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MASTER DEGREE THESIS

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Master Degree Thesis

**Trends and determinants of
offshoring and reshoring: evidence
from the Italian manufacturing firms.**



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Abstract

Today, companies are global in their operations. The supply chain is no more restricted to a region or country and its various elements (purchasing, manufacturing, distribution etc.) take place on a worldwide scale. More and more companies are continuously engaged in the attempt to operate outside the boundaries of their domestic markets, either by exporting their products to foreign customers either by serving them operating through foreign subsidiaries in Foreign Direct Investments (FDI) either by contracting out to external suppliers or to move facilities in foreign countries the production and sales of the company's product to serve multiple markets. The worldwide nature of these operations comes out from location decisions to which the international business literature recognizes a crucial role for successful international trading.

Manufacturing locations, more specifically the possibility of offshoring, outsourcing or reshoring, has received a great deal of recent attention, especially in the United States where politicians centered their campaign's focus of "bringing back production to home country". From the early 1990s through the mid-2000s, the practice of delocalizing manufacturing activities was a significant part of the corporate strategy [1], essentially driven by cost reduction purpose.

Over the recent years, due to the economic downturn, the phenomenon of "backshoring" or "reshoring" emerged, conducting to the total or partial repatriation of the previously offshored production facilities. Offshoring and, in a limited extent also reshoring, have been widely investigated in academic studies and reports, in terms of drivers and consequences. The purpose of this thesis is to provide a complete framework of the existent literature and to provide evidence of these phenomena in the Italian manufacturing sector. The focus is on the key factors that affect companies' perception of the attractiveness of various region as location for owned or not manufacturing facilities, the importance of these factors, and how the importance has changed over time given the perceived risk of a region. Because of the complexity involved in the manufacturing location decision, key risk factors inherent in the manufacturing decision are also assessed. Findings show that drivers are different across regions and how organizations are increasingly concerned at their manufacturing location decisions through a broader lens, no more looking only at cost drivers but progressively giving attention to supply chain issues as well as strategic factors.

The thesis is organized as follows: Chapter 1, deals with the theory of internationalization; Chapter 2, introduces the phenomena of offshoring outlining the main findings of literature studies, while Chapter 3, instead, focuses on the backshoring phenomena. Chapter 4 describes the study performed on data available from two studies, on offshoring and reshoring respectively, by UniCredit on Italian firms.

Chapter 1

Internationalization

Today, companies are global in their operations. The supply chain is no more restricted to a region or country and its various elements (purchasing, manufacturing, distribution etc.) take place on a worldwide scale. More and more companies are continuously engaged in the attempt to operate outside the boundaries of their domestic markets, either by exporting their products to foreign customers either by serving them operating through foreign subsidiaries in Foreign Direct Investments (FDI) either by contracting out to external suppliers or to move facilities in foreign countries the production and sales of the company's product to serve several markets [2]. Internationalization as “the process of increasing involvement in international operations” [3] has received growing attention by the actors involved in process: companies which are in charge of finding the most efficient mode of operating in trade markets to be competitive in the global markets; governments in charge to assure that the process conduces to positive outcomes for the country; and trade unions which are in charge to protect the possible effects on workers, in terms of working conditions and wages.

The worldwide nature of these operations comes out from location decisions to which the international business literature recognizes a crucial role for successful international trading. Manufacturing locations, more specifically the possibility of offshoring, outsourcing or re-shoring, has received a great deal of recent attention, especially in the United States where politicians centered their campaign's focus of ‘bringing back production to home country’. From the early 1990s through the mid-2000s, the practice of offshoring increased significantly [1]. However, the economic downturn, a heightened emphasis on sustainability, and increasing customer expectations for flexibility and improved cost performance led firms to reconsider this strategy [4], conducting to re-shoring.

1.1 Internationalization forms

The term internationalization, as it applies to a business firm, can be defined as its involvement in business practices or activities, across national-borders [5]. Albaum et al. [6] define internationalization as “the successive development in a firm’s international engagement in terms of the geographical spreading in markets, products, and operations forms”. Within this general definition, market internationalization has encouraged companies to formulate diverse approaches to internationalized business. Foreign market entry strategies differ in the degree of risk, the extent of control and the level of commitment of resources and effort; this should be compared with the return on investment they could grant by operating there in. At a macro-level and focusing on the control aspect of the internationalization implementation, there can be defined two fundamental entry mode strategies:

- non-equity mode, which includes export and contractual agreements;
- equity mode, which includes joint venture and wholly owned subsidiaries.

Another distinction among the internationalization forms, focused on the degree of engagement, can be made in three categories: internationalization of trade goods, internationalization of the firm’s know-how, internationalization of the production. These forms mainly result in extensive activities such as Exports and Imports, Licensing, Franchising, Foreign Direct Investment (FDI, hence fort) and offshoring.

The market-entry technique of internationalization of trade goods is the one that offers the lowest level of risk and the least market control and results in the internationalization activities of export and import of goods, materials and services. Imports is defined as goods and services produced by host country and purchased by parent country. Exporting is the process of selling goods or services produced in home country to other foreign markets. There are two types of exporting: direct and indirect. Indirect export means that sales of products in the foreign country are carried out abroad by foreign agents and the firm do not pursue any direct sale activity connected with international market, because the sale abroad is treated like the domestic one. In the case of direct exporting, the firm becomes directly involved in marketing its products in foreign markets.

A higher risk along with higher expected return on investment but limited commitment of resources and efforts is related to the internationalization of the firm’s know-how. This can be done through licensing out intellectual property rights (such as patents, trademarks, copyrights, technology, technical know-how, marketing skills or some other specific skills), franchising giving the right to another company to sell the parent’s company products and so to exploit its brands, selling know-how all aimed at the technology transfer for the augmentation of goods sold abroad.

The internationalization of the production relates to FDI and offshoring. The International Monetary Fund (IMF) and the World Bank defined the FDI as the net flow of investment that involves a long-term relationship reflecting a lasting management interest – 10% or more of voting stocks - in an enterprise, operating in an economy other than that of the investor. It is generally seen as a composite package of capital, technology, and entrepreneurship that can affect positively the economy in the host economy through labor training, skill acquisition and diffusion, and the introduction of new managerial practices and organizational arrangements [7] but at the same time allowing the company to earn profits from selling goods and services in the foreign markets [8]. In order to define an investment as an FDI it is essential that the enterprise sets up a long-term relationship with foreign company, providing it with technical assistance and financing, and possess rights and equity stake. From a theoretical viewpoint, FDI can be divided into two categories: Horizontal and Vertical.

- Vertical FDI (VFDI) are meant to transfer stages of production abroad by breaking up the production process in different stages. One or several stages of production that takes place in the home country is moved abroad to affiliate subsidiaries positioned in the host country and the output is re-exported in the domestic market either to be re-introduce in the production cycle or to be distributed from the parent company. The aim of the vertical FDI is to take advantage of lower production costs in the host country and to pursue efficiency properly exploiting them in combination with the domestic country conditions. What can characterize this investment is that the investors are interested in forming partnerships with suppliers or even competitors, i.e. using same distribution network, in order to benefit from economies of scale, economies of scope and shared ownership.
- Horizontal FDI (HFDI) is a type of investment directed to replicate abroad the same activities as those performed domestically in order to serve local or neighbouring markets while avoiding trade barriers and transportation costs [9]. Horizontal FDI involve operating abroad in the same industry as a firm operate, or offers the same services as it does at home, and tends to produce for local or original markets only without exporting much output to host country [10][11]. It seeks to take advantages of a new large market serving the market via local production, which is considered as traditional motive for FDI. For instance, it is widely used by Japanese MNE's in their international expansion because they believe that this model will help to reduce the risk and enable them to share experience, resources, and acknowledgment that already have developed at home [12]. FDI are usually driven by market seeking strategies, replicating the whole production process of the home country and not only some stages of the production process – as for vertical ones - in a foreign

country. Horizontal FDI main characteristics are that most of the output of foreign production affiliates is sold in the foreign country [13].

These types of business relations could easily be related to offshoring and outsourcing despite the fact that these are strictly related to cost reduction strategies not oriented to serve foreign markets and the basis to call for offshoring is not a long-term relationship with a foreign affiliates or suppliers. Offshoring, as relocation of production activities in a foreign country, can be assimilated as a form of vertical foreign direct investment, where the investment is driven by cost reduction strategies but do not necessarily require any investment in associate company or taking part in a joint venture.

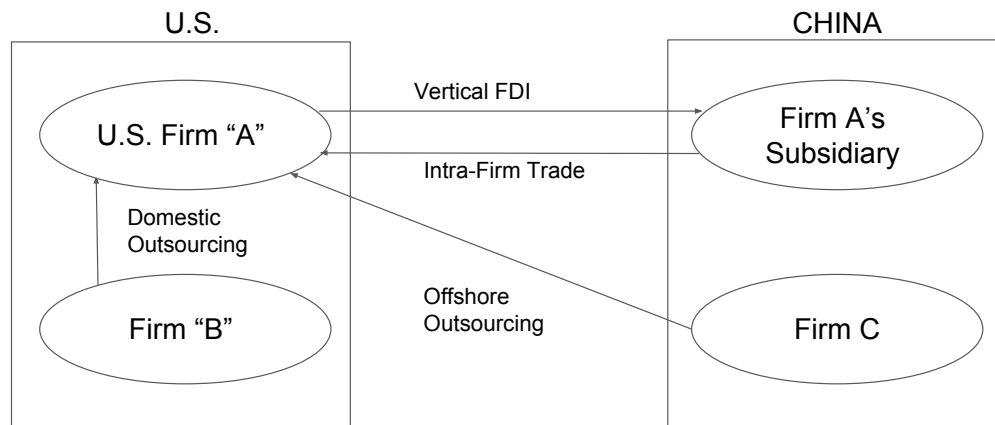


Figure 1.1: Representation of the differences between domestic outsourcing, offshore outsourcing, vertical FDI and intra-firm trade, using US as home country and China as host country [14].

Offshoring is pursued when a company finds better conditions in manufacturing in a foreign country due to lower costs of raw materials, workers or tax and duties. Clearly, offshoring and foreign direct investments are linked to each other, but the relationship is not exhaustive: neither offshoring takes place only within the boundaries of a FDI (international outsourcing), nor do FDI exist only to pursue offshoring strategies.

1.2 The theory of internationalization process of a firm

The process through which a company is engaged in internationalization is considered as incremental [15]. Time by time firms that operate in the field of internationalization operations tend to increase their commitment in these operations. Originally firms choose the optimal entry mode in the foreign market by analyzing costs and risks related to market characteristics and firm's own resources [16]. The incremental nature is mainly due to experiential learning experienced by the company operating in the international market. At the beginning the company is affected by imperfect information, but through learning by doing the company acquires knowledge on the characteristics of the specific national market, the typical feature of foreign customers, the structure of the market system and as a consequence new opportunities emerge to increase their engagement in the host country. As companies increase their level of international involvement companies also change the operation mode to serve foreign markets. Studies indicate that this change occurs in the direction of increasing commitment.

The typical pattern of internationalization begins from no exporting, to exporting via agent, to a sales subsidiary and finally to a production subsidiary. The idea below is that firms start to serve a foreign market before deciding to invest there [17]. As long as the market commitment increase, the diversity in the operations increases too and the internationalization process increments. This seems to be mainly due to the growing awareness of the foreign markets along with increased competences, knowledge and experience. In fact, as supported by [18], the uncertainty plays a crucial role in the engagement in international business. When deciding to operate in an international environment, there is no certainty about the sign of future profits and the only way to discover it is to start to operate there. A firm may test the profitability of a market through exporting its products to the foreign market until the moment the profits earned by exports are not enough to cover trade costs. In such a moment, the company will continue for intermediate levels to operate without investing there, but when time goes on and profitability decreases it will establish foreign affiliates through deals with intermediates, which come from focal companies in the foreign markets. As sales grew, firms will progressively substitute these intermediates with owned sales operations. The final step might involve establish manufacturing facilities in the foreign market to overcome trade barriers.

Growing the engagement in the diversity of the operations done in the host countries can also be due to the barriers created in order to obstacle the previously operating mode. As an example, exporting can be contrasted by the government of the counter-trade market by imposing grave taxes on exports that impose forward the shift versus other operational methods. As long as the exports are relevant to

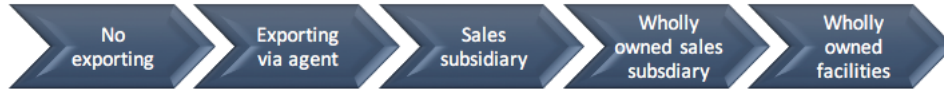


Figure 1.2: The internationalization pattern of enterprises.

the profitability of the company, the more the company will commit itself to prevent its revenues. Therefore, the company may try to maintain its presence in the host country implementing other forms of internationalization such as licensing to a foreign supplier or to establish a presence there through foreign direct investments. The assertion is supported by studies conducted in several countries. Conconi et al. [19] demonstrate that for all the companies registered in Belgium, in almost 90% of the cases, FDI entry is preceded by export mode entry. Jan Johanson and Jan-Erik Vahlne's [17] empirical observations from a database of Swedish-owned subsidiaries operating abroad show that the internationalization process starts with exporting entry mode. Above the conditions imposed by external entities, the internationalization process goes through several steps and not only by applying a preferred operational method properly because the long-term success in international trade is the outcome of the ability to apply a range of methods of foreign operations, which involves trial and error. Another feature of the internationalization pattern is the "physic distance" with respect to the domestic market. Firms tend to start operating in the field of internationalization business in markets that are physic closed to the origin market. The incremental nature of the internationalization pattern emerges also in the gradual entry to further distant markets as the internationalization continues [15].

