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# A survival analysis of offshore initiatives

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**Keywords:** back-reshoring, near-reshoring, reshoring, duration, offshoring, manufacturing

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## Abstract

The factors affecting the duration of foreign ventures prior to reshoring have been neglected by international business and operations management literature so far. This paper aims at filling this gap. We build a database of secondary data concerning 249 offshoring experiences terminated with a relocation to the home country/region and estimate a set of survival models. Our analyses show that the duration of foreign ventures is significantly affected by the home country, the host country, the industry, and the size of the company. In addition, we observe that strategic assets seeking motivations give rise to shorter offshore stays. These findings are used to develop a set of testable propositions.

**Keywords:** back-reshoring, near-reshoring, reshoring, duration, offshoring, manufacturing

## 1. Introduction

Manufacturing offshoring has emerged as one of the most common and effective strategies in the last thirty years (da Silveira, 2014; Kedia & Mukherjee, 2009; Ferdows, 1997). Firms worldwide have relocated their production facilities or their supply basins offshore, seeking resources, efficiency, strategic assets and/or market advantages (Dunning, 1980). In spite of the fact that this tendency is still on-going, companies operating offshore face various operational issues such as adverse changes in the local environment (costs, suppliers, regulations, political issues, etc.), intellectual property violations, and quality problems. When faced with these criticalities, firms may decide to relocate their facilities or change their supply areas (Manning, 2013), exploiting the opportunities offered by other locations.

In this direction, both the popular press and scholarly research have stressed that recently several firms are finding advantages in relocating offshore facilities (or supply basins) back to their home country (“back-reshoring”) and/or to countries closer to their headquarters (“near-reshoring”) (Fratocchi et al., 2014).

Exogenous changes (such as the reduction in labour cost-differentials between low-cost and western countries and escalating logistics costs), supply chain considerations (higher supply chain risks, delivery delays, loss of flexibility) and resources/strategic assets considerations (intellectual property protection, product quality, brand image, etc.) have been called in to explain firms’ decisions to relocate closer to their headquarters (Dachs & Kinkel, 2013;

Ellram et al., 2013; Kinkel, 2014; Simchi-Levi et al., 2012; Tate, 2014). Other authors have posited that, since the original offshoring strategies were likely biased by bounded rationality and behavioural decision heuristics (Gray et al., 2013; Simon, 1957), reshoring may represent a short-term “error correction” (Kinkel & Maloca, 2009; Kinkel, 2014).

While much emphasis has been placed on the reasons for reshoring, to the best of our knowledge, the factors that affect the duration of foreign ventures prior to reshoring have not been investigated so far. Although the duration issue has been investigated in International Business (IB) research with reference to specific foreign ventures (e.g., joint ventures, licensing agreements, plants, subsidiaries) (Habib & Mella-Barral, 2007; Jiang et al., 2009; Mata & Portugal, 2000; Wren & Jones, 2009), the focus has never been on the reshoring exit strategy.

This paper attempts to fill the aforementioned gap of the literature. We apply survival analysis to investigate the determinants of the duration of 249 offshore manufacturing experiences, all terminated with a relocation to the home country/region of the firm. Empirical findings are then used to develop a set of testable propositions that may contribute to advance the understanding of the dynamics of offshore production and of reshoring processes. Following scholars emphasising the “home region” effect in comparison with the “home country” one (Rugman & Oh, 2013), we assume that back-reshoring and near-reshoring strategies are similar, and analyse them together in this study (hereinafter adopting the term ‘reshoring’).

Filling this research gap is of prominent managerial relevance. International expansion involves a set of “transition costs” such as relocation costs, costs of finding and establishing relations with new suppliers (Goo et al., 2007), and costs of redeploying workforce. Clearly, whatever their nature, the recovery of these costs is positively related to the length of the relationships with the offshore suppliers (in case of outsourcing), and the survival of the production facilities offshore (in case of insourcing). Therefore, it is important for firms to identify the offshore challenges that can undermine the sustainability of the offshore initiatives over time. Further, ever since Porter (1994), the locational choice has been recognised as a source of competitive advantage and a key strategic management variable. Therefore, it is important that, when choosing production and sourcing locations, firms pay attention to which countries and regions are expected to offer long-lived advantages.

The remainder of the paper is organized as follows. Section 2 is devoted to the review of the literature. Section 3 presents our conceptual framework for the study of duration. Section 4 describes the data, the estimation methodology and the results. Finally, the discussion, the

contribution of the paper to practice and policy and the conclusions are presented in Sections 5, 6, and 7 respectively.

## **2. Literature Background**

### *2.1 Drivers of location decisions*

Reshoring is fundamentally a location decision (Ellram, 2013; Gray et al., 2013) characterized by the following peculiarities: (1) it is a revision of a previous offshoring choice (i.e., a second step choice, Fratocchi et al., 2014) and (2) production is relocated to the company's home country (back-reshoring) or home region (near-reshoring).

A wide literature has investigated the key drivers of manufacturing location, identifying four main categories (Dunning, 1993; Narula & Dunning 2000):

- *Opportunities for cost reductions.* Labour (sometimes corrected for productivity), energy, and transportation costs are among the most frequent location drivers (De Noble & Galbraith, 1992; Jensen & Pedersen, 2011; Karakaya & Canel, 1998).
- *Cultural, political, legal, geographical, economic, and infrastructural features of the host country.* Within this category, a prominent role is covered by taxes, tariffs and government incentives (Fox & Lee, 1996; Lösch & Woglom, 1954).
- *Availability of resources.* Natural resources (Kang & Jiang, 2012; Hart, 1995), human-capital (e.g., employees with advanced technical skills) (Karakaya & Canel, 1998), knowledge-related resources (Mudambi, 2008), the local presence of universities and research centres (Alcácer & Chung, 2007) all affect the desirability of a production location.
- *Proximity to customers and other network nodes.* Local market size and its (actual or expected) growth rate significantly affect location decisions (e.g., Dicken & Lloyd, 1990; Mudambi, 1995). Firms may also seek co-location with other manufacturing establishments (Audretsch, 1998; Shaver & Flyer, 2000; Temouri et al., 2010).

While the above set of drivers reflect country-specific advantages, other authors have focused on firm-specific and product-specific characteristics affecting location choices (e.g., Graf & Mudambi, 2005). In particular, product features, e.g., product life cycle stage, technology, degree of standardization/customization (Vernon, 1966), responsiveness requirements, positioning of the production phase in the value chain (Meijboom & Voodrijk, 2003; Schemenner et al., 1987), influence the location decision.

The eclectic paradigm (theory) of international production (Dunning, 1980, 1998, 2000, 2009) proposes a unifying frame whereby location advantages are just one of three broad factors

affecting international production. In particular, the attractiveness of the *Location-specific* endowments of alternative countries interacts with the firm's *Ownership* of (or access to) a set of income-generating assets (Barney, 1991), and the firm's interest to *Internalize* activities (Buckley & Casson, 1976, 2009; Casson, 2013; Rugman, 1980, 2010; Williamson, 1985) for the generation and/or exploitation of competences (OLI model).

Further, Dunning (2000: 164) subsumes the location drivers discussed above into four categories of contextual factors that affect the international configuration of production: (1) "the economic and political features of the country or region of the investing firms, and of the country or region in which they are seeking to invest"; (2) "the industry and the nature of the value added activity in which the firms are engaged"; (3) "the characteristics of the individual investing firms"; (4) "the *raison d'être* for the FDI," i.e., whether the direct investment or alliance is market-seeking (demand driven), resource-seeking (supply driven), efficiency-seeking (motivated by rationalization), or strategic assets seeking (i.e., intended to protect or improve ownership advantages of the firm).

