade and Development (UNCTAD) (2007). *World Investment Report. Transnational Corporations, Extractive Industries and Development*. Geneva: UNCTAD.
- Zaheer, S., Lamin, A. and Subramani, M. (2009). 'Cluster capabilities or ethnic ties? Location choice by foreign entrants in the services offshoring industry in India'. *Journal of International Business Studies*, **40**, 944–68.