1.3 Location Decisions

The worldwide nature of these operations comes out from location decisions to which the international business literature recognizes a crucial role for successful international trading. The focus is on the key factors that affect companies' perception of the attractiveness of various region as location for owned or not manufacturing facilities, the importance of these factors, and how the importance has changed over time given the perceived risk of a region. Findings show that drivers are different across regions and how organizations are increasingly concerned at their manufacturing location decisions through a broader lens, no more looking only at cost drivers but progressively giving attention to supply chain issues as well as strategic factors.

Many theoretical perspectives try to explain the drivers of manufacturing location decision. Transaction cost economics (TCE) focuses primarily on the make-or-buy decision, attempting to balance the market transactions costs and required specific asset investments with the potential risk of buying the item rather than making it [20] and, in relation to location decision, explain offshoring versus outsourcing decision. Using TCE, firms take their decision to make or buy by disaggregating the value proposition and finding, by a comparative analysis, the components over which the company should retain more control because fundamental to the value creation. The comparative analysis should be performed by considering the capabilities to create value and the ability to appropriate the value created. Conversely, the operations for which the company does not have enough competences and that are not crucial in the value creation should be bought in the market, namely outsourced [21]. This reasoning intersects with the geographical issue. The theory of transaction cost analysis brings firms towards a high level of control over resources that are crucial to create economic value and to outsource other components that, for contrast, are not prominent in defining the value proposition [22] [23]. It suggests that individual firms tend to move away from higher cost to lower cost regions, all else being equal. The attractiveness of a region or country also depends on the cultural distance with respect to the home country the firms belongs to; thereby areas which might be considered as extremely culturally different or where intellectual property do not grant companies protection over their operations and products make some regions inevitably less appealing. The international business literature outlines the importance of manufacturing location decisions: “...the critical choice of a multi-activity firm is whether it should internalize its intermediate product markets within its home country or in a foreign country; and that the outcome of this choice is primarily determined by the costs and benefits of adding value to these products in the two locations” [24]. The eclectic theory of international production by Dunning [24] proposed three determinants of international production by multinational enterprises (MNE’s): ownership advantages, location advantages, and internalization advantages. Specifically, in the context of manufacturing location decision, the location advantages part represents the core of the explanation of the reason why taking the right location decision is fundamental. Dunning identifies these several advantages:

- Resource seeking advantage: concerns primarily availability of raw materials and infrastructure. Resource seeking implies also the possibility of agreement with local partners, which could provide competences which are not core of the company but fundamental to the completion of the product and in this sense, they are also seen as resources.
- Marketing seeking advantage: concerns the availability and cost of local talent and suppliers to provide missing experience and knowledge at a lower cost,

but also access to domestic markets in a region with the intent of penetration and government economic policies.

- Efficiency seeking advantage: concerns either productivity either cost-related factor.
- Strategic asset seeking advantage: considers knowledge related assets, and synergies related to maintaining a local presence. For instance, gaining localized tacit knowledge, access to understanding of market and consumer patterns, and intangible and tangible synergy in general.

Location differences are dynamic and important in manufacturing location decisions. Based on the analysis of these theories, Tate et al. [25] proposed that drivers affecting a region's attractiveness for deciding to move manufacturing activities are not static, but dynamic since they change significantly over time, with the Government Trade policies factor increasingly gaining prominence in manufacturing location decisions as a differentiator to opt for a host country rather than another one. This explaining the competitive conditions that at the beginning of the offshoring wave foster companies to opt for locating their manufacturing operations in some countries and that do not grant anymore a competitive position due to the eroded conditions.

Government Trade policies comprehend tax advantage, subsidies and counter-trade requirements increase the attractiveness of North America, South Asia, Central/Eastern Europe and Middle East. The presidential election had a crucial impact in increasing the North American attractiveness as a location where moving back, in the case of outsourced American companies, or locate manufacturing facilities, in case of foreign companies, properly because campaigns have been concentrated in convincing the audience that North America is a favorable region to conduct business. Without filling in the gaps, for the moment, Trump policies maintain the promises of the campaign by supporting the returning of companies back to U.S and by making it even more appealing in the way it is perceived globally as a location to establish operations. But even more manufacturing location decisions are centralized around supply chain-related factors and the way the associated potential risk should be weighted decision [26].

The increasing importance of supply chain capabilities is the outcome of the previous path in offshoring process. Unsurprisingly, researchers [24] [27] found out that costs play the crucial role in defining the host country whether to locate the company's operations, inducing companies to base their location decision on the low-cost labor countries, namely 'low-cost regions' without considering the negative risk of supply chain interruption which directly converge into the loss of sales and the cost of recovery process [28] [29], thereby reducing the firm's overall profitably. Aware of the consequences of taking decisions exclusively based on labor costs, companies are increasingly moving beyond cost savings to consider impact on total

profitability and above all, the creation and the delivery of the customer value when driving the choice of the regions for manufacturing locations. Using Dunning's terminology, more recent research on the manufacturing location decision suggests a move away from resource seeking, primarily cost of labor advantage toward strategic asset seeking [30]. This includes greater interest in knowledge creation and value creation and value appropriation [26].

Chapter 2

Offshoring

Adam Smith (1776) famously described the division of labor in a pin factory in late eighteenth century England:

“One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which in some manufactures, are all performed by distinct hands, though in some others the same man will sometimes perform two or three of them.”

The main issue was increase productivity and higher productivity involved, at that time, clear separation and specialization of the tasks to be performed. The fragmentation of activities allows blue collars to focus on their performance, favoring the raise of experiential learning. Physical proximity was crucial to coordinate the various production activities and this pointed to agglomeration in production rather than fragmentation in their location, farther the uneconomic implication of coordinating production activities in remote locations. The traditional way of pursuing business was based on producing goods in a single localized factory and then ship the products to customers. The only aspect involving internationalization was serving geographical distant markets. Almost two centuries later, the up-and-coming emergence of globalization and revolutionary progress in communication and information technologies changed the shape of business, making it possible to break-up the production process in separated time and space activities. Companies still produce goods from the beginning to their completion, but they are increasingly involved in global supply networks (GSN) in which operations are no more locked-in in the boundaries of the companies they are fundamental to but they are performed overseas. Global supply chain involves workforce, knowledge and materials required in

manufacture complex industrial goods or knowledge-intensive services to be provided beyond the geography location of the firm or its ownership.

2.1 The offshoring phenomenon

The direct outcome is the offshoring phenomenon. It is defined as the ‘relocation of business to foreign countries to take advantage of a supply of skilled but relatively cheap labor’. This definition has progressively loose meaning given the results to which offshoring led to. Recent academic literature defined offshoring as ‘the transnational relocation or dispersion of ... activities’ [31], thus underlying the multitude of activities that could be offshored and the nature of being a coordination process of business functions across national borders [1].

Referring to MNE’s, offshoring describes the situation in which a multinational firm (MNE) relocates some stages of production abroad to either one of its affiliates, in which production activities are performed within the MNEs’ boundaries but outside the company’s headquarters region or to an unaffiliated supplier; in this ultimate case the production activities are transferred to an external entity by means of a contract and that it is usually referred to the case of international outsourcing. The two cases cited above are linked to the ownership mode chosen by the delocalizing company, implying in the former the transferring of production capacities into other existing or newly built manufacturing locations of the own corporation (make) and in the latter shipping production capacities to external suppliers (buy).

The term offshoring is widely used to indicate a broad range of operations, ranging from international outsourcing and purchasing, which can be considered as in-house offshoring [32] to the operation of the wholly outsourced activities performed externally by a local provider. Therefore, even if the actual meaning of offshoring is to describe the relocation of activities abroad within the MNE’s, it is often used as a broader term to define whatever ownership mode and spatial dimension is implied in the moving of production activities abroad. Further, offshoring refers to sourcing rather than sales activities which could lead to the assertion that access to new markets do not represent a primary driver for offshoring [1]. With globalization of markets, new opportunities of ICT and with better traffic infrastructure, manufacturing offshoring is becoming an increasingly interesting option for firms of all sizes [34]. In fact, acting globally is no longer a strategic option only for giant multinationals. More and more Small and Medium-sized Enterprises (SMEs) are getting involved in this arena [35] [36] even facing higher risks with respect to the MNEs.

The definition of offshoring can be served according to the type of activities that are relocated abroad:

- material offshoring defines the relocation of production activities;

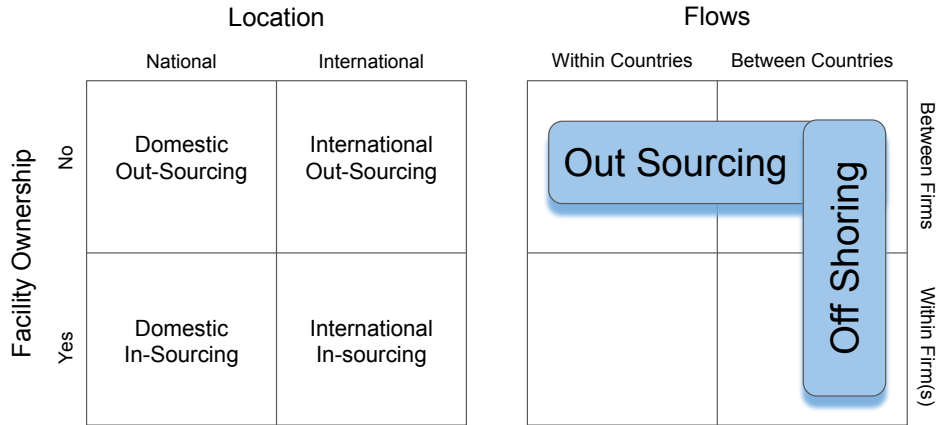


Figure 2.1: Out-sourcing vs In-sourcing [33]

- service offshoring the relocation of service activities (e.g. call center operations, back office activities, accounting and the like).

Material offshoring has experienced a rapid expansion since it was easier to relocate production activities rather than service ones. More recently, thanks to improvements in information and communication technologies that have eased the tradability of services, the practice of offshoring has been extended to service activities [37].

2.2 The Governance mode of offshoring

offshoring can be implemented in different ways according to the governance mode and to the extent of the operations that are object to a relocation strategy. The governance mode implies, at a macro-level, the distinction between captive offshoring and offshore outsourcing. Captive offshoring involves the situation in which manufacturing activities are still performed within the company but in off-shore location [38], while offshore outsourcing conduces to contracting out, to external suppliers in low-cost countries, activities that were conducted internally by the company. Referring to TCE, captive offshoring can be regarded as the “make” alternative, i.e. transferring activities to either affiliated or by means of a new facility locate in the offshoring destination, while offshore outsourcing reflects the “buy” decision

to source manufacturing operations to external providers. The ownership mode is reversed on the contractual/legal agreement, that can range from pure contract outsourcing, to joint ventures to a fully owned subsidiary (Robinson The ownership mode decision is influenced primarily by firm’s related factors including financial resources [1], firm’s capabilities [39], and the level of specialization of the tasks required to be performed to create value [40]. Implementing captive offshoring requires a high initial investment rather than offshore outsourcing with greater sunk costs. A location strategy like this one needs large resources that are not necessarily related to the size of the firms, while an offshore outsourcing requires limited resources properly because the company does not have to create a presence in physical terms in the offshore markets but rather it has to define the transaction costs related to the outsourcing contract.

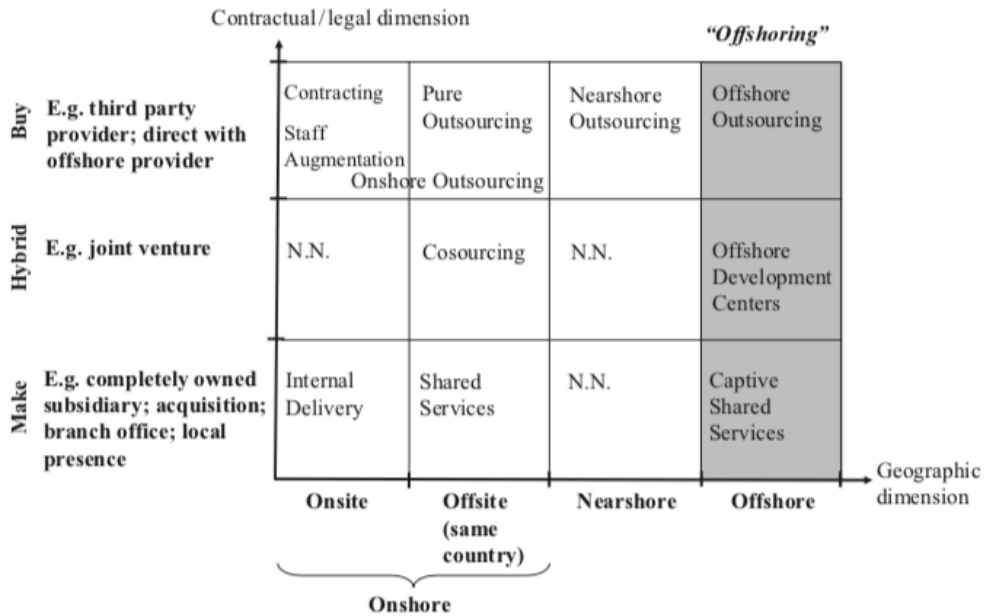


Figure 2.2: Forms of internationalization by contractual/legal and geographical dimensions.