Dunning's paradigm has been applied to explain location decisions in general, as well as to second step choices, i.e., divestments (Boddewyn, 1983) and reshoring (Ellram et al., 2013). With respect to relocations, Dunning himself (2000) argued that the knowledge based global economy and the growth of asset-seeking internationalization compel to view location advantages in a dynamic and not in a static fashion. In fact, the spatial profile of international business may change through time, thus making it of interest to probe which locations offer short-lived advantages, and which specific perceived advantages run the risk of being short-lived because of their interaction with ownership and internalization factors.

## *2.2. The criticalities of offshoring and motivations for reshoring*

The offshoring literature has not ignored the criticalities/risks/barriers linked to offshoring initiatives. Among these risks, the danger of subtraction of confidential data (Khalfan, 2004; Willcocks & Smith, 1995; Smith et al., 1996) and of violation of intellectual property rights (Carmel & Agarwal, 2002; Holweg et al., 2011; Monczka et al., 2005; Smith et al., 1996) are often cited. Another critical aspect is distance, expressed in geographical, language, and cultural terms (Espinosa & Carmel, 2004; Ganesh, 2004; Gray & Massimino, 2014), which influences the costs of negotiation processes, of communication and organizational coordination (Carmel & Agarwal, 2002). A related risk concerns the foreign country system, whose political, legal and financial profile can differ radically from the domestic one (Henisz, 2000; Henisz & Macher, 2004; Horn et al., 2013).

Offshore outsourcing, especially in developing countries, can require supplier training and assistance (Jia et al., 2014; Nassimbeni & Sartor, 2007), with specific investments that can be lost in the case of switching of the relationship. Moreover, the knowledge and information exchange that develops in buyer–supplier interactions makes the customer vulnerable to suppliers’ opportunistic behaviours (Ettlie & Sethuraman, 2002; Henisz, 2000). Finally, other typical pitfalls are linked to the de-motivation of the internal staff (after the dismantling of the internal structure) and to the difficulties of monitoring and controlling quality levels (Horn et al., 2013).

Recent studies (Dachs & Kinkel, 2013; Johnson et. al., 2013; Kinkel, 2014; McIvor, 2013; Tate et al., 2014) have observed that some of the aforementioned criticalities of offshoring as well as other issues (e.g., the rising labour costs in emerging countries, the high shipping costs, and the improvements in labour productivity in western countries, Simchi-Levi et al., 2012; Arlbjørn & Mikkelsen, 2014) are encouraging companies to bring production and supply bases back home or moving them to countries closer to their headquarters.

Consistent with the view that reshoring is a reversion of a previous offshoring project (Gray et al., 2013), and elaborating on the features of the phenomenon identified by different contributions (Ellram, 2013; Gray et al, 2013; Holz, 2009; Kinkel & Maloca, 2009; Kinkel, 2012; Tate et al., 2014), Fratocchi et al. (2014: 56) have termed this phenomenon ‘back-reshoring’, and defined it as “a voluntary [not forced by the host country government (e.g., nationalization decision)] corporate strategy regarding the home- country's partial or total relocation of (insourced or outsourced) production to serve the local, regional or global demands”. Correspondingly, ‘near-reshoring’ refers to the case in which production activities, previously offshored, are relocated “in a foreign country in the same region of the firm's home country” (ibid.).

The emerging literature on reshoring has focused on the identification of the drivers of the relocation in the company’s home country/region. However, the development of the literature is hindered by the limited availability of data (Jagersma & Van Gorp, 2003), and by the fact that the unit of analysis of reshoring is often “below the level of plant (at the product or component level)” (Gray et al., 2013: 31).

In order to classify reshoring motivations we conducted a literature review focusing on academic journal and conference papers regarding such phenomenon. We found sixteen papers published among 2007 and 2014. In this respect, it is worth of notice that eight of them were published in the last year (2014), suggesting the growing interest in academia.

**Table 1: Reshoring drivers**

Reshoring drivers	Arlbjørn & Mikkelsen, 2014	Bailey & De Propris, 2014	Dachs & Kinkel, 2013	Gray et al., 2013	Kinkel, 2012	Kinkel, 2014	Kinkel & Maloca, 2009	Kinkel & Zanker, 2014	Kinkel et al., 2007	Leibl et al., 2011	Martínez-Mora & Merino, 2014	McIvor, 2013	Pearce II, 2014	Simchi-Levi et al., 2012	Tate et al., 2014	Tate, 2014
<b>Efficiency seeking</b>																
Customer proximity									x				x		x	
Host country legislation										x			x			
Know-how and IP			x		x	x		x					x		x	x
Physical and cultural distance																x
Supply chain risk		x												x		x
<b>Market seeking</b>																
Coordination and monitoring costs			x		x	x	x	x	x	x	x					
Host country infrastructures							x	x								
Labour elements (costs and productivity)		x	x		x	x		x			x		x	x	x	x
Logistic performance (except costs)	x	x			x	x	x	x	x		x			x	x	x
Production & logistics costs (except labour cost)		x	x	x		x		x	x	x	x	x	x	x	x	x
Skilled human resource availability		x	x		x	x	x	x		x			x	x	x	
<b>Resource seeking</b>																
Automation	x															x
Currency exchange		x								x	x		x	x	x	
<b>Strategic asset seeking</b>																
Ability to quickly respond to changing market conditions		x	x							x	x	x	x	x	x	x
Home country/global economy									x					x		
Improve customer satisfaction		x											x			x
Innovation	x	x				x		x				x	x	x		
Made-in effect											x				x	
Quality	x	x	x		x	x	x	x	x	x	x		x		x	x
Taxes and incentives <sup>1</sup>									x				x	x	x	

<sup>1</sup> This category is considered hybrid between efficiency and strategic assets seeking.

Analysing these contributions we found around 150 different “elementary” drivers that were then grouped in 18 macro-categories. In order to avoid misinterpretation of the text, each variable was matched to a macro-variable by two independent researchers of the group and

cross-validated. In a few cases of disagreement, a third researcher was involved until a common conclusion was reached. The 18 macro-categories were then matched to the corresponding “*raison d’être*” of the Dunning’s eclectic paradigm: efficiency, market, resource, and strategic assets seeking (Table 1). The matching is based on the factors identified by Ellram et al. (2013), who establish a relation between the eclectic paradigm and relocation motivations. In this respect, two aspects are of interest: first, Dunning (1998) acknowledges that the items defining a specific “*raison d’être*” evolve over time, next, the macro-category tax and incentives is hybrid, i.e., it reflects both efficiency and strategic assets seeking motivations for relocating (Ellram et al., 2013).

Inspection of the table reveals that in most cases reshoring is determined by market seeking elements. Not surprisingly, resource seeking drivers are less relevant in explaining reshoring, both in terms of involved macro-categories (just 2) and number of citations, due to the fact that natural resources are generally less available in western countries with respect to offshore “low cost” ones. We considered among resource seeking motivations “automation”, which is cited by only two authors, but may represent a rising driver of reshoring in high cost countries in the future (Albjorn & Mikkelsen, 2014).

### *2.3. The Duration of Foreign Ventures*

Our review of the drivers of manufacturing location reveals that the various theoretical frameworks rarely, if ever, focus on the time dimension of offshore projects. While mainstream internationalization process theory (e.g., Johanson & Vahlne, 1977) has investigated the dynamics of firms’ international expansion, it views internationalization as a unidirectional progressive process. Little attention is devoted to the factors that affect the length of the offshore initiative and the relocation of activities elsewhere.