When involving the transfer of manufacturing activities, offshoring and outsourcing strategies lead to the fragmentation of the firm’s value chain into smaller and smaller parts, that could be either offshored or outsourced in a broader sense. This strategy consists in the splitting up of the production process with the aim of optimizing the production of each product and component through the decision of who should produce it and what is the best location where to produce it [41]. The decision should be taken based on the level of standardization/specialization of the

tasks and on the core competences/value creation. If tasks are standardized and are not core/core for the company or in the case of tasks that are not core to the company, they should be outsourced to an external supplier. While if tasks are core to the creation of value and involve the company's core competences, it means that these tasks are fundamental for the company to be competitive in the marketplace and are the ones over which the company should improve its core competences, so the company should retain these activities by performing them internally, even in a host country. Beside all, standardized activities that are outsourced to an external supplier are easily to be monitored by the outsourcing firm. If, instead, tasks are specialized but are not core for the company, the firm should take advantage of specialization and scale economies in components or production process by outsourcing to external suppliers these tasks. The established contract between the parties, the outsourcing company and the external supplier, involves no direct equity control over the outsourced tasks. Even if the control is reduced, in the particular case of specialized tasks, the contract cannot be retained as pure arm's length contract because it implies a long-term relationship between the parties and an exchange of a greater amount of information to perform properly the tasks required by the outsourcing company in terms of instructions and specifications.

In order to identify an indicator for the level of outsourcing, there is no clear evidence of what might be considered as outsourced and not. A raw measurement refers to the ratio of material intermediate inputs to output and it is considered as a broad indicator since it includes raw materials purchase and arms-length purchases of standardized components in the market. This is true if with the term outsourcing we refer only to a relationship that is set up in a long-term perspective and that involve a continuous share of information. In this optic, purchase of intermediate inputs through a usual market channel do not follow within outsourcing. For these reasons, a narrower indicator considers the production works done by other firms as an indicator of the production tasks performed abroad that are relevant to identify the extent to which a firm uses outsourcing as an instrument to be more efficient. Even if outsourcing do not require large resources to be implemented, it entails, according to Transaction Cost Theory [20][42], significant transaction costs. Outsourcing process usually entails a scouting phase to identify the target firms that might have the required competences and to which search costs are associated, a negotiation phase to estimate the true value of the contract that might be established between the parties entailing negotiation costs and when a contract is created, there would emerge problems in the execution of the contract by the parties which bring to coordination costs and the emerge of incomplete contracts. At the same time, outsourcing increase flexibility in production capacity to be able to respond the demand changes by reducing overall costs.

2.3 Who offshore?

Offshoring of manufacturing processes increased significantly in the US, UK and Europe from the early 1990s to mid 2000s with key drivers being the low cost raw materials and labor available from developing countries [4]. While offshoring decisions should not be based solely on price [43], a dominant perception is that a firm's primary objective for offshoring is to reduce production costs by targeting low-wage sourcing locations [44]. Reductions in quotas and trade barriers have enabled firms to offshore to predominantly developing countries where low labour and raw material costs have provided substantial savings [25], as well as access to resources, technology, skills and knowledge [1].

Internationalization research originally focused on the activities of the multinational enterprise [45] [46] [47] [24]. They frequently operate within a narrowly defined market niche and cannot afford to target only their home market. Tomiura [48] suggests that SME's face higher search transaction costs due to stronger bargaining power of large firms, that might find, in the case of offshoring outsourcing, contracting out manufacturing activities to external and foreign partners probably in less time and with less risks of holding up. International business literature recognizes the growing relevance of SMEs' internationalization, yet it remains largely focused on the export transaction as the predominant entry mode [49][50].

The 'traditional SME path' can be described as an incremental approach to internationalization, establishing SMEs in their domestic markets before initiating export activities [15] [17]. More recent research has identified additional internationalization patterns for SMEs like the 'born global pathway' [51] [52] or the 'born-again global pathway'. These models describe radical international business options for knowledge or small service-intensive entrepreneurial firms, however, they also focus on the export entry mode. Along with size, the analysis performed by Tomiura 2003 tries to investigate other firm's level characteristics that distinguish foreign outsourcing's firms from domestic outsourcing, covering all manufacturing industries. Even if less than three percent of the firms are outsourcing their production across national borders, the study puts in evidence how productivity, foreign business experience, firm's human skills, the type of production and R&D expenses affect the probability of outsourcing production abroad and demonstrate that the value of foreign outsourcing tasks is a significant share of total sales. In particular findings show that Japanese firms involved in across-borders outsourcing are the ones characterized by more productivity and by labor-intensive products, such as leather, rubber or apparel industries. The justification might be that foreign outsourcing may provoke a higher productivity due to contracting out the main labor-intensive tasks being concentrated on activities that involve core competences. The relevance of firm's size and foreign experiences is justified in the model by the prominence of entry fixed costs in outsourcing contracts, reflecting extra costs of integration and

communications between the parties besides search costs to find the most efficient and specialized supplier. High human skills and R&D expenditure seems to be a marked factor to foster companies to outsource suggesting that higher technological or managerial capabilities significantly impact of extensive foreign outsourcing.

Costa e Ferri (2007) points out, analyzing the Italian Manufacturing firms, that size of the firm and its share of exports on turnover are the most remarkable firm-level factors impacting the probability to investing abroad in terms of international production outsourcing (INPOU), along with a partial industry effect. In fact, belonging to traditional “made-in” and scale intensive industries rises the propensity to outsource production abroad. This is explained in the analysis by the threat of Chinese competition on traditional manufactured goods.

Kinkel, employing data from the European Manufacturing Survey (EMS), reinforces the crucial role of size and productivity, in terms of revenues per employee, and a marginal role of exports in the choice of locating manufacturing production abroad, but do not support the function of innovation as a factor to encourage offshoring. On the contrary, firms operating in traditional industries and in particular belonging to machinery and equipment, electrical and optical equipment and transport equipment production offshore more than the ones concerned with specialized products. The study compares also the firm’s membership to a particular country in affecting offshoring, leading to the evidence that being a Dutch, Danish/Finnish, or Swiss firm has a significant positive effect on offshoring as compared to being a German, Austrian or Slovenian and Croatian firm.

2.4 Offshoring drivers

One stream of academic literature shares the popular perspective that the primary objective of offshoring is cost minimization through the relocation of business to low-wage locations [53] [8] [54]. Cost minimization factors include not only wage differentials, but also interest rates, development of capital markets and capital costs. As an example of wage differentials, a comparison of the hourly wage for book keeping services reveals that the Indian costs make up a mere one third of the costs in the USA. For those industries that are labor-intensive, such as apparel and furniture, where most of the required work is hands-on, the wage gap between western countries and less developed countries truly matter in fostering companies to move their production activities there to reduce the main source of cost. Even if the wage conditions continuously change over time filling the gap, labor regulations in non-industrialized or developing countries are less stringent providing firms the conditions to fully exploit the possibility of reducing the labor cost. Cost savings also concern lighter fiscal regimes, lower energy cost, the possibility of accessing the needed inputs from low-cost suppliers and benefiting from specialized supplier

economies of scale and scope outsourcing production [8][55]. A study from McKinsey Global Institute has estimated for example that during 2004-2005, U.S. companies saved about \$0.58 for every dollar spent on jobs they moved to India (Farrell, 2005). Another stream of literature views offshoring as a more general location strategy that incorporates cost minimization and knowledge seeking [56] [57][1] [58] . offshoring can be seen as a new form of internalization by which firms disaggregate their value chains in many sub-activities across multiple locations by replacing them or considering the option of potentially externalizing specific processes and capabilities to third-party providers, always be focused on building a global network in order to improve the firm's capabilities [59]. Empirical studies cover the most relevant categories of motives for manufacturing offshoring activities, production (cost) and market motives, push and pull factors, proactive and reactive ones. A review of the literature based on offshoring allows the identification of the major motives to establish a production presence abroad, through outsourcing or offshoring:

- access to low-cost production factors is the primary factor guiding companies to move facilities or to contract out production tasks abroad. Companies will opt for outsourcing or offshoring when externalization of certain value chain phases allows them to reduce costs, i.e., when de-internalizing has more advantages than in-house production. Decrease of cost levels of production and transactions costs can be achieved by perceiving low setup costs and with the use of low-cost labor.
- gaining flexibility through outsourcing is a strategy to abate constraints due to production rigidity. Nowadays companies are coping with the greater complexity of product differentiation. Customers are no longer satisfied by a standard product and are increasingly demanding for more specialized features of the product, which implies for the producer greater flexibility in the production process. The producer could decide to outsource the customization of the product to external suppliers in order to deal with the emerging and always vary need of the customer. As such, the producer will concentrate on the activities that are based on its core competences so to be more efficient and competitive and, at the same time, he will contract out the manufacturing of the specific tasks needed to respond to the client's desire [41];
- access to markets and support of trade and distribution: moving manufacturing facilities to developing countries grants access to those markets in phase of development characterized by demographic increase and to be in the conditions to serve them properly reducing lead times and being competitive, resulting in new revenues [8] [43] [60]. Moreover, this would increase also the company's flexibility and responsiveness to changes occurring in the local market [32] ;

- proximity to customers and support of services: flexibility and the ability to deliver to the customer are crucial to serve multiple customers. Despite advanced logistics practices, the supply time demanded by customers in different international regions could not be achieved by production facilities in the home country alone. Here the primary scope is to accelerate the growth locating activities to a new country where a market penetration has been already made to further expand existing business and to serve new markets [61].
- access to technologies: improved technologies leads to lower costs of transportation and communication to contribute to the feasibility of operating across the globe [62].
- rise of productivity due to offshoring and outsourcing: offshoring of much of the production in the IT sector resulted in lower prices of high tech equipment, which, she argues, stimulated the diffusion of high tech equipment and gains in the productivity [63]. In case of growing demand, production capacities available in the home country could be not sufficient to cover the emerging demand; thus, directly comes out with an enlargement of the capacities that could not take place in the same country of the others well-established companies. Even if in contrast with the idea of doing offshoring to reduce costs, if the primary objective of the company is to improve efficiency offshoring might deserve improved service levels and the redesign of business processes.
- access to resources and materials: companies might need to invest abroad in order to secure fundamental assets [24], like strategic raw materials, skilled workers and to gain proximity to knowledge hubs like universities and research centers [64] [60], especially when competition is based on product differentiation and innovation [65]. Access to qualified personnel is fundamental for companies involving highly skilled tasks and, by consequence, even if the personnel would have an higher costs, this is contemplated by the company who decide to search for the competences it needs in a foreign country [1]. This is the case of companies for which qualified people are not widely present at the company's home country and that want to find new resources such as new knowledge clusters.
- Counter-attacking competitors and seeking other strategies assets: this is a mere entrepreneurial driver.
- Tax incentives and benefits: taxes, levies and subsidies may contribute to the decision to production offshoring.
- Knowledge spillovers: location strategy is a key tool to assure knowledge spillovers due to the tacit and uncodified nature of knowledge. Absorptive

capacity, hence the capability of use external knowledge to effective use, requires interaction with knowledge holder for which proximity is substantial. Chung et al. [66] argue location choices are no longer exogenous to knowledge spillovers but are the outcome of the intention of the firm to expand its knowledge base through spillovers achievable through the access to new technologies, skills and knowledge that do not exist or are not fully exploited in the home country [30].

2.5 The effects of offshoring

The rapid growth of the shift abroad of economic activities has sparked debates on the risks and opportunities of an even more integrated global economy. In the manufacturing sector, offshoring is recognized as a booster of productivity gains reconciled by steep employment decline. Hence, offshoring is typically assumed to be welfare-enhancing [67] [68] in terms of the productivity growth to which it leads to. Offshoring may lead to productivity gains through different channels, increasing the efficiency with which inputs are used. Firstly, fragmentation of the production process conduces to the offshoring of non-core activities gaining in the productivity either of offshored activities and of the ones that will be performed internally in the domestic country. For instance, manufacturers might outsource tasks to foreign contractors with greater expertise, improving their productivity [69]. Then, offshoring is fostered by the cost reduction of production inputs, generating resources to be invested in productivity-enhancing production process for the remaining core business. Saving costs as an efficiency seeking factor is a key driver for sourcing production or supports functions abroad especially in the North-European countries. Finally, another reasoning can be found in the higher quality and greater variety of offshored inputs thereby boosting productivity. Nonetheless, the main downside of offshoring is its redistributive effect in lowering wages and employment of certain categories of workers – essentially low-skilled workers [70] [37]. The evidence comes out from the U.S. manufacturing sector where employment began declining steadily in the late 1990s, with a dramatic decline after 2000 which shed 20 percent of employment or roughly 3.5 millions jobs from 1997 to 2007, even though output was 10 percent higher.

The decline of manufacturing employment in industrialized countries along with the rise of productivity coincided with an increase in outsourcing of materials to foreign suppliers and in offshoring of production activities to foreign companies or affiliates. The doubts primarily concern the view of productivity growth as a basis for improvements in workers' standard of living, properly because the evolution of workers' conditions has not accompanied the rapid growth in productivity [71].

This evidence has raised concerns about the relationship between offshoring and

the productivity growth in manufacturing, especially of the issue of overstated statistics due to measurement problem. Some studies point out measurement problems and methodological issues, given the difficulty in accounting the net effects of outsourcing and offshoring. Offshoring intensity is often measured through the share of imported intermediates in total non-energy inputs.

The simplest productivity measurement is labor productivity and in the manufacturing sector it is computed as the ratio between the index of the value of shipments adjusted for the inventory change and net of intra-industry shipments in the current period divided by the index of labor in the current period as the sum of hours worked by employees of the manufacturing establishment. Labor productivity is a limited measure. Increases in labor productivity may be the outcome of the ability of workers of producing more with given amounts of other inputs or may reflect technological improvements or the substitution of other inputs of labor. The outsourcing of labor to foreign suppliers or affiliate should be considered as a substitution of manufacturing labor for labor located in a different country. Instead, outsource or offshore work increases labor productivity given that it is no longer considered employed in the manufacturing sector and is not counted in the labor index.

Given its shortcoming nature in accounting for other drivers besides human labor, labor productivity is substituted by multifactor productivity (MFP), that measures also the effects of import price. MFP decomposes the sources of growth in productivity among capital (K), energy (E), materials (M) and purchased business services (S) and represents the change in productivity to all input factors used in the production [63]. This measure, even though taking into account the diverse sources of productivity, tends to overestimate the growth in the productivity. The KEMS models assumes all factors are paid at their marginal value. The primary reasoning of offshoring lies on saving from low-cost labor. In fact, manufacturers involved in offshoring practices reduce their own labor and capital inputs and increase purchased inputs. The failure of the measurements is to capture the substitution of purchased inputs for their own labor and capital. For example, for U.S. statistics the estimate of manufacturers' use of employment services, intended as a "persons who are not on your payroll but are supplied through a contract with another company to perform specific jobs (e.g., temporary help, leased employees)" was not based on direct evidence, but rather was imputed from data collected in the Business Expenses Survey (BES) [72]. If a company substitutes employees with equally productive foreign contract labor, they do not count anymore as employees hired directly by the firms but the are treated as a separate input and they count productivity gains because of derived cost savings, even if the output per worker hour is not changed [73]. This means that by using foreign employment services, comprised primarily of temporary help and leased employees, a company take advantage of cheap labor and the relative cost savings accounts for a productivity gain [74].

Along with a fictional increase in productivity, outsourcing and offshoring created pressures on workers' wages in developed countries, contributing to the growth of inequality. Over the past decades firms in well-developed countries have increasingly engaged in offshoring by either relocating low-skilled labor intensive production steps to foreign affiliates or by contracting out tasks to be performed by an external and foreign suppliers. In both cases, the point is that the tasks can be easily performed remotely. In this regard Levy and Murname (2004) point out how the routine tasks – be they cognitive or manual- are easily subject to be off-shored, while others like expert thinking, complex communication and non-routine manual labor are more difficult to be moved abroad. The cost-saving driver leads companies to off-shore/outsourcing these routine tasks in less developed countries, where workers are inevitably unskilled and the wages are lower. The degree of offshoring might have positive and negative effects on the employment. The positive effect could arise if cost savings through offshore render the firm more competitive by increasing its market share, otherwise negative effect could result in downsizing the workforce and relocating all the production abroad. The negative effect is supported in the literature by sustaining that material offshoring worsens wage inequality between skilled and unskilled workers; it also seems to make employment more volatile, by raising the elasticity of labor demand and the risk of job losses. Other findings suggests that a cost-driven manufacturing offshoring has a more negative impact on the employment situation at the home base than market seeking driven activities, for which the relocation seems to be job exporting. Drivers for the resulting positive balance at the home base are, first of all, sales potentials in the case of acquiring new markets or producing in the proximity of the customer and sometimes also the possibility to improve the price competitiveness via mixed calculations, helping to secure jobs or even to create new jobs at the domestic location of the company.

2.6 Opponents and supporters of offshoring

Offshoring and foreign activities of multinational enterprise (MNEs) has been at the center of harsh protests during the last two decades, reaching its eight at the onset of the last US presidential election. Opponents of globalization argue how offshoring and outsourcing activities' effect is to deteriorate the condition of domestic employees and are continuously calling for policies that would penalizing companies that want to internationalize their operations. These opponents have been supported by Trump's political interventions and publicity about the operations of "bringing back job to US" by imposing heavy tax on offshoring activities through Anti-Offshoring Legislation. In particular, the aim is to punish offshoring companies with a 35-percent tariff on imports they ship back to the U.S.

It is indeed easy to find examples of firms that have fired domestic employees, or

exposed them to wage cuts, after the decision to expand operations abroad. At the beginning of 2018, United Technologies Corporation (UTC) began laying off another 215 workers at its Carrier plant in Indianapolis. The job losses are the last phase in the program of layoffs UTC announced in February 2016 as it shifted production of air conditioners to Monterrey, Mexico. Similar experiences are definitely harsh for the workers involved and should be tackled with effective policy interventions.

Actual policies have the aim of preventing firms from internationalizing their activities, without considering the positive effects of offshoring strategies. Internationalization such as offshoring can provide substantial gains to the country firms belong to. Such kind of gains are, for instance, increased productivity net of overestimates, incentives to innovation and economic growth. Productivity gains and economic growth [75] [73], along with cost reductions stemming from offshoring may enhance living conditions in developed countries, eventually lowering product prices and drive up real wages. Other arguments sustain that potential long term benefits related to offshoring can accrue to a country from foreign activities of its firms, providing less developed countries with substantial economic benefits. For instance, the amount of medium quality job created in the host country thanks to offshoring may increase their domestic consumption fostering imports from developed countries. Finally, proponents of offshoring continue to argue that the negative effect of employment levels in developed countries is a short-term effect of offshoring. Furthermore, to the extent that low-skilled activities are increasingly offshored to low-wage countries, labor demand in the home country is expected to be shifted towards high-skilled activities within industries, raising the transition toward more rewarding occupations, although incurring in the temporary adjustment costs covered in the long-term by skill premium wages [76].

Indeed, labor market developments at the aggregate level mask the adjustment costs that can occur in the short run, in the form of job displacement or earnings loss for certain workers. The loss in earnings is found to be significantly larger for trade-displaced manufacturing workers who change industry [77]. Several studies suggest that industries with increased exposure to international competition are associated with higher rates of temporary unemployment.

An effective policy would therefore allow the potential and substantial gains from offshoring to be realized, by forcing companies to spread them out more evenly over the national workforce. To this purpose, the policy makers need to know the magnitude and the nature of the labor market effects of these internationalization strategies and this is probably the main reasons why most research on the phenomenon and its economic impacts has focused on concerns related to labor markets .

Chapter 3

The Reshoring Phenomenon

3.1 Definition and terminology

Re-shoring, as such, is fundamentally concerned with where manufacturing activities are to be performed, independent of who is performing the manufacturing activities in question – a location decision only as opposed to a decision regarding location and ownership [78]. Re-shoring is a voluntary location decision to relocate activities back to the home country of the parent company after having implemented an offshoring decision in the past, regardless of the ownership of the activities re-shored [79] [78]. These concepts have been stressed by Frantocchi et al. [80], according to whom a comparative analysis of the definitions found in the literature and, which capture different features of a common underlying concept, leads to the following characterization of back-re-shoring:

- it is the reverse decision with respect to a previous offshoring process;
- it does not necessarily involve the repatriation or the closure of the whole of a company off-shore activities or of a whole plant;
- it is essentially a decision to relocate, irrespective of the governance mode (in-sourced and out-sourced) in the offshore country.

The first definition points out that re-shoring necessarily implies a previous decision to locate manufacturing operations offshore, thus underlying the attempt to correct from one perspective a previously wrong location decision that caused performance shortcoming and on the other side an adaptation to new environmental conditions [80] [43].

The second indication takes out the obligation of relocating the whole company's previously off-shored manufacturing activities to be defined as re-shoring.

Re-shoring can entail the repatriation only of part of the operations, while the others can be still performed abroad. The evidence from manufacturing firms shows that the case of a narrow range of re-shored activities is the most widespread everywhere.

The third proposition points out the nature of a relocation decision as a location decision rather than the way with which offshoring or re-shoring is implemented and consequently in a the definition of re-shoring the responsibility of whom has to perform the activities lose meaning. Some authors [79] [81] [82] argue that re-shoring strategies imply contextual in-sourcing decisions while others (Arbjorn and Mikkels, 2014) sustain that location decisions are conceptually independent of governance mode decisions.

The action of re-shoring may have different starting points with respect to why the work was originally offshored in a foreign country, when it was offshored and where and to whom the work was intended to be performed, which means re-shoring cannot be examined ignoring the precondition that lead to the decision of offshoring. According to the governance mode (in-sourcing vs outsourcing) and the location decision (home vs host country), the literature identifies the following four possible manifestations of reshoring [78]):

- in-house re-shoring, in which a firm fulfills demand in its local market by relocating manufacturing activities being performed in wholly owned offshore facilities back to wholly owned-based facilities;
- reshoring for outsourcing, in which a firm fulfils demand in its local market by relocating manufacturing activities being performed in wholly owned offshore facilities back to home-based suppliers;
- reshoring for insourcing, in which a firm fulfils demand in its local market by relocating manufacturing activities being performed by offshore suppliers back to wholly owned home-based facilities;
- outsourced reshoring, in which a firm fulfils demand in its local market by relocating manufacturing activities being performed by offshore suppliers back to home-based suppliers.

When dealing with reshoring of manufacturing activities previously carried out in an owned facility abroad, terminology distinguishes in direct back-shoring (Renz, 2005), internal back-shoring [43] e captive backshoring [61].

Along with the combination of location and governance mode decisions, reshoring depends also on the target markets for products manufactured offshore; more specifically Zhai et al. [83] consider the following alternatives to identify the target market:

home market, host market and regions around the home market. Another classification can be made according to [84] in relation to the strategies implemented to take advantage by reshoring:

- Tactical reshoring: the reshoring is implemented by searching for the best location where to move high value added manufacturing activities, pushed by resources or capability seeking;
- Development reshoring: made to upgrade product and services;
- Home reshoring: forced by disappointing results of their previous offshoring experienced and by the mutated host country environmental conditions.

Reshoring is a worldwide definition of the phenomenon of reversing a previous location choice. However its full comprehension is permitted only by defining the whole spectre of phenomenon that are related and included to reshoring. Pointing out the definition of reshoring as the process of “moving manufacturing back to the country of its parent company” [79], there are a number of other narrow definitions:

- Back-shoring implies the relocation of value creating activity from foreign suppliers or from a location abroad to the domestic production site of the domestic country [43].
- Back-sourcing involves returning back to the parent’s home country production furnished by an external provider.
- Near-shoring is a form of reshoring in which the decision to relocate geographically some operations or the whole production is conducted by the choice of localizing them in a foreign country in the same region of the firm’s home country.
- De-internationalization is the concept of reducing the company’s engagement to any internationalization activity through any voluntary or forced action [85]. De-internationalization can be partial or total, according to the extent of the value creating operations involved in the reduction [80].
- International divestment is the reduction of ownership percentage in a FDI [86]. As opposed to de-internationalization, the reduction is not related to a single operation, but to the offshoring subsidiary as a whole. The international divestment does not necessarily entails the relocation of production assets in the domestic country, should it be the case, the offshored production could be relocated in a furthest country as compared to the domestic country [87]. The latter case is known in literature as the “further off shoring”.

Each definition captures a particular feature of the way a firm can decide to take action over the failure of previous location strategy. Outlying the differences between reshoring and de-internationalization and international divestment is crucial, being the reshoring a special case of them. The reshoring accounts for the relocation of production activities, that could be the entire subsidiary or a limited task, and so it could be consider within the boundaries of a partial de-internationalization. The reshoring entails the moving back to the domestic country of the production in contrast with the international divestment. Reshoring concerns the relocation not only of activities performed internally but also of the ones outsourced to host-country suppliers and, furthermore, encompassing from the possibility to perform them in the domestic facility or to assign them to a domestic supplier. Frantocchi et al. [80] conceptualize the above-mentioned views into a unified and operative definition of the phenomenon as the “a voluntary corporate strategy regarding the home-country’s partial or total relocation of (in-sourced or out-sourced) production to serve the local, regional or global demands”.