Table 2 summarizes the results of the few empirical studies that have investigated the determinants of the duration of specific foreign ventures (e.g., joint ventures, licensing agreements, plants, and subsidiaries). The table organises these determinants according to Dunning’s (2000) categories of contextual factors (Section 2.2).

We notice that duration is affected by firm, industry, and country features, even if the variables considered are rather heterogeneous, and there is contrasting evidence on their statistical significance (perhaps reflecting the different types of foreign ventures studied). The reasons for the termination of the foreign ventures are instead never considered among the determinants of duration, despite they have proved to be a significant factor to understand relocation processes (Kinkel, 2012).

**Table 2:** Factors affecting the duration of foreign ventures  
(s: statistically significant at the 5% level; ns: not significant)

Duration of foreign venture		Chadee et al., 2003	Glaister & Buckley, 1998	Goo et al., 2007	Habib & Mella-Barral, 2007	Jiang et al., 2009	Jiang et al., 2011	Mata & Portugal, 2000	Mata et al., 1995	McCloughan & Stone, 1998	Tsang, 2005	Wren & Jones, 2009	Zhao & Zhu, 1998
<b>Firm and investment specific characteristics</b>	Year of entry									ns			
	Timing of entry (late movers' advantage)						s						
	Subsidiary age											ns	
	Subsidiary size							s	ns	ns		ns	
	Share of the subsidiary equity		ns			s	s				ns	ns	
	Greenfield vs. acquisition entry strategy							s		s		ns	
	Strategic importance of the activity			ns									
	Human capital endowment							s					
	Asset specificity/irreversibility of the investment			s		s	s						
	Discrepancy in JV partners' costs				s								
	Technical requirements uncertainty			s									
	Extent of moral hazard (opportunistic behaviour)			ns	s								
	Foreign partner capability					ns							
	Foreign partner government affiliation						ns						
	Satisfaction with output quality			ns									
	Ease of know-how acquisition and amount of know-how to be acquired			s	s								
	Mechanisms, extent, and focus of control by parent firm		s										
	Receipt of a regional investment grant												ns
	Parent firm size				ns		s		ns				
Level of diversification								ns					
Presence of other subsidiaries in the country												ns	
<b>Industry specific characteristics</b>	Industry					ns	ns			s		ns	
	Industry concentration							ns		s			
	Industry growth							ns		ns			
	Minimum scale of the industry							s				ns	
<b>(Home and host) country specific characteristics</b>	Home country						s			ns		s <sup>1</sup>	
	Home country culture / cultural distance between home and host country					ns	s <sup>2</sup>						
	Host country risks						s						
	Host country FDI restrictions					ns							
	Host country political stability					ns							
	Host country market and technology uncertainty					s							
	Presence of foreign firms of the same industry in the host country							s					
	Geographical area within the host country	s					ns			ns			

<sup>1</sup> Statistically significant only for acquisitions (not for greenfield plants)

<sup>2</sup> Statistically significant only the uncertainty avoidance cultural dimension (Hofstede, 1984).

Although most of the aforementioned empirical studies are a-theoretical in nature, there are three notable exceptions: according to Jiang et al. (2011) duration is inversely related to transaction costs offshore; Mata and Portugal (2000) link duration to the ownership advantages of the eclectic paradigm, i.e., the ability of firms to maintain or develop offshore

non-imitable firm-specific assets; and Goo et al. (2007) integrate several theoretical perspectives, among which are knowledge acquisition (absorptive capacity and organizational learning), strategic importance of activity (resource dependence theory), and supplier opportunism (transaction cost economics).

Though these studies shed light on factors affecting the duration of specific types of foreign ventures, to the best of our knowledge no study has focused specifically on reshoring as an exit strategy.

### **3. Conceptual framework**

In this section, we propose a framework to explore the determinants of the duration of offshored activities prior to reshoring. Our conceptual framework embraces Dunning's view that international production decisions and their location component are strongly contextual (Dunning, 2000), being dependent on firm, industry and (home and host) country characteristics. We argue here that conceptually the same contextual variables can explain the duration (this contention will then be empirically analysed in section 4). This argument builds on the results of the empirical IB literature on the duration of foreign ventures (Section 2.3). In particular, evidence exists of a significant impact of firm and investment characteristics. For instance, both assets specificity and high irreversibility of the investments are expected to lead to longer durations (Goo et al., 2007; Jiang et al., 2009, 2011). Likewise, captive forms of offshoring are expected to give rise to longer offshoring durations with respect to offshore outsourcing, due to the larger direct investments involved (Jiang et al., 2011; Mata & Portugal, 2000). Also, since firm size captures a whole wealth of firm's resources that the company can deploy in offshore locations (personnel, human capital, R&D capacity, control), size is expected to be positively linked to duration (Jiang et al., 2009).

Evidence also exists that the industry of activity affects duration. In fact, firms operating in industries (e.g., electronics) with rapid technological change and in which competition is technology-based are under pressure to chase low cost locations (McCloughan & Stone, 1998). Thus, the continuous search for cost reduction might determine lower duration of the investment.

Dunning (2000) argues that country specific comparative advantages may change through time, thus giving rise to relocations of production elsewhere and influencing the duration of the offshore stay. The literature has identified both home country (Wren & Jones, 2009; Jiang et al., 2011) and host country effects (Mata & Portugal, 2000; Jiang et al., 2009, 2011) as relevant determinants of duration. High country risk, in terms of political instability or low

intellectual property right protection, is expected to shorten the duration of the offshore experience. Also, cultural distance may give rise to unexpected problems in the offshore location that lead firms to relocate production, thus shortening the duration. Home country effects such as improvements in labour productivity with respect to offshore locations, or subsidies and tax incentives for relocating back home are bound to lead to shorter duration. Consistent with Dunning’s contextual factors, we argue that the determinants of duration should include also the motivations (“*raison d’être*”, Dunning, 2000) for the relocation from the offshore country back to the home country/region (efficiency seeking, resource seeking, market seeking, and strategic assets seeking). Since the IB literature on the duration of foreign ventures does not consider the motivations (see Section 2.3), postulating ex-ante their effect on the duration of offshoring activities prior to reshoring is difficult. On the one hand, internationalization process theory argues that international expansion of the firm is initially efficiency/market/resource seeking, and only later it is oriented towards strategic assets seeking (Johanson & Vahlne, 1977). Therefore, one would expect that relocation due to strategic assets seeking motivations occurs at later stages and therefore involves longer survival offshore. On the other side, considering that strategic assets seeking motivations have become paramount in location choices (Cantwell, 2009), we might expect that challenges relating to strategic assets give rise to a prompter relocation.