3.2 Offshoring and Re-shoring

The first location strategy decision was associated to what can be defined as the first global shift. This shift corresponded to the relocation or offshoring of manufacturing activities to low-cost locations and was, at a first view, considered as a permanent transfer causing the de-industrialization of developed countries against low developed production locations. Offshoring was view as a necessity given the price demand of customers and the cost advantage deriving from lower labour costs, cheap commodities, and favourable exchange rates [88].

Offshoring requires dynamic strategies in order to govern complex systems of interlocking value added activities positioned across different countries and imply a continuous evolvment and adaptation in order to respond to exogenous environmental, technological and social factors, as well as new endogenous strategic priorities. The idea of offshoring as a permanent transfer has been eroded since the eighties, when a combination of the economic forces above has cooled the cost advantage, making the offshoring to be no longer a unidirectional phenomenon and forcing companies to exploit the possibility of reversing the process of offshoring. Fine [89] states that “the big names at the end of the chain have come to realize that the lowest price can mean highest risk – and highest risk can mean high total costs.” GE recently announced a 1 billion investment to reshore the manufacturing of washing machines, fridges and heaters from China back to plants in the United States, in Kentucky for which probability of closure was extremely (The economist, 2013). GE is by no means a maverick in its reshoring agenda; based on recent surveys, about 38% of firms believe that a direct competitor has reshored [4] and 14% definitely

plan to reshore. Even Apple announced its plans to manufacture one of its Mac lines exclusively in the USA, starting in 2013. In addition to large firms like GE and Apple, smaller companies are also reconsidering their international location strategy; one prominent report lists companies as diverse as NCR, Coleman, Ford, Sleek Audio, Peerless and Outdoor Greatroom Company [90]. Reshoring is an extension of the earlier analysis of offshoring and within the wider literature concerned with production dynamics and the international division of labor. This latter aspect puts in evidence that offshoring and reshoring should not be considered as contradictory phenomenon, they should be seen as reciprocals. Should some companies opt for reshoring, this does not imply in any way that the overall outflows of offshoring activities will be contracted in a significant way; more specifically it has been argued that reshoring decisions do not necessarily entail the closure of plants abroad and/or the interruption of relationships with foreign suppliers. For illustration, Caterpillar opened a new hydraulic excavator in Texas to relocate capacity from two factories in Aurora and Japan, but contemporarily it announced an expansion of R&D activities in China, to quadruple excavator production at its plant in Xuzhou, China (Forbes, 2010). The two phenomena coexist and, at least for the moment, are not comparable given that the reshoring emergence is quite recent and its evidence is quite limited.

Given the reversing tendency of offshoring shown in the last decades, reshoring cannot be viewed as a once and for all decision but rather a phase of the firm's long-term internationalization strategy of production activities [78]. offshoring such as back-shoring can be considered as different steps of a much wider localization strategy. The theory of "nonlinear internationalization" proposed by [91] outlines that internationalization is a path "characterized by substantial increases and decreases in international activity". Increases and decreases in internationalization involves combination of entry and exit strategies characterized "by rapid internationalization activities followed by periods of consolidation or retrenchment". Thus, implies that after being focused on the domestic market or even without this primary step, a firm can opt for an internationalization strategy entering new markets, hypothetically with consequent greater cultural, political and development distance [15]. At a certain point, the firm may face the rising compliance in managing the activities broad; more specifically operational issues such as adverse change in the local environment, growing labor cost, political instability, decreased foreign demand, supply chain disruptions and quality problems and thus forcing the company to reduce its commitment in the internationalization.

The de-internationalization can mean completely withdraw from all foreign markets or the specific host country the firm operates in or take a less extreme decision and reduce the depth or the breadth of manufacturing operations abroad [91]. The length of the de-internationalization may vary a lot culminating, in the extremely case, in a short-term "error correction" of the previous internationalization strategy

[92]. The point is that the de-internationalization should not be seen as a failure but an adaptation to the mutated conditions that at a time pushed companies to enter in the internationalization process. Vissak suggested that the de-internationalization is not a an end point, but rather a starting point for a “successfully renewed international process” with the desired outcome of being even more international than they were before their decision to leave, even partially, their operations in the host country.

Reshoring is only on the possible alternatives that a company can implement after having chosen to offshore its production activities. The choice to opt for reshoring instead of further reshoring or near-shoring depends as always on the evaluation of push factors (internal to the host country) and pull factors (provided by the home country). Today, reshoring presents the opportunity to create employment in developing countries after the economic crisis thanks to the return of manufacturing “back home” where the majority of the demand comes from [93]. However, the downturn of location decisions is actually due to different causes, within which the main is related to erosion of cost advantage deriving from offshoring activities to low cost countries. This choice, in turn, means enhancing offshoring and reduce employment in home country. The intuition leads to consider these phenomena as dynamic and bi-directional.

3.3 Globalisation

Offshoring and outsourcing have been the main actors in the creation of a global network of design, production and distribution across global value chains. Offshoring forced more than others decisions the globalisation of manufacturing activities giving rise to the so called “Global productions networks (GPNs)” [94] or “Global Value Chains” [26]. As discussed above, offshoring process has been reversed and consequently the idea of globalisation. While the opportunities created by increasing globalization boosted the decisions concerning offshoring strategies, political events during the recent years result in the increasing rise of populism and anti-globalisation, referring to the election of US president Donald Trump and the “Brexit” decision by UK, being reshoring supporting this evidence.

The reshoring phenomenon has been promoted as the tool to “bring jobs back” and to avoid the absence of labour protection, wages below the subsistence level and little regard for health and safety, enhancing corporate social responsibility (CSR). This, along with increasing sense of nationalism could potentially be important drivers of reshoring. The actual state of art is that companies are global in nature, due to globalization of production and sales. Companies are force to follow a globalization process to make their functions able to grant them competitive advantage, adopting different configuration of their value chain. The extent to which companies

pursue globalization in their production activities is not uniformly distributed. This can be associated to the uncertainty and volatility in the market, where the only certainty is the continuous mutation of the conditions under which they operate.

The well known Swedish furniture retailer IKEA, for example, was initially focused on supply management at the local level: business development (through entry into new markets and diversifying into new products) led to change sourcing strategies as well as those corporate summarized in offering quality products at an affordable price. In particular, the company due to problems of capacity and relationship with its suppliers, which were proving less and less cooperative in lowering prices as requested by their client, started researching suppliers first in Europe, starting from East, then in China and the Far East and, finally, in the United States. The search for vendors in this region has followed the local opening of new stores [95]. In recent years, even facing the crisis, there has been a slowdown in some areas of internationalization processes, up to the reversal of this trend to the phenomenon of abandoning the foreign supply markets to return to a more local supply base [96]. The reasons that can lead to this phenomenon may be summed up in a loss of affordability of overseas supplies or in the difficulty of management of foreign direct investment (FDI).

3.4 Who reshore?

The Reshoring evidence comes out from a multitude of industries and firms, characterized by different size, rate of export and previous offshoring strategies.

Some studies [61] suggested that small and medium size (SMEs) are not affected by the reshoring phenomenon, while others [97] stated that reshoring of manufacturing activities is more evident for such kind of firms than for the larger ones. For Fel and Griette [98] there is no significant gap within firms according to their size to decide to reshore. In reality, the studies taken into account focus on the reshoring phenomenon within the boundaries of just a home country, therefore it goes without saying that they are influenced enough by the economies prevailing in the home country. The study released by Fracocchi [80] turns out to be the most completed in terms of the reliability of the dataset of firms taken into consideration regarding the home country they belong to and reported that differences in firm's size are slightly determinant for reshoring with the prevalence of large firms going through the process of reshoring. Fel and Griette's research [98] questioning over 270 French firms outlines that SMEs' decision to reshore brings to a higher satisfaction than for large companies; thus explained by the heavy financial requirements imposed by foreign suppliers.

The industry-specific characteristics impact the propensity to repatriate part or all the manufacturing activities back to the home country. The way the industry

firms belong to affect the reshoring decisions seems to be strictly related to the importance of quality and customization of the outcome. Industries characterized by high complexity tend to bringing back production activities to the home country in favor of a greater accuracy. Thus implies that even if reshoring is of interest of a broad set of manufacturing sectors, there is evidence in Germany that the sector that result the most affected by the phenomenon is the one of machinery and equipment producers [61]. Ancarani [92] concentrated their studies on the duration of offshoring related to industry specific firm characteristics. The outcome is that the duration of offshoring is strongly affected by the industry the firm belongs to; specifically, firms that operate in electronic and automotive industry have a higher propensity to bring back production activities earlier than comparable companies operating in other industries (e.g., clothing, furniture mechanical). Even for these outcomes the reason below is the high degree of product customization depicting these industry; thus, encouraging high proximity between the various business units and above all with the market of interest. The outcome is confirmed also by Kinkel and Zanker's [43]; according to them these sectors can be considered the ones with the major tendency to offshore as well as reshore.

With regard to previous offshoring strategies, manufacturing reshoring decisions seem to be more diffused for industries that have investigated more in contract manufacturing and offshoring over the past few decades, such as clothing and footwear, electronics, mechanical and furniture and home furnishing (UNCTAD, 2013). It emerged that companies for which the offshoring investment has been extremely high tend to reject more the idea of reshoring their actual offshored manufacturing activities and the typical example is the pharmaceutical industry. The idea below is the irreversibility of the location choices due to the previous substantial investment that have not conducted to the desired outcome of lowering the cost of production.

3.5 Reshoring Drivers

Strategic decisions are crucial. Implemented to realize performance improvements, strategic decisions are related to location and governance model of transactions. In the pursuit of the optimal choice, decision makers compare transaction costs and benefits deriving from future offshore-reshoring decisions. In the past, strategic and location decisions were mainly driven by cost reduction and lead to offshore decisions. Evidence suggests that outsourcing and offshoring strategies have been recently reversed. The discussions around the possible drivers raised questions over whether reshoring decisions are driven by the failure in realizing benefits from offshoring or if estimated advantages have deteriorated through time [99]. The reshoring phenomenon is view from the existent literature as a mere correction of a prior decision to locate production activities abroad [43] [61][61] or the call for an adaptation to

the changed conditions that at a first time fostered the company to opt for offshoring [92] [55] [39]. The former case envisages mistaken managerial decisions and implementation of a “correction mechanism”. Reasons for failures in international management, resulting in relocating the operations from foreign location to domestic location, rely on lack of knowledge and lack of systematic location planning. This is evidently true for firms being particularly “traditional”, anchored to their region and so, having no or little experience in internationalization. Their misjudgment and wrong decisions derive from failure in integrating international management into the existing company management, leading to high sunk costs and, unavoidably, the termination of the internationalization resulting in reshoring [100]. The misjudgment entails lack of financial resources, capacity, know-how and competent personnel for cross-board management and can be, mainly, explained by the concept of bounded rationality. Bounded rationality is a cognitive assumption behaviour decision makers are limited in their choices by environmental complexities strain the bounds of knowledge, making it difficult to foresee all potential contingencies of a buyer-supplier relationship and rationalize all expected outcomes [1]. The inability of envisaging the real conditions and forecast accurately project performance outcomes may lead to higher/lower than expected cost associated with offshoring/out-sourcing decision, this leading to incompetence to capitalize on expected benefits and in turn, reconsider outsourcing and offshoring decision. Furthermore, coordination and transaction costs are “hidden” costs in internalisation management, thus increasing the probability of opportunist behaviour at the foreign production site (offshore) or foreign supplier (outsource). Transactions costs are generally higher in the case of outsourcing in a foreign country, which entails the cost of scout for target suppliers providing the required competences, performing due diligence to estimate the added value to your operations and negotiating and drawing up a contract, the cost of monitoring to ensure the other party’s behaviour, or the cost of enforcing the contract in case of litigation or arbitration. The rise of opportunism can hardly be envisaged, enhancing wrong decision in location decision, but this is rather related to the latter case concerning the uncertainty of the economic environment either in the host countries or/and in the domestic one. International manufacturing location decisions deal with global competitive dynamics, entailing that location differences are subject to continuous change. The wide set of causes are relatively unpredictable and hard to be influenced at the micro level and can be summarized as follow [101]:

- Changes in the global economy: current economic crisis has given rise to a fall in the demand and a fiercer competition. Martinez and Merino [39] analysed the effect of economic crisis on the Spanish footwear industry deriving some drivers to reshoring in retailing. The lower sales growth in sales had the effect of reducing the ordered quantity and this created problem due to the scarce flexibility of outsourcing suppliers. The outsourcing in China requires min-

imum ordered quantity with a high degree of advance due to the extremely high lead time. This in turns creates high stock levels, increasing the holding cost associated with inventory. Moreover, no small quantities can be ordered in relation to the fulfilment of whole containers. Furthermore, when dealing with highly economically uncertain environment, path-dependency induce companies to use already practiced patterns, fall in the competence trap being imprisoned in the strategies that granted them success in the past. The existing organisational routines and set of competences should be sets out pursuing new approaches for relocation strategies to deal with the economic global change [29] [43].