**Figure 1: Conceptual framework**

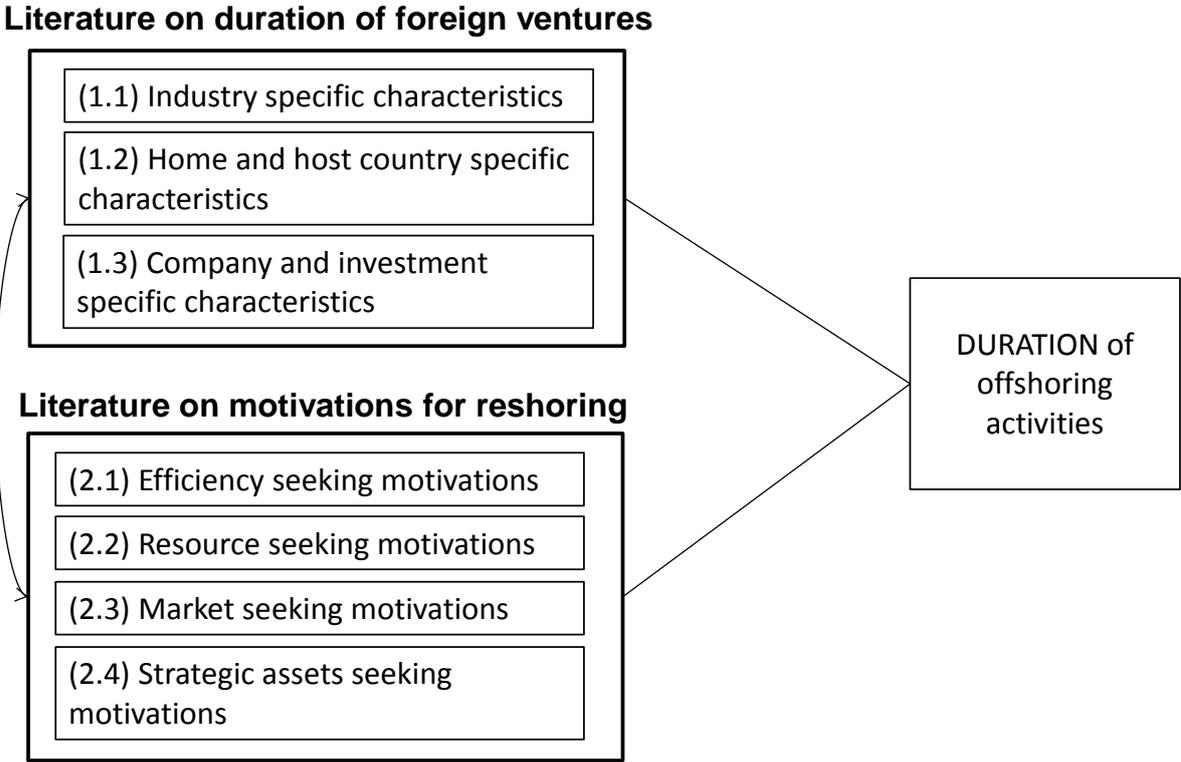


Figure 1 summarises our exploratory framework. The double-ended arrow acknowledges that the two building blocks are not independent. For instance, some motivations for reshoring (Block 2) may in fact be country specific (Block 1.2), e.g., the increase in manufacturing productivity in the home country, the lack of well-prepared technicians and skilled workers in the host country, and the global supply chain risks, or industry specific characteristics (block 1.1), e.g., logistics costs and labour costs increase.

## **4. Empirical study**

### *4.1 Data*

In order to analyse the duration of the offshore stay prior to reshoring, we built a database using secondary data (Yang et al., 2006; Roth et al., 2008a, 2008b) extracted from newspapers and magazines (Cowton, 1998; Franzosi, 1987; Mazzola & Perrone, 2013).

Information on reshoring decisions was collected from 2011 to the beginning of 2014 mainly from the historical archives of relevant international business newspapers, national-level newspapers, and business magazines. Next, we searched white papers by major consulting companies. Finally, we used internet search engines (e.g., Google) to further check that no relevant news concerning reshoring experiences was omitted. We searched these sources adopting a wide spectrum of keywords (e.g., reshoring, backshoring, nearshoring). The complete list of sources and keywords is provided in Appendix A (available from the authors on request).

The unit of analysis was the single reshoring decision. Therefore, if a company has reshored production from two different host countries, in our database it accounts for two pieces of evidence. For each operation, information was recorded on the company involved; its size; industry;<sup>1</sup> home country (i.e., headquarter country); year in which offshoring was implemented; “abandoned” host country; year in which reshoring was implemented; offshore governance mode (outsourcing vs. insourcing); motivation(s) for reshoring.

Companies’ motivations were inferred either from direct interviews with the companies’ managers reported in the article, or from the journalist’s report of the case. In order to avoid misinterpretation of the text, each observation was reviewed by two independent researchers of the group and cross-validated. In case of different positions (nearly 5% of cases), a third researcher was involved until a common conclusion was reached. In addition, when the case

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<sup>1</sup> Industries were classified according to the first two digits of the Standard Industrial Classification (SIC) code, except for the “home appliances” sector (SIC codes 3631, 3632, 3633, 3634, 3635, 3636, 3639) which has been separated from the “electric and electronic” one due to the importance of the production of white goods in some of the economies under study (e.g., Germany and Italy).

was present in more than one source, the information was compared and, in case of discrepancy, the case was eliminated from the database.

The database contained 281 operations for which information about the length of stay offshore and the motivations for reshoring were available. Cases of offshoring prior to 1980 (32 cases) were excluded. Table 3 summarises the main characteristics of the final sample, based on the remaining 249 cases.

**Table 3: Sample characteristics**

	ALL (n=249)		U.S.A. (n=131)		EU (n=109)	
<b>INDUSTRY</b>						
Automotive	19	7.6%	9	6.9%	9	8.3%
Electronic	40	16.1%	27	20.6%	9	8.3%
Mechanical	37	14.9%	21	16.0%	16	14.7%
Clothing	38	15.3%	10	7.6%	28	25.7%
Furniture	39	15.7%	26	19.8%	13	11.9%
Home Appliances	17	6.8%	8	6.1%	8	7.3%
Other Sectors	59	23.7%	30	22.9%	26	23.9%
<b>HOST COUNTRY/REGION</b>						
Host Asia	192	77.1%	118	90.1%	66	60.6%
Host East Europe	29	11.6%	1	0.8%	28	25.7%
Host Other	28	11.2%	12	9.2%	15	13.8%
<b>COMPANY AND INVESTMENT SPECIFIC CHARACTERISTICS</b>						
Governance mode (outsourcing)	106	42.6%	69	52.7%	35	32.1%
Small firms	61	24.5%	47	35.9%	14	12.8%
Medium firms	47	18.9%	30	22.9%	17	15.6%
Large firms	141	56.6%	54	41.2%	78	71.6%
<b>MOTIVATIONS FOR RESHORING</b>						
Made-in effect	39	15.7%	17	13.0%	22	20.2%
Quality issues	45	18.1%	27	20.6%	18	16.5%
Total Costs	93	37.3%	50	38.2%	39	35.8%
Customer services	23	9.2%	10	7.6%	13	11.9%
Delivery Delays	43	17.3%	28	21.4%	13	11.9%
Governmental Incentives	24	9.6%	13	9.9%	8	7.3%
Proximity to customers	19	7.6%	17	13.0%	2	1.8%
<b>CONTEXTUAL FACTORS</b>						
Economic Crisis	18	7.2%	1	0.8%	17	15.6%
Global Reorganization	20	8.0%	10	7.6%	10	9.2%

Because of the sources searched, which favour information on western countries, the sample consists mainly of US- and EU-based companies (Table 3). Inside the EU, the highest numbers of cases concern France (21), Germany (12), and Italy (47), all characterised by a strong specialisation in manufacturing. As for the host country, almost 77% of cases concern Asia (of which 89% in China and 11% in other Asian countries), whereas Eastern Europe

(relevant only for European firms) accounts for around 12%. Large firms are prominent in the sample, especially in EU (72%). Firms that have chosen an outsourcing strategy in the offshore location account for 43% of the sample.

Table 3 also reports the most frequent motivations for reshoring and two further contextual factors (reshoring attributed to the global crisis or to the firm's global reorganization). It is noteworthy that strategic assets seeking (made-in effect and quality issues), and market seeking motivations (total costs, customer services, and delivery delays) are prominent. Efficiency seeking motivations (governmental incentives<sup>2</sup> and proximity to customers) are less common, while resource seeking motivations are negligible.

#### *4.2. Descriptive results on duration*

Figures 2 a-b-c-d describe the duration of the offshore experience through empirical survival curves by firm size, by offshoring governance mode (outsourcing vs. insourcing), by host country, and by home region respectively.