- **Environmental uncertainty:** a high degree of unpredictability in the marketplace exposes decision makers to greater difficulty in assessing their location decisions [102]. Transaction cost theory support the theory for which as long as uncertainty is higher in the economic environment the degree of organizational and spatial separation, thus being the starting point for offshoring, tends to decrease [20]. Such uncertainty ranges from institutional and regulatory such as subsidies and policy changes, labour market regulations, tax structures and political stability to macroeconomic changes like economic growth projections, raw materials shortage and exchange rate fluctuations. For illustration, Lemken GmbH & Co.KG opted for the relocation of its assembly operations from a wholly-owned facility in Russia to a back-shoring decision relying on the services provided by a supplier in Germany. The reshoring decision was mainly driven by increased Russian political instability, uncertain material and energy costs, and consistently high logistical uncertainty from arbitrary export regulation. Currency value has a significant impact on the attractiveness of buying and selling on the global market. When the U.S. Dollar is weak relative to other currencies, it becomes more attractive to buy goods and services in the U.S., as they are cheaper in relative terms. This is the case currently with the U.S. Dollar in comparison to the Euro, the British Pound, the Canadian Dollar, and the Brazilian Real (“Big Mac,” 2013). While the Chinese Yuan is still relatively weak versus the U.S. Dollar, absolute costs are going up in China. There is also a perception that the Chinese Yuan is currently undervalued and will be revalued to be less favorable to the U.S. Dollar. In addition, concerns exist regarding whether the Chinese government will continue to maintain a monetary policy that is intended to keep the Yuan relatively weaker than its developed-market trading partners (“The Yuan,” 2013). By not considering that The Yuan increased in value between 2004 and 2010 in value by almost 13% with respect to euro [103]. However, it is clear that currency fluctuation is an influencing factor to which companies pay attention. The attractiveness of certain countries rather than others relies also on the government assurances

of security such as intellectual property rights [79] [4]. Intellectual property rights are becoming a key factor in assuring protection of innovative development projects. Failure in assuring an adequate protection leads companies to reconsider their location strategy. In this context, Caterpillar back shored manufacturing of excavators from Japan to Texas due to the volatility of intellectual property rights in the host country giving rise to circumvention. The word press has also emphasized the theft of intellectual property rights of various western companies by Chinese firms with the U.S. government requesting publically to take action against them. Chinese' government negligence made several western companies aware of the theft and of the related risks associated with the permanence of their manufacturing operations in a country that do not contrast the abuse of intellectual property influencing them inevitably to move their manufacturing operations out of china. Another well-known case triggered a highly-publicized software development where an employee in India forwarded key files to her personal email account. Intellectual Property rights are more restricted in developed countries, furthermore in the case of rising claims.

- Eroding comparative advantage: rising consumer/customer demand leads to tighter supply markets, reducing the attractiveness of a given supply market. Availability of appropriately skilled labor, the rising cost of labor and labor cost stability, the rising cost of fuel contributing to increased transportation cost, and cost instability are all contributing to factor market rivalry and causing organizations to reconsider their manufacturing location decisions. A recent study indicated that while the productivity-adjusted wage gap has been decreasing between the U.S. and China, the United States' productivity-adjusted wage rates are still two to three times higher than those of China. To return to a state of very low wages, some companies are moving manufacturing from China to other Asian countries, such as Vietnam, to access labor costs similar to former levels in China. In fact, according to the International Labour Organisation, wages in the Chinese manufacturing sector doubled between 2000 and 2006 [103]. The closing gap in salaries between developed and developing countries is the translation of pressure for wealth and welfare in these overseas destinations chosen with the scope of lowering the cost [104]. This is just an example of the erosion of the cost advantage that at a first time forced firms relocating production abroad being the dominated single motive. The more expensive the labour cost, the lower is the actual unit labour costs as a result of the economic crisis. Rising labour costs and lowering growth expectations in some low-wage countries should be combined with difficulties to recruit and keep qualified personnel in foreign production sites, this in turn conducted to an underestimated level of coordination and control costs. The

difficulty in assessing suppliers' commitment and being engaged proactively with suppliers in the goals pursue increases as the geographical distance does [105]. Extensive offshoring results in the loss of the tacit knowledge embodied in the skills, expertise and core competences of home-country workforce and in the erosion of cost advantage due to increased transportation costs, low inventory turnover caused by the longer lead-time and in the lack of the visibility of the value chain. The decision to reshore would enable better control over the visibility of working practise and a better assessment of the impact of manufacturing processes.

- Increased competition on resource assets: perceived scarcity of resources may drive firms to reconsider their location choice. The scarcity can be intended as raw materials or asset specificity and human asset specificity. The former implies that rivals compete on the same scarce resources, that wouldn't grant for any competitive advantage since they will be saturated. The latter implies skills and knowledge associated with functional inter-dependence and affect in a substantial way the strengths of firm's commitments to offshoring and outsourcing decisions [79]. For instance, Wal-Mart insourced parts of its supply chain infrastructure from numerous logistics service providers to safeguard its logistical capabilities and reduce its supplier dependence, highlighting how a change in firm objectives and strategies influences it decisions. Firms such as Ford Motors Inc., Otis Inc., and Varta Microbattery GmbH state that from co-location engineering and production, as well as production and sales after they had reshored or insourced, they realized enhanced knowledge sharing. This led to reduced capital lock-up and enhanced security of supply resulting in reduced transaction costs.

According to this spectrum of causes, the reshoring is justified by the emergence of environmental changes; thus, make reshoring one of the optimal strategies to face competition. Being all the above-mentioned factors dynamics and contextual to the current economic phase in which they are analysed. This leads to the consideration of reshoring as a temporary phenomenon as the factors that motivate it [106]. The existing literature has described drivers as factors that "drives firms to make the reshoring decision despite the locational advantage of having low labor costs at the offshoring location" [101]. This definition points out the different nature of the two decisions: from one side offshoring is forced by reduction in cost, on the other reshoring seems to be linked to other reasons which have nothing or at least little to do with cost. Many authors show that 'increase quality' is the most important driver of reshoring [104] [107] [108]. Along with quality issues, the drivers of reshoring from a detailed strategic point of view can be explained as:

- Quality: Bailey and De Propris [107] reported quality issue as the most spread

motivation that force surveyed firms to relocate manufacturing back to the U.K. A survey by Kinkel [43] on German dataset from the EMS shows quality problems at the foreign location being the most frequent reason, stated by around seven in ten back-shoring firms. The point is that it is not easy for companies to transfer abroad the same quality management procedures that are implemented at home [61]. Moreover, some quality requirements or manufacturing techniques might be new to foreign contract manufacturers, leading to an increase of the price of the outsourced goods or to a final dissatisfaction of the buyer [55]. It may be therefore necessary to transfer technical and management staff to the foreign manufacturing site in order to control the quality level, especially for those products that require high-skilled labor and whose competition is generally based on elements other than price [103]. As example, we may mention the case of Philips Electronics, whose chip-plant in Albuquerque was destroyed by a fire in 2000; such event impeded the firm to deliver the necessary supplies to Nokia and Ericsson, for several weeks. Ericsson incurred a loss of over USD 400 million.

- Growing awareness of global supply chain risk: many companies take steps to better manage risk by reducing the length of the supply chain allowing them to also improve customer satisfaction, by decreasing lead time [104] [107]. Shortening supply chain is the output of the growing awareness that the previous location strategy was mainly based on lowering the cost of labor, rather than assessing the total cost associated with the sourcing of both services and goods offshored. Total costs are the total cost of running an internationalization business that includes different risks which go beyond the boundaries of the enterprise.
- Behavioral and human drivers: many scholars assert that reshoring is a correction mechanism to previous location decisions [105] [109].
- Flexibility: in a time when flexibility and mobility are becoming more and more crucial for all kind of companies, particularly since the emergence of the global economic crisis, location decision-making must also be arranged along flexible and modifiable paths. Fitting this awareness into the strategic structure of internationally active enterprises may become one of the new core tasks in future international production management. Research also shows that reshoring has a significant effect on increased flexibility [61] and there is a discussion focusing on flexibility with respect to production and customization [109].
- Control: offshoring creates an extended supply chain, where transfer of information and products involves long distances across multiple supply chain

nodes and international boundaries and control generally becomes hard to implement [101]. Distance can be intended as either we mental or physical. The former kind of distance refers to the synchronization of various functions in the supply chain. For instance, synchronization results particularly hard when dealing with centralized R&D center that are not located next to the business units, this requires the additional integration between them to ensure that the needs of each business units is fulfilled by the R&D center. Physical distances refer to the increased complexity in shipping from production sites located in the host-countries to the home-country to serve the local and mature market. However, albeit the organization can control the supplier in different ways thanks especially to ICT, a perfect visibility and control are almost impossible to achieve.

- Patriotism and “made-in effect”: the relevance of back-shoring for policy-makers has been outlined by The United Nations Conference on Trade and Development (UNCTAD, 2013), thus enhancing policy-makers in several developed countries riding the wave of back-shoring to rise employment due to the global crisis [110]. Recent contributions highlight the relevance of customers’ perceptions with respect to “made-in” [109]. A higher propensity to buy home country “made-in” products may motivate companies to relocate production activities in there [111]. This is particularly true in the fashion industry where consumers’ increasing awareness of irresponsible sourcing decisions from MNE’s is becoming an issue, as confirmed in the studies by Robinson and Hsieh’s [112] analysis of the Burberry case. The iconic British high-end clothing brand renewed and realigned its business model by bringing back manufacturing activities in the UK, thus enhancing value and firm competitiveness by being perceived as highly valuable maker of authenticity, superior quality, and lead prosecutor of tradition in luxury fashion, which in turn, contributes to justifying premium pricing.
- Decrease environmental impact: environmental and social sustainability is expected to gain importance as a possible back-shoring motivation, due to either a deliberate firm’s sustainability-oriented strategy [105] [112]. Various social sustainability issues, such as labor rights, gender equity, and community development are identified as needing to be addressed when implementing an internationalization strategy (Maloni and Brown, 2006).
- Increase in innovation: recent literature also indicates increase in innovation ability as an crucial driver in reshoring [25]. Innovation relates both to product and process-related activities. Tate et al. [25], outlines the importance in the robotics cost, which in turns forces companies to leave labor intensive activities in favor of more automated ones, improving their level of productivity

[79]. This implies that the nature of manufacturing activities changes by being transferred from low cost labor countries to Western countries. The implementation of innovative-content process is made possible in reshoring by the existence of already existing assets that have been sitting idle to use and that are subject to modernization in order to put them to effective use in the current manufacturing environment. Furthermore, implementing automation and other measures to improve productivity in the host-country would not be enough to preserve the country's cost advantage. Indeed, they will undercut the primary attraction of outsourcing to developing countries – access to low-cost labor.

3.6 Barriers to re-shoring

The drivers of hesitance to reshoring causing manufacturers to reassess their long-term manufacturing strategies go beyond global macroeconomic volatility and include factors such as concerns about rising health-care costs, local regulatory uncertainty, increases in the minimum wage, and unclear progress on tax reform.

In evaluating the reshoring decision despite the locational advantages of low labor costs in the offshoring location, Wiesmann [101] summarized four main categories of barriers to reshoring: global competitive dynamics barriers, host country barriers, home country barriers and the firm-specific ones. Frantocchi et al. foster the importance of global competitive dynamics pointing out that there are two types of reshoring cases – those incentivated by the government to create jobs in the home country and those which occurs without any intervention of the state. In the latter case what matters is the “complex dynamics involving locational, industry, and firm-level factors are at issue and deserve closer attention”. Within the first category, it can be recognized the presence of large economic differences, instability of exchange rates and large differences in resource availability as barriers.

Barriers that are specific to the host country are the most prominent and include the risk of losing access to market and foreign distribution channels, Risk of losing access to raw-materials and components that are only available in the host country along with risk of losing supplier knowledge.

Substantial risk can accrue to the home country where stricter environmental legislation, lack or shortage of qualified staff and lack of flexibility in the labor market are present. The manufacturers who thrive moving back the production realized that the problem at hand is the quality and capability of the workforce to handle tasks that current manufacturing workers in developed countries cannot [113]. Current manufacturing workforce in domestic countries is characterized by the elderly and younger generation not being ready to pick up the slack. From one side, manufacturing workforce is getting older and older with an average age of workers of

44.5 from the labor force statistics provided by Unites States Department of Labor (2017). Lack of training is a significant part of the issue. According to Van den Bossche, there's "only one path to follow" when it comes to dealing with a labor force that isn't as skilled or educated as it used to be — standard operating procedures (SOP). He says, "Start documenting, including putting SOPs in place that describe exactly what these people are doing". Lack of training in manufacturing is the direct consequence of the fast moving of manufacturing overseas characterizing the last decade. Hiring and training new types of workers will take center stage in the process of production activities' relocation but this happens at a cost.