Figure 2(a) shows that the offshore operations of larger firms have significantly higher survival rates: after 10 years since offshoring, about 50% of large firms survive, compared to about 20% of small and medium sized firms (logrank test chi-square(2) = 17.73,  $p < 0.000$ ). Figure 2(b) shows that after 10 years about 75% of firms that had offshored by outsourcing have reshored. This percentage drops to about 50% for firms that have chosen an insourcing strategy offshore (logrank test chi-square(1) = 3.40,  $p < 0.06$ ).

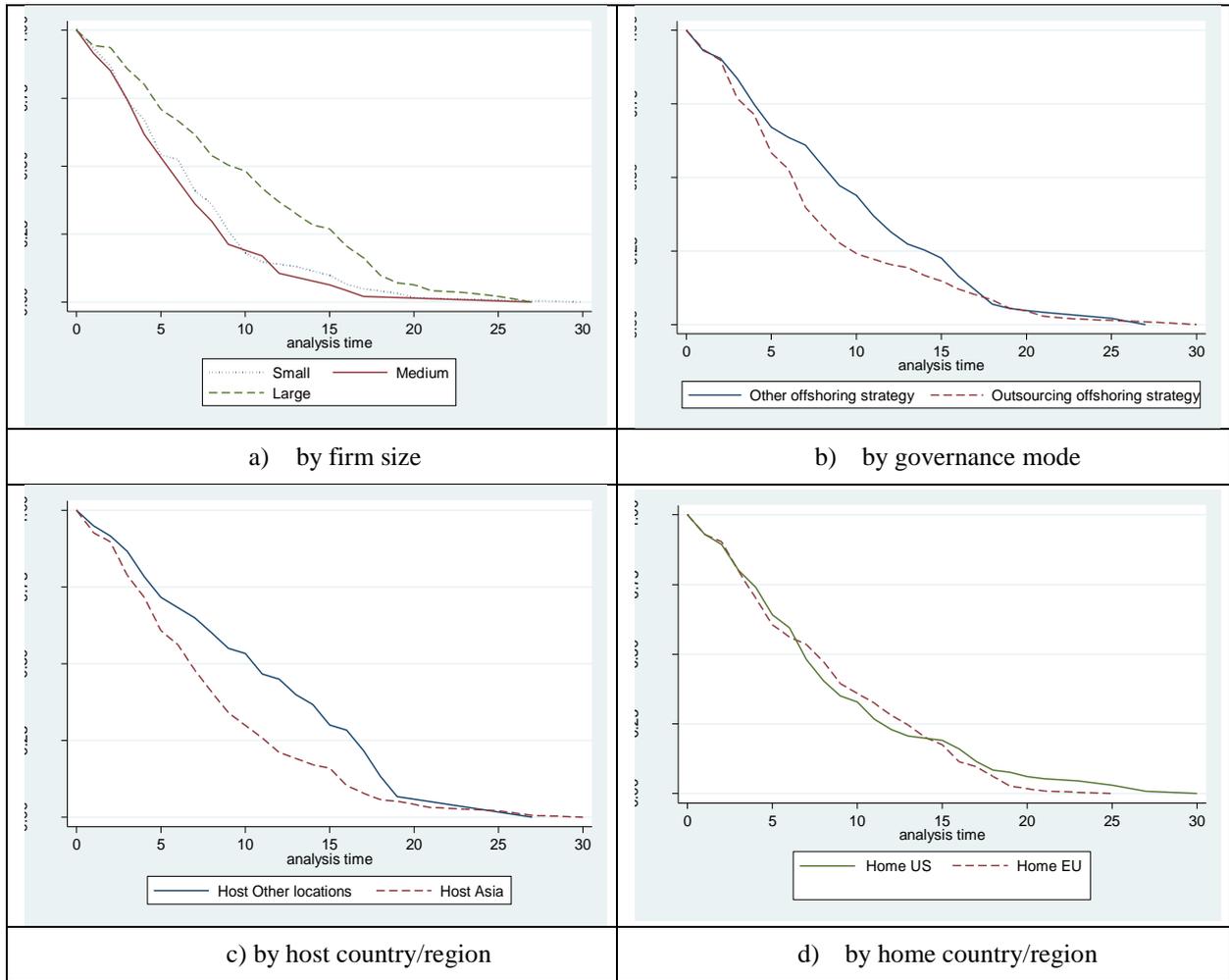
Figure 2(c) shows that offshore initiatives located in Asia have significantly lower survival rates, compared to other locations. After 10 years, about 70% of firms in Asia have reshored, compared to less than 50% in other locations (logrank test chi-square(1) = 6.94,  $p < 0.008$ ).

Finally, Figure 2(d) shows survival curves for EU and US-based firms, suggesting that a low proportion of firms have survived offshore for more than 15 years, whereas 50% of the offshoring operations terminate within 7-8 years. The average duration of the offshore operations in our sample was comparable for US- and EU-based firms (EU=8.85; US=9.05), while the variability of length of stay for US firms is slightly larger (EU st.dev.=5.73; US st.dev.= 6.50). A test of comparison of survival functions between the two groups reveals that the difference is not statistically significant (logrank test chi-square(1) = 0.95,  $p < 0.32$ ). However, when the test comparison is stratified for firm size and governance mode, the survival functions emerge as statistically and significantly different (logrank test chi-square (1) = 4.35,  $p < 0.03$ ), pointing to differences in the composition of the two samples.

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<sup>2</sup> This motivation is considered hybrid (both strategic assets seeking and efficiency seeking), see Section 2.2.

**Figure 2: Descriptive duration curves**



### 4.3 Statistical model

In this study, the length of offshoring prior to reshoring is analysed using a survival modelling approach (Cox & Oakes, 1984; Hosmer & Lemeshow, 1999; Kalbfleisch & Prentice, 2002). Survival analyses, also known as duration models, regress the duration of an activity on a set of covariates. Our model analyses the time elapsed between the offshore and the reshore decision, which is considered a continuous variable. The use of survival models is based on the fact that time, as a dependent variable, is strictly positive. Hence, the error distribution is skewed to the right and the assumption of normality is violated, making the use of standard regression analysis biased.

When analysing survival data it is important to define whether data are censored and the model specification. Since our data set only includes companies that have completed the offshore experience by reshoring, and whose offshoring year is known, the length of the offshore operation is completely determined, so data are uncensored. Even though the contributions on the survival of foreign ventures previously discussed include right-censoring,

uncensored survival models are common to study length of stay, and ample evidence on their use can be found in areas of management studies such as tourism (for instance, Martínez-García & Raya, 2008). With respect to model specification, we adopted a time-invariant log hazard function, since all our covariates were time-independent. The hazard function,  $h(t)$ , assesses the instantaneous risk of failure (i.e., the termination of offshore operation by reshoring) at time  $t$ , conditional on survival to that time (Fox, 2002). Let  $T$  represent the survival time and be a random variable with cumulative distribution function  $P(t) = \Pr(T \leq t)$ . Then:

$$h(t) = \lim_{\Delta t \rightarrow 0} \left( \frac{\Pr[(t \leq T < t + \Delta t) | T \geq t]}{\Delta t} \right)$$

A general hazard model considers the Weibull distribution of survival times (Cox & Oakes, 1984).

$$h(t) = p \exp(X_j \beta) t^{p-1}$$

In the Weibull distribution, the hazard can either increase ( $p > 1$ ), decrease ( $p < 1$ ) monotonically, or be constant ( $p = 1$ ) with time. The Weibull specification was applied to our data to estimate the percentage change in the hazard of reshoring due to the change in a vector of covariates including contextual factors and motivations for reshoring. The robustness of the model specification chosen was assessed against models with alternative survival time distributions by means of the log-likelihood.