Finally, apart from explicit external factors, there are firm-specific factors that can work against reshoring. These barriers refer to the delay in returning to the home country, to the risk of taking another immature decision because of lack of proper decision support, to the lack of capacity, resources and internal competencies and lack of information and communication about reshoring within the business.

Evidence of reshoring to the United Kingdom comes from various surveys. The ones that focus on the companies actually engaged in back-shoring elicit not only information about the motivations but also barriers for further reshoring. Among these, the most recognized obstacles concern energy costs, regulation, access to finance and skill gaps [114].

3.7 Support to re-shoring

The phenomenon has received wide attention particularly during last presidential election. Back-reshoring has been considered a useful element to support re-industrialization in high-wage countries , after the economic downturn due to global financial crisis. Increasing customer expectations for flexibility and improved cost performance drove firms to re-consider their appropriate "shoring" decision.

Great importance has been directed to reshoring in U.S. After being elected to office for a second term, President Obama hosted a forum at the White House focused on the increasing number of companies choosing to "insource" jobs and make new investment in the United States, releasing a report that documented the emerging trend of "insourcing" and how companies were increasingly interested to invest in the United States. In addition, the administration announced several incentives to encourage reshoring/insourcing [25]. The United States is experiencing the "Trump Factor" which, according to the annual data report of Reshoring Initiative, lead to an increasing rate of reshoring even above the rate of offshoring, marking the counter-trend with respect to the last forty years. The report shows an increase in reshoring growth trend over 10% in 2016, with 77000 jobs returned to the US and exceeding offshoring by 27000 jobs. The U.S tax reform bill lowered the U.S corporate tax rate from 35% to 21%, but it is just one of a series of policy changes

promoted by Trump administration and the Republican-led Congress to convince manufacturers in increasing capital spending, expand their business and hire more workers. Thus, a \$1.5 trillion infrastructure investment has been announced to address America's aging roads, bridges and other transportation avenues, being the government a regulator at large in supporting its economy.

Following the US Reshoring Initiative, even Europe experienced the emergence of introducing specific initiatives to support companies bringing production back. French and UK governments have strongly pushed announcements of their engagement in assuring companies with adequate incentives. The French Ministry for Industrial Renewal has even developed a specific instrument, the Colbert 2.0, which was inspired by the US Reshoring Initiative and which has been available since July 2013 on a website, www.colbert2-0.fr, to help companies to examine the advantages of bringing some of their operations back to France. In the UK, the government has implemented the Reshore UK initiative to support companies that want to bring production back home (ERM annual report, 2016).

Even if manufacturing takes up an important role in political campaigns, it is proposed as a way to jobs, without clearly defining how. Manufacturing, as old-style production line jobs, seems to be over and to make way for a new concept of manufacturing, more commonly known as Industry 4.0. The manufacturing sector is innovating, introducing new offerings and using innovative technologies, such as 3D printing, robotics, new materials, smart communication systems and 'big data' management. The newness of manufacturing technologies involves new kind of skills and adaptability to an ever-ending process that could be in contrast with the traditional concept of manufacturing worker. Thus, implying that even if the trend of reshoring could explode in the next few years, it does not necessarily mean the return of the previously offshored jobs, since they could be no longer linked to the traditional assembly line.

Chapter 4

Offshoring and reshoring in the Italian Manufacturing Sector

In order to analyze the offshoring and re-shoring phenomenon in the Italian manufacturing sector, an empirical analysis, based on the previous literature, has been carried out. The analysis has been conducted using the series of surveys executed each three year by UniCredit bank on Italian manufacturing firms, covering the three-years periods 2001-2003 and 2004-2006. The representative sample of Italian manufacturing firms is constituted by several thousands of firms to which the survey elicits questions covering seven issues: corporate governance, workforce structure, fixed investments and information and communication technologies, innovation and R&D effort, internationalization, market and competitiveness and relationship with the banks. Most importantly for the purposes of this dissertation, the survey offers the possibility to investigate the phenomenon of offshoring and re-shoring throughout the internationalization section. Any official statistics allows to have evidence of the extent of the two phenomena in Italy, pointing out the need of obtaining some detailed information throughout surveys. The analysis has been based on the received scant literature on this issue. The unit of analysis is primarily the single offshoring and re-shoring decision. For each operation, information was recorded on the company involved: its size, industry, headquarter country, year in which offshoring was implemented, motivation for both offshoring and re-shoring. The tenth survey investigates offshoring asking for more detailed questions. For instance, it allows to understand what is the offshore governance mode (outsourcing vs in-sourcing) and the percentage of delocalized production for each host country.

4.1 The Dataset

The dataset is characterized by a stratified random sampling for which preliminary information are used to define the sampling strategy in order to improve the accuracy of the estimators. The stratified sampling has been constructed by region, by firm size and by industry (Pavitt) classification through weights associated to the observations.

Table 4.1: Sample firms by geographical area.

Geographical Area	9 th	Percentage 9 th	10 th	Percentage 10 th
North-West	1,539	36%	2,203	43%
North-East	1,291	30%	1,486	29%
Centre	758	18%	836	16%
South	694	16%	612	12%
Total	4,282		5,137	

Table 4.1 shows the geographical re-partition of the firms in the sample of the 9th and 10th survey according to the main four Italian macro areas. As expected, firms are concentrated in most industrialized regions of Italy, i.e. in the Northern macro areas.

Table 4.2: Sample firms by size

Size	9 th	Percentage 9 th	10 th	Percentage 10 th
Micro	469	11%	101	2%
Small	1,721	40%	1,490	29%
Medium	1,443	34%	2,274	44%
Large	649	15%	1,272	25%
Total	4282		5137	

Table 4.2 shows the repartition of the surveyed firms based on their size. The information on the size has been constructed on the total number of employees and the total sales that allows to split the sample in micro, small, medium and large firms. The sample is characterized by a high presence of small and medium firms (SMEs), as the Italian manufacturing industry is structured. However, an over representation of large firms has to be recorded, due to the particular sampling scheme.

Table 4.3 shows the industry composition of the sample according to the main industry main activity (Ateco 1991 classification for the 9th survey and Ateco 2002

classification for the 10th one); the two classifications do not substantially differ the one to the other. The sample shows that industries like *Manufacturing of machines and equipment not classified elsewhere and Vehicles, Trailers and semitrailers manufacturing* are much more represented by the sample of firms, straightforwardly followed by *Leather goods and similar manufacturing* and *Paper manufacturing and paper-based products*. It is not surprisingly to find these industry sector as the most representative ones. These are the industries where Italian firms shows to have a higher competitive advantage due to the made-in-Italy effect. Italians demonstrate to produce high specialized product, giving rise to the widespread awareness of the ability to be competitive in global markets.

The internationalization section of the survey asks for exports and other forms of internationalization, including internationalization of production (offshoring). Our analysis focuses on the internationalization of production, for which, over the total sample of the 9th and 10th survey, as it is shown in the Table 4.4 respectively 4,144 and 5,087 answered to the question concerning the offshoring of part or of the total of their production ¹. The 7.16% of the firms who submitted realize, at least in part, its production abroad in the three-years period 2004-2006 with respect to the 7.53% of firms in the three-years period 2001-2003.

We can derive information about offshoring taking into account the size of the firm, the region and the industry to which the firm belongs to. As for size, offshoring seems to be a more common choice for large firms (sales > 43,000 k€ with more than 249 employees) and medium (10,000 k€ < sales < 43,000 k€ and with number employees between 50 and 249) rather than for the smaller ones, as shown in Table 4.5 . Large firms have higher propensity to opt for offshoring given the greater financial resources they enjoy with respect to small and medium companies, given the initial investment (sunk costs) required by the implementation of the offshoring strategy.

The two surveys allows one to identify the main host countries where Italian firms have located production. In the 9th survey the questionnaire asks for well-defined countries and it emerged that Romania was the main host country where to move in production activities, followed by China and Tunisia as shown in the table 4.6 ². The survey asked also for the incidence of sales of the product produced in the host country. This information is required by referring to the year 2003 and at the last year before the survey (2000) ³.

To those firms relocating activities abroad to any host countries, the survey for

¹ The question posed in the survey: Is the company realizing at least in part its production abroad?

² The question posed in the survey: Which are the countries where manufacturing activities are localized? (*multiple answers permitted*).

³The question posed in the survey: What is the overall incidence of production realized abroad over the total turnover?

Table 4.3: Sample firms by Ateco code.

Ateco	Industry	9 th	10 th
10	Food	1	1
11	Beverage	0	1
14	Packaging of garments, leather and fur goods	0	61
15	Leather goods and similar manufacturing	484	416
16	Wood, wooden and cork goods industry (furniture excluded); straw goods manufacturing and similar	0	1
17	Paper manufacturing and paper-based products	331	329
18	Printing and reproduction of recorded supports	141	157
19	Coke production and oil derivatives	174	178
20	Manufacturing of chemical products	112	140
21	Manufacturing of basic pharmaceutical products and pharmaceutical preparations	113	139
22	Manufacturing of rubber and plastics	107	178
23	Manufacturing of other products from non-metallic ores	29	19
24	Metallurgy	238	245
25	Manufacturing of metallic products (excluded machines and equipment)	224	265
26	Manufacturing of computers, electronic and optical goods; electro-medical equipment, measuring devices and watches	262	351
27	Manufacturing of electric devices and non-electric devices for domestic usage	165	189
28	Manufacturing of machines and equipment not classified elsewhere	545	791
29	Vehicles, Trailers and semitrailers manufacturing	614	746
30	Manufacturing of others means of transport	12	27
31	Furniture manufacturing	170	212
32	Other manufacturing industries	83	94
33	Repairing, maintenance and installation of machines and equipment	82	133
34	Packaging of garments, leather and fur goods	74	82
35	Electricity, gas, steam and air conditioning provision	276	52
36	Collection, treating and provision of water	277	330
Total		4282	5137

Table 4.4: Sample firms by offshoring.

Dummy variable = 1 if some production cur- rently abroad	Frequency 9^{th}	Percentage 9^{th}	Frequency 10^{th}	Percentage 10^{th}
0	3,832	92,47%	4,723	92,84%
1	312	7,53%	364	7,16%
Total	4,144		5,087	

Table 4.5: # of offshoring firms by size.

Firm size	9^{th}	Percentage 9^{th}	10^{th}	Percentage 10^{th}
Micro	12	3,8%	1	0,27%
Small	64	20,5%	45	12,36%
Medium	128	41%	139	38,18%
Large	108	34,6%	179	49,17%
Total	312		364	

Table 4.6: # of offshoring firms by foreign countries in the 9th.

Country of localization	# of firms
Romania	89
China	61
Tunisia	22
Croatia	19
Poland	19
Hungary	11
Others	170

4. Offshoring and reshoring in the Italian Manufacturing Sector

the three-years period 2004-2006 asks not only the main host countries chosen to relocate production activities but also the extent with which firms offshore (internally) or outsource according to the host country. This is achieved through a distinct percentage of production abroad through contracts over the turnover (outsource) and the percentage of production abroad on turnover through owned subsidiaries (offshoring), as reassumed in the Table 4.7 ⁴.

It can be underlined how in European Union countries Italian firms tend to maintain the ownership of the production facilities, while in China, and more generally in Asia, the tendency towards offshoring and outsourcing is the same.

Table 4.7: Offshoring and Outsourcing firms by foreign countries in 2004-2006.

Country of localization	# of off-shoring firms	Incidence on turnover from off-shoring (%)	# of out-sourced firms	Incidence on turnover from out-sourcing (%)
EU15	42	27,9%	37	35,21%
EU2004	13	36,8%	6	44,16%
Russia	1	30%	1	30%
Other European Countries	4	42,5%	6	20,8%
Africa	3	10%	0	-
Asia(China excluded)	10	33,7%	10	27,7%
China	13	42,5%	13	35,2
United States - Canda - Mexico	5	18,4%	3	23,3
Center and South America	3	21%	1	10%
Australia - Oceania	0	-	0	-
Total	94		77	

Overall, Italian firms show higher propensity to offshore than outsourcing, with respectively 94 occurrences against 77 of outsourcing. Furthermore, several companies answered positively to both questions and most of time for the same country; thereby implying that a company may decide to locate abroad some activities and outsource, in the same location, other activities to local producers. The average incidence of the production abroad in both cases of offshoring and outsourcing on turnover indicate traditional European Union countries (EU15) as preferred host location for the period 2004-2006, followed by European Union countries entered after 2004 and China. As offshoring locations, also other European countries and Turkey are target locations for Italian manufacturing firms.

Along with the incidence of production abroad over the turnover, the surveys ask

⁴The question posed in the survey: If some production is currently abroad, indicate the country and the following information over the presence mode abroad: incidence of production abroad through direct investment or in partnership with other stakeholder on total turnover, incidence of production abroad through agreements or contracts on total turnover.

for the motivations that induce companies to opt for offshoring. The motivations proposed by the 9th and the 10th surveys are figured out in table 4.1 and firms could propose more than one reasons that pushed them to relocate activities abroad ⁵. The reasons proposed for the 10th survey by the UniCredit bank are also figured out in fig. 4.1, but data have been aggregated since these were collected according to the host country considered. This could have allowed to understand what is the main reason to offshore for each country considered as a host country.