#### 4.4. Model estimation and results

Consistent with our conceptual framework, variables chosen in model estimation capture industry, region, and firm specific effects, in addition to different motivations for reshoring (Table 4). As for industries, we considered electronics and automotive since they have been deemed to exhibit the highest propensity to both offshore and reshore (i.e., “mobile industries”) (Kinkel & Zanker, 2013). The selection of Asian countries as host of offshoring locations was driven by the survival curves described above, while distinction between firms based in Europe versus other countries (and most notably US) was motivated by the international business literature that has emphasised differential patterns of internationalization (Bartlett & Ghoshal, 1989). Concerning firm specific characteristics, survival curves suggest a distinctive effect of firm size and governance mode offshore onto the duration of offshoring. In addition, the most frequently provided motivations for reshoring were organized according to the four different “*raison d’être*” identified by Dunning. Finally,

two further contextual factors (i.e., whether the reshoring experience was due to the economic crisis, and whether it was part of a global reorganization of the company) were included in the model as control variables.

**Table 4: Independent variables**

<b>Industry specific characteristics</b>	<ul style="list-style-type: none"> <li>• Electronics industry (<i>Electronics</i>) (binary variable 1/0)</li> <li>• Automotive industry (<i>Automotive</i>) (binary variable 1/0)</li> </ul>
<b>Country/region specific characteristics</b>	<ul style="list-style-type: none"> <li>• Host country in Asia (<i>Host_Asia</i>) (binary variable 1/0)</li> <li>• Headquarter in Europe (<i>Home_EU</i>) (binary variable 1/0)</li> </ul>
<b>Firm specific characteristics</b>	<ul style="list-style-type: none"> <li>• Size by number of employees (<i>Firm size</i>) (1= small, 2=medium, 3=large)</li> <li>• Outsourcing as offshore governance mode (<i>Outsourcing</i>) (binary variable 1/0)</li> </ul>
<b>Motivations for reshoring</b> (binary variables 1/0)	<ul style="list-style-type: none"> <li>• <i>Made-in effect</i> (strategic asset seeking)</li> <li>• <i>Quality issues</i> (strategic asset seeking)</li> <li>• <i>Total costs</i> (market seeking)</li> <li>• <i>Customer services</i> (market seeking)</li> <li>• <i>Delivery Delays</i> (market seeking)</li> <li>• <i>Customer Proximity</i> (efficiency seeking)</li> <li>• <i>Government incentives</i> (efficiency seeking/strategic asset seeking)</li> </ul>
<b>Contextual variables</b> (binary variables 1/0)	<ul style="list-style-type: none"> <li>• <i>Global Re-organization</i></li> <li>• <i>Global economic crisis</i></li> </ul>

Table 5 reports the correlations among the variables. Variance inflation factors were also estimated, yielding values below 1.30, and thus suggesting that multi-collinearity was not a problem (Allison, 1977, 2012).

Three samples were used in the estimation: all reshoring cases (n = 249), European firms only (n = 109), and US-based firms (n = 114). Two model specifications were considered: Model 1 includes only the industry, region and firm specific characteristics, while Model 2 includes also the motivations for reshoring (Table 6).

In order to allow comparison, the motivations exhibiting a low frequency either in the EU (proximity to customers and government incentives) or in the US (global economic crisis) were omitted from the analysis of the EU and US sub-samples. For the complete sample, Model 2 is presented with and without these variables (Models 2a and 2b).

Table 6 reports the change in hazard linked to each explanatory variable. Positive/negative coefficients indicate that the variable gives rise to a higher/lower hazard ratio or, in other words, to an earlier/later return.

A first result is that the ancillary parameter  $p$  in the Weibull regression is always greater than one in all specifications, signalling that hazard is increasing with time, thus confirming that in recent years offshoring firms have returned more frequently than in the past.

**Table 5:** Correlation

	Duration	Electronics	Automotive	Home_EU	Home_US	Firm Size	Outsourcing	Host_Asia	Made-in effect	Quality issues	Total costs	Customer Service	Delivery Delays	Global reorganiz.
Duration														
Electronics	-0.05													
Automotive	0.01	0.13**												
Home_EU	-0.05	-0.18***	0.05											
Home_US	-0.02	-0.13**	-0.05	-0.94***										
Firm Size	0.23*	0.01	0.11	0.28***	-0.34***									
Outsourcing	-0.14**	-0.01	-0.11	-0.18***	0.21***	-0.30***								
Host_Asia	-0.19*	0.07	-0.07	-0.36***	0.33***	-0.25***	0.22***							
Made-in effect	0.08	-0.19***	0.06	0.12**	-0.09	0.05	-0.05	0.13**						
Quality issues	-0.22	-0.04	-0.10	-0.03	0.07	-0.14**	0.09	0.09	-0.01					
Total costs	-0.11	-0.00	-0.02	-0.04	0.02	-0.05	0.02	0.25***	-0.20***	-0.06				
Customer Service	0.05	0.05	-0.04	0.07	-0.05	-0.01	0.01	-0.02	-0.05	0.07	-0.19***			
Delivery Delays	-0.09	-0.03	-0.14**	-0.13**	0.12**	-0.22***	0.23***	0.23***	-0.14**	0.14**	0.20***	0.04		
Global reorganization	0.15*	0.11	0.18***	0.03	-0.01	0.24***	0.16***	-0.18***	-0.05	-0.14**	-0.13**	-0.09	-0.09	

With reference to the complete sample, the comparison of the log-likelihoods of the various model specifications suggests that Model 2a should be preferred. In this model, statistical significant covariates are the industrial sector the firm operates in, with firms in the electronics and automotive sectors exhibiting a hazard respectively of 49% and 67% higher than firms in other industries. For offshoring in Asia, the change in hazard is 53% higher than in other host countries. Further, the size of the firm is relevant in determining the hazard rate, with large firms having a hazard 22% lower than medium enterprises, and medium firms a hazard 22% lower than small firms. Results referring to size and host country confirm the descriptive analyses based on survival curves. Firms having their headquarters in Europe have a significantly higher hazard with respect to firms located elsewhere (57% higher). Among the motivations provided for reshoring, quality issues increase the hazard (92% higher). Finally, it is worth noticing that the governance mode (outsourcing) is not a significant explanatory variables of duration, whereas the survival curves indicated a significant effect. This discrepancy could be explained by the significant negative correlation between firm size and governance mode (correlation coefficient = -0.30).

An interesting difference between Europe and the US emerges when the two sub-samples are considered, since the variable “made-in” effect is significant in both equations but with

opposite signs. In particular, the “made-in” effect reduces the duration of offshoring for EU firms and increases duration for US firms. This result explains why this variable is not statistically significant in the complete sample model.

**Table 6:** Duration models, hazard ratios (standard errors in brackets)

Dependent variable = <b>Length of offshore stay</b>	<b>Complete sample (n = 249)</b>			<b>Europe (n = 109)</b>		<b>United States (n = 131)</b>	
	Model 1	Model 2a	Model 2b	Model 1	Model 2b	Model 1	Model 2b
<b>Industry specific characteristics</b>							
Electronics	0.37 (0.23)*	0.49 (0.27)**	0.51 (0.27)**	0.31 (0.41)	0.78 (0.88)	0.85 (0.33)***	0.82 (0.32)***
Automotive	0.49 (0.28)**	0.67 (0.32)***	0.68 (0.32)***	0.66 (0.40)**	0.65 (0.45)*	0.50 (0.45)	0.98 (0.56)**
<b>Country/Region specific characteristics</b>							
Home_EU	0.57 (0.19)***	0.57 (0.21)***	0.59 (0.20)***	-	-	-	-
Host_Asia	0.58 (0.21)***	0.53 (0.21)***	0.49 (0.21)***	0.52 (0.26)**	0.60 (0.30)***	1.16 (0.56)***	0.76 (0.45)**
<b>Firm specific characteristics</b>							
Firm size	-0.23 (0.06)***	-0.22 (0.07)***	-0.22 (0.06)***	-0.21 (0.08)**	-0.13 (0.11)	-0.20 (0.09)**	-0.17 (0.09)*
Governance (outsourcing)	0.16 (0.15)	0.11 (0.15)	0.09 (0.15)	0.10 (0.22)	0.15 (0.26)	0.13 (0.20)	0.01 (0.19)
<b>Motivations for reshoring</b>							
“Made-in” effect	-	-0.06 (0.18)	-0.04 (0.18)	-	0.80 (0.46)**	-	-0.39 (0.16)*
Quality	-	0.92 (0.40)***	0.89 (0.39)***	-	0.83 (0.57)**	-	0.80 (0.54)**
Total costs	-	0.10 (0.18)	0.08 (0.17)	-	0.34 (0.29)	-	-0.02 (0.217)
Customer Services	-	0.15 (0.14)	-0.16 (0.14)	-	-0.28 (0.20)	-	-0.22 (0.23)
Delivery Delays	-	-0.05 (0.22)	-0.04 (0.22)	-	0.11 (0.356)	-	0.00 (0.32)
Government Incentives	-	-0.11 (0.16)	-	-	-	-	-
Proximity to customers	-	0.32 (0.30)	-	-	-	-	-
<b>Other contextual variables</b>							
Global reorganization	-	-0.24 (0.17)	-0.24 (0.16)	-	-0.06 (0.44)	-	-0.40 (0.17)*
Global economic crisis	-	0.28 (0.29)	-	-	-	-	-
Log-Likelihood	-273.14	-264.81	-265.88	-116.01	-109.93	-146.41	-140.69
Wald chi2	29.21 (p< 0.00)	58.66 (p< 0.00)	54.14 (p< 0.00)	18.68 (p< 0.00)	36.80 (p< 0.00)	31.11 (p< 0.00)	54.51 (p<0.000)
Ancillary parameter p	1.61	1.67	1.66	1.73	1.80	1.55	1.63

\*\*\*p< 0.01, \*\*p< 0.05, \*p<0.10

## 5. Discussion and testable propositions

The investigation of the duration of foreign ventures prior to the decision to reshore production confirms our exploratory model based on the OLI paradigm, according to which industry, firm, and country specific characteristics are relevant to explain short vs. long stays offshore. Results also suggest the relevance of motivations for reshoring, and in particular of strategic assets seeking motivations.

In what follows, we discuss our results and summarise them in a set of propositions whose validity and robustness need to be further investigated by future research.

First, the industry significantly affects the duration of the offshoring activity. In particular, electronics and automotive companies tend to return earlier than companies competing in other industries (e.g., clothing, furniture, mechanical, and home appliances). This aligns with McCloughan & Stone's (1998) finding that the electronic sector presented shorter survival of foreign plants. It further complements Kinkel & Zanker's (2013) description of the electronic and the motor vehicle industries as "mobile", i.e., sectors with very high propensity to both offshore and reshore. Therefore, our results strengthen empirical evidence on the flexible/footloose location strategies (Ferdows, 2008) adopted in these industries. In fact, in high technology intensity sectors such as electronics and automotive competition is triggered by cost (Kotabe et al., 2008), and the shorter duration of the offshore experience may be explained by the need to respond promptly to changes in labour, transport and energy, that lead to reverse location decisions.

*Proposition 1: Firms operating in industries characterised by technology based competition are likely to reverse their offshore initiatives on a more timely basis with respect to firms active in other industries.*

A second finding relates to the host country: the duration of offshore experiences in China and other Asian countries is significantly lower with respect to other geographical areas (Figure 2c and Table 6). A first explanation consistent with the OLI paradigm can be found in the (relatively) rapid deterioration over time of locational advantages of Asia against Europe and the US over the last few years. In this respect, the case of China is particularly remarkable. Pearce II (2014) provides evidence of a conspicuous increase of labour costs in China (+750% in the last 15 years), together with a significant appreciation of the Chinese Yuan against the US dollar (+40% in the period 2005-2012). At the same time, a considerable rise of labour productivity has taken place in the US, which has brought about the realignment of adjusted labour cost per unit of output between US and China (Sirkin et al., 2012). Similar trends have characterized other Asian countries (Wu & Zhang, 2014).

A second explanation for the swifter returns from Asia may rely on the psychic distance (Nordström, 1991) between Asia and Europe/US. Differences in language, business approaches, political systems, culture can be detrimental to the coordination of work due to differences in attitudes and behaviour between the trading partners (Nordman & Tolstoy, 2014). In considering these aspects, firms may apply mental models that lead them to underestimate threats and/or over-estimate opportunities related to offshoring. Hence, swift returns from farshore locations may indicate either scarce knowledge of foreign market characteristics (Kinkel & Maloca, 2009) or the failure to invest in the generation of the experiential knowledge about a foreign environment that is fundamental to develop successful relationships with suppliers and customers (Petersen et al., 2008).

*Proposition 2a: Shrinking costs differentials between host and home countries accelerates the reshoring of manufacturing.*

*Proposition 2b: Psychic distance between host and home countries accelerates the reshoring of manufacturing.*

Our results reveal a significant home region effect (Rugman & Oh, 2013): with EU companies presenting a shorter length of stay offshore, in accordance with previous findings on the duration of foreign joint ventures (Jiang et al., 2011) and of acquired foreign plants (Wren & Jones, 2009). This result may be explained by the different organizational archetypes adopted by US and EU companies to manage their subsidiaries. More specifically, the “multinational” archetype adopted by EU companies (as opposed to the “international” characterizing US ones) gives subsidiaries a higher degree of autonomy but is more sensitive to their financial performance (Bartlett & Ghoshal, 1989; Nurdin, 2011; Belizón et al., 2014). Therefore, if the subsidiary does not perform adequately, it is more easily shut down or relocated. In addition, US companies have been argued to implement an “international product life cycle” strategy, i.e., to transfer abroad manufacturing activities of less innovative products, for instance when the home market is saturated and the need arises to reduce costs (Vernon, 1966; Huang, 2014). Hence, they tend to exploit as long as possible cost advantages offered by offshore locations.

*Proposition 3: Differences in the organizational archetypes adopted by US and EU firms to manage their subsidiaries give rise to different length of stay offshore.*

Concerning firms’ characteristics, our results show that the firm size significantly affects the duration of the offshoring experience. In particular, small and medium enterprises tend to return earlier than large firms. One reason may be tied to the lack of strategic intent characterizing some SMEs (Rangone, 1999). SMEs are more prone to strategic mistakes,

which may be corrected by return to home country/region (Kinkel & Maloca, 2009). Second, due to shortages of internal resources (information, capital, and managerial experience), SMEs exhibit higher vulnerability to environmental changes, which makes internationalisation more challenging (Buckley, 1989; Lu & Beamish, 2001). On the contrary, the competences and resources of large firms increase their capacity to absorb uncertainty (Jiang et al., 2009; Penrose, 1959; Barney, 1991) and allow them to bear the risks of remaining offshore.

With respect to the governance mode offshore (insourcing vs. outsourcing), our model does not find any significant effect on duration, although a negative relation is expected, because of lower sunk costs, in terms of setting up production facilities, which act as “exit barrier” (Motta & Thisse, 1994; Pennings & Sleuwaegen, 2000). However, our result may be explained by the fact that in our sample firm size and adoption of outsourcing are negatively correlated. Hence, outsourcing may be considered a reinforcing factor for the likelihood of SMEs’ early reshoring.

*Proposition 4: SMEs are more prone to earlier reshoring.*

Turning to the analysis of the linkages between motivations for reshoring and offshore duration, our results suggest that strategic assets seeking motivations have a significant effect. This finding confirms previous studies (Ellram et al., 2013; Mudambi, 2008; Cantwell, 2009) that argue that strategic assets seeking motivations are becoming key in explaining (re)locations, if compared to efficiency or resource seeking ones.

In this direction, we find that quality related drivers increase the hazard rate by about 80-90%, the highest impact among the covariates considered in the model. This finding reflects the critical role of knowledge-related assets (Dunning, 1998) and synergies with local partners (Manning, 2013), i.e., typical strategic assets seeking variables, in determining the success of offshore initiative.

One reason why quality can be considered an offshore challenge (Gray et al., 2011) is tied to its knowledge transfer nature, with the complexity of the challenge increasing in the amount of tacit knowledge involved and in the differential of the base stock of knowledge between partners. Manning (2013) argues that organizational responses to complex offshore challenges depend on strategic objectives, available resources and perceived degree of control. If challenges are perceived to be outside a firm’s control, relocating becomes the likely response. When a company experiments quality problems in the early years of its offshoring experience, before it has gained experience and knowledge of the external environment, it may not be able to react and mitigate the problem, but may rather prefer to exit the country.

To the contrary, longer experienced firms who have succeeded in gaining control through effective knowledge transfer are less likely to revise the offshoring strategy due to quality issues.

Brand image may represent a strategic asset for companies operating in specific sectors or countries. Linked to brand image and purchasing intentions is the concept of “made-in”, or “country of origin” effect (Diamantopoulos et al., 2011). Traditionally, the country of origin has strongly influenced consumers' buying decisions for certain products made in some European countries (e.g., clothing and leather from Italy, cars from Germany, wines from France), whereas the attention and interest for products made in the US has risen only recently among American customers (possibly due to the diffusion of a “buy American” culture; see for instance [www.madeinusa.org](http://www.madeinusa.org)). Hence, loss of the “made-in” image when producing or sourcing offshore is more likely to represent a strategic issue for European firms than for American ones. Our survival model supports this contention, by showing that the made-in effect accelerates reshoring for EU-based companies, whereas the opposite effect is at play for US-based firms.

*Proposition 5: Strategic assets seeking motivations are likely to give rise to shorter offshore duration.*

Finally, it is worth of notice that our analysis has not provided any evidence on some potential drivers of offshore reversal that both theory and conventional wisdom would suggest. For instance, firms in capital-intensive industries have been shown to be less prone to offshore to low-cost countries, because of the relatively lower benefits in terms of labour-cost savings and the higher relocation costs (Kinkel & Maloca, 2009). By the same token, one could argue that the capital intensive nature of the industry should increase the duration of offshoring due to the presence of sunk costs acting as “exit barriers” (Motta & Thisse, 1994; Pennings & Sleuwaegen, 2000). However, this contention is not confirmed by our data: whereas some capital-intensive industries display longer stays (e.g., home appliances), others (e.g., electronics and automotive) exhibit shorter durations.

Although we have no clear answer to this finding, one clue can be found in Mudambi and Verzin's (2010) observation that - although the importance of the sector of activity cannot be denied, “transaction costs have significant firm-level components” (p. 1513). In particular, the disaggregation of value-chain activities in capital-intensive industries entails that components located at different stages of the value chain call for different governance modes, and different optimal locations that underlie the firm value proposition, thus reducing the industry's impact.

## 6. Contribution to practice and policy

In terms of implications for practice, our results strengthen the case for a careful evaluation of location decisions, and for re-evaluating decisions dynamically, taking into account the rapidly evolving characteristics of worldwide locations (including the home country and its nearby regions) and the firm's positioning and strategy. For this purpose, initiatives, either from private or public organizations, which support companies (in particular SMEs) in the ex-ante evaluation of their location choice play an important role. Examples are provided by the US Reshoring Initiative ([www.reshorennow.org](http://www.reshorennow.org)) that has developed a specific tool named Total Cost of Ownership Estimator<sup>TM</sup>, and by the advisory supports offered by the UK Trade & Investment and the Manufacturing Advisory Service<sup>3</sup>.

Next, the policy makers of western economies are interested in reshoring to recreate the manufacturing base (Guenther, 2012; Livesey, 2012; Pisano & Shih, 2009, 2013). However, the fact that only 24 out of 249 firms in our sample declared that they reshored production because of government incentives may signal that public policies meant to foster the return of manufacturing are not effective. This further suggests that policies other than generic monetary incentives must be implemented. For instance, since the “made-in” effect emerges as an accelerator of repatriations for European companies, the European Commission and national governments may strengthen their regulations concerning the country of origin of manufacturing products (see for this purpose the stricter “made in EU” marking regulation approved by the last European Parliament<sup>4</sup> or the “Origine France garantie” marking - [www.profrance.org/le-label-origine-france-garantie.html](http://www.profrance.org/le-label-origine-france-garantie.html)). Also, given that our data suggest that costs issues are the main motivation for reshoring, government and local institutions should offer specific incentives for automation and process innovation, which would further reduce the total cost gap between the offshoring destinations and the home country, leading manufacturing companies to return home (Arlbjørn & Lüthje, 2012).

## 7. Conclusions and limitations

This study contributes to the scientific debate throwing light on the determinants of the duration of manufacturing offshore experiences prior to reshoring.

Our results support the predictive ability of Dunning's conceptual framework to explain the duration of offshoring. In particular, results show that multiple industry, country, and firm

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<sup>3</sup> [www.gov.uk/government/news/new-government-support-to-encourage-manufacturing-production-back-to-the-uk](http://www.gov.uk/government/news/new-government-support-to-encourage-manufacturing-production-back-to-the-uk)

<sup>4</sup> [www.europarl.europa.eu/news/en/news-room/content/20140411IPR43453/html/MEPs-push-for-mandatory-made-in-labelling-to-tighten-up-product-safety-rules](http://www.europarl.europa.eu/news/en/news-room/content/20140411IPR43453/html/MEPs-push-for-mandatory-made-in-labelling-to-tighten-up-product-safety-rules)

characteristics are relevant to explain short vs. long stays abroad. In addition, strategic assets seeking reshoring motivations significantly affect the duration of the foreign experience. This has allowed developing some propositions concerning duration determinants that may orient future research.

We acknowledge some limitations of the study that future research should tackle, related to the nature of the data and to the explanatory variables adopted. With reference to the nature of the data, the heterogeneity of sources adopted carries the risk that some differences in the motivations for reshoring could be attributed to the interpretation/judgement of commentators. Second, cases collected concern primarily European and US based firms, thus not allowing conclusions about the existence and characteristics of reshoring elsewhere. Finally, the nature of data collection has not allowed comparing the characteristics of firms that have reshored with those of firms that have continued their activities offshore.

Concerning the variables included in the models, our explanation of duration does not take into account the impact of offshoring motivations in influencing the evolution of the location strategy. Next, attention to entry modes (greenfield, acquisition, etc.) could help clarify whether some entry strategies lead to shorter term initiatives with respect to others. Finally, lack of information on the post-reshoring performance of the firms analysed hinders the evaluation of the benefits of reshoring. To address these and other limitations is part of our future research agenda.

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