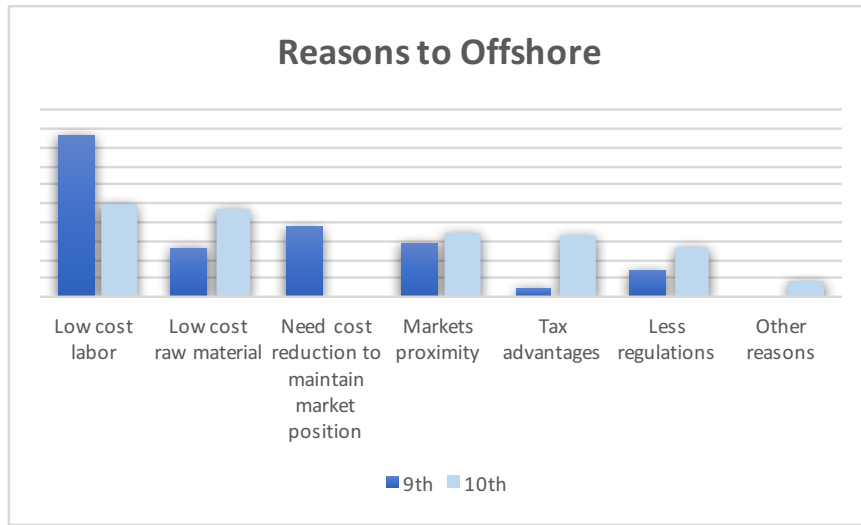


Figure 4.1: Main reasons to offshore in the two surveys.

The main reason to offshore is the low labor cost independently of the host country, followed by the need of cost reduction for the three-years period 2001-2003 and by access to low cost raw materials for 2004-2006. Market proximity seems to be of greater importance when production relocation concerns European countries and United States of and South America. Unsurprisingly, low labor cost motives Italian manufacturing firms to locate their manufacturing activities to low labour cost regions as China, Asia, Africa and Russia. As for cost reduction, this strategy pushes companies to delocalize their activities to China and Romania, where the availability of low cost materials is the crucial factor in the decision process. Tax Advantages and less regulations are not considered as fundamental reasons to relocate production activities in any of the two surveys. In terms of relations between motivations and dimensions, surely the low labor cost is still the dominant factor even for large companies but with a lower intensity with respect to medium and small companies.

⁵The question posed in the survey: Which are the motivations that have induced the company to delocalize production abroad?

In terms of destination of the goods produced abroad, often firms reply that the production abroad serves multiple markets as the home country markets as well as third countries or the host country itself. The surveys asked for the amount of the production realized abroad as a percentage of firm turnover. As before, the 10th survey gives a more detailed analysis by considering the partition according to the considered host country. In the three-years period 2001-2003 the production made abroad was mainly used to be re-imported in the home country and introduced in the production cycle in Italy. It means that production abroad involved semi-finished products and components. There is no great evidence that location of production abroad is induced by the aim of serving third countries.

Table 4.8: Production division realized in the host-countries in 2001-2006.

	2001-2003	2004-2006
Sold where production is located	25,11%	28,9%
Imported to re-enter in the production cycle in Italy	33,67%	28,4%
Imported to be sold in the Italian market	24,68%	17,6%
Imported to be exported in third countries	11,43%	6,3%
Directly sold in third countries	5,13%	18,8%

4.2 Offshoring evidence in the Italian Manufacturing sector between 2001-2003 and 2004-2006.

The race for delocalizing production activities abroad to foreign countries started between the end of eighties and the beginning of nineties and the main causes are linked on one side to the progressive liberalization of trade and on the other side the boosting competitiveness of emerging countries. In Italy, the offshoring phenomenon experienced a soaring increase between 2001 and 2006; thus, confirmed by an Istat study, for which the 9,9% of Italian industrial companies with at least 50 workers transferred activities o functions previously realized in Italy abroad.

The offshoring of production and services contribute to the creation of new opportunities of labour in developing countries and to the increase of export volumes towards the same. Along with the countries involved in the process at that time, there could have been good perspectives to extend the phenomenon also to others area as long as there is an agreeable combination of costs, workforce and infrastructures.

We are concerned to explore the characteristics of companies that, respectively, between the 2001 and 2003 and between 2004 and 2006 decided to start to offshore

their manufacturing activities. The methodological procedure of this thesis stems from a comprehensive literature review, concerning theoretical, as well as empirical findings. The study focuses on the manufacturing sector in Italy and uses a quantitative method in order to achieve results that are as representative, stringent and conclusive as possible.

Methodology The empiric models concentrates on the factors, using past research as guide, that influence the internationalization of Italian manufacturing companies and, specifically, the characteristics that differentiate the firms that opt for moving their manufacturing activities abroad and the ones that produce only in the domestic market. The dependent variable Y is a discrete variable that assumes the value one if the company delocalize part or its total production abroad (offshoring) and zero otherwise. Given that the regression model for discrete variable is the logit model, the offshoring phenomenon must be studied in terms of probability of offshoring $P(Y=1|X)$, where X represents the set of key firm characteristics that could be determinants for a firms to decide offshore. Using the cross-section regression analysis ⁶, the determinants consists of firm-specific characteristics such as size, geographical area, industry, human capital intensity and internationalization variables, as exportation and foreign ownership as shown in the table 4.9.

The notational form of the models to be estimated is: offshoring = $f(\text{size, industry, geographical area, corporate governance, R\&D intensity, exportation, labor productivity, ICT investments, skill labour})$, and each of the variables has been explained earlier. The logistic regression model used in this study can be written in the following form:

$$Pr(\text{offshore}|X_1, \dots, X_k) = Pr(Y_i = 1|X_1, \dots, X_k) = \Lambda \left(\sum_{i=0}^n \beta_i X_i \right) \quad (4.1)$$

where p represents the value of the dependent variable between 0 and 1, while X represents a vector of the independent variables and $\Lambda(\cdot)$ is the cumulative distribution function of the logistic regression. We established the model 4.1 using geographical area (X_1), industry by Ateco (X_3), size (X_4), foreign control (X_5), exports (X_6), R&D intensity (X_7), ICT investments (X_8), labor productivity (X_9) and amount of skill labour (X_{10}).

The dependent variable is the internationalization of a firm through offshoring and is measured by binary variables that assign the value of 1 to the firms are engaged in offshoring respectively for the two models between 2001-2003 and 2004-

⁶ In order to reduce the errors derived by taking into account data that incorporate a series of statistic units in a unique period, if possible we considered the variables related to the first year of the three-year period considered.

4. Offshoring and reshoring in the Italian Manufacturing Sector

Variable Type	Variable Name	Description
Offshoring	Prod_abr	Prod_abr = 1 if some production is currently abroad.
Economic Variables	Size	Size = Logarithm of number of employees.
	ATECO	ATECO91 = 1 if the company belongs to the relative industrial sector.
	Geographical Area	Dummy variables where area_dummy = 1 if the company is situated in the geographical area defined by the relative value (1= north-west, 2=north-east, 3= center, 4 = south).
	LPROD Skill_labor	$\frac{TotalTurnover}{NumberofEmployees}$ Logarithm of the amount of qualified employees.
Internationalization	Exportation	Exportation = 1 if the company exported in the given period, 0 otherwise.
	Foreign	Foreign = 1 if the company is controlled by a foreign owner, 0 otherwise.
Investment	R_D_inv	R_D_inv = 1 if the company invested in R&D.
	ICT_inv	ICT_inv =1 if firm invested in ICTs.

Table 4.9: Variables type, name and description.

2006, and the value of 0 to the firms that do not off-shore in that given period.⁷ Previous results suggested that the decision to offshore depends on firm size, sectoral affiliation as well as the geographical area firms belong to. We included these three variables as control variables in the model. Sector and geographical area are captured by dummy variables, while the size is proxied by the logarithm of the total number of employees. The sectoral affiliation is constructed through Ateco Code. We try in this way to hold these factors constant so that we can better assess the input of independent variables upon offshoring of Italian manufacturing firms in 2003 and in 2006.

Additional explanatory variables include the firm's labor productivity as the ratio between the value added and the labor cost to exclude the material cost input factor. Internationalization variables consist of exportation if the company exported in the given period and the foreign ownership of the company if at least one foreign stakeholder exercises the operational control of the company. The way the exportation influences the new off-shores is related to the way it assures to reduce the knowledge cost relative to the decision of dislocating production activities abroad. Thus, implying that the company already assess knowledge factors and subsequently the main feature of the country to which it wants to locate its facilities and this allows to reduce the overall fixed costs.

Crucial investments are R&D investments and investments in information and communication technology (ICT). Existing literature suggests the fostering role of these kind of investments in offshoring. In particular, Abramovsky and Griffith [115] investigate the effect of ICT on the enterprise's choice to offshoring business services abroad form for a sample of UK enterprises for the period 2001-2002, showing that enterprises with greater ICT investment and enterprises which order goods and services online are more likely to be engaged in outsourcing and offshoring. More recently, Rasel (2012) examines the relationship between ICT usage and the enterprise's offshoring decision, pointing out the role of ICT in manufacturing offshoring. Basing her analysis on the ICT 2010 survey of German enterprises, she finds enterprises that use more software systems (i.e. ICT intensive enterprises) are more likely to offshore compared with less ICT intensive enterprises. In particular, the use of software solutions for supply chain management systems is particularly important for manufacturing enterprises who decide to offshore.

Results The size is a prominent factor in defining the propensity to offshore of company in the Italian manufacturing sector. The result confirms a positive relationship between size and offshoring holding all other factors constant. It can be observed that the coefficient of the size is highly significant in both logit models.

⁷ The variable is constructed on the question posed in the survey: Is the company realizing at least in part its production abroad?.

However, the size effect cannot be evaluated simply by looking at the sign, magnitude, or statistical significance of the coefficient on the interaction term when the model is nonlinear, such as the logit model. Instead, the interaction effect must be tested by examining the sign and statistical significance of the values of the moderator variable's marginal effect (i.e. size) on the relationship between the explanatory variable (i.e. size) and the dependent variable over all sample values of the model variables.

The foreign ownership of the firms is not significant in determining the propensity to offshore in the three years period 2001-2003. Nevertheless, it has a minimal significance in 2004-2006 in being a determinant to offshore. Despite this, it does not result positively related to offshore when also assessing the firm-specific characteristics. Moreover, there is a positive and significant relationship between exports and offshoring. These results are in line with the literature on offshoring that stresses the complementarities between exports and offshoring. In each of the four models (columns [1] to [5]), exports are found to have a positive and significant association with the probability of offshoring – as expected.

In contrast with some existing studies, all else being equal, the less productive firms choose to go abroad in the three years period 2001-2003. LPROD9, as a measure of labor productivity, shows to negatively be significant for all the equations. The reason below could rely on a lower productivity as a motivation to offshore. In fact, it is well-proven that offshoring is followed by an increase in labor productivity and, more generally, in productivity. So, firm that are less productive could be more willing to offshore production activity in order to increase their productivity. A radical change can be noticed since 2004. In fact, the companies that offshore between 2004 and 2006 are more productive. Given that the two models study the stock of companies offshoring in the two periods, it could be that companies starting offshoring in the precedent period already experienced an increase in productivity or, otherwise, progressively even more productive firms start to offshore in the subsequent years.

The ICT investment in offshoring is positively signed and even more significant than R&D investments, enforcing the idea that companies that invest more in information and communication technologies have a higher probability to offshore given the reduction of offshoring barriers created by ICT. Having a robust ICT infrastructure can be a fostering element for companies to opt for offshoring.

We introduced also the amount of skill labour, quantified by the number of qualified workers. The outcome is not surprisingly. The human capital and the offshoring phenomenon are negatively associated. Firms that are more likely to offshore are the ones that hire less qualified workers, pointing out that firms are scale intensive.

In order to improve the estimations and overcome the heterogeneity due to the geographical area and the sector affiliation, we introduce the dummy variables refer-

ring respectively to geographical area and Ateco code. As expected the sign of the variables remain unaltered. Nevertheless, it helps understanding how firm-specific characteristics affect the probability to offshore production abroad. The firms located in the North-Italy, in particular in the North-East, are characterized by a higher probability to offshore with respect to the Center and South firms. In particular, being located in the north-east between 2004 and 2006 is significant to the offshoring decision. According to Ateco code, the results clearly show that there is a strong relationship between sector affiliation and the probability to offshore production abroad. First movers between 2001 and 2003 are affiliated to Printing and reproduction of recorded supports sector and Coke production and oil derivatives one. In general, firms that belong to paper manufacturing and paper-based product, printing and reproduction of recorded supports and vehicles, coke production and oil derivatives, manufacturing of computers, electronic and optical goods electro-medical equipment, measuring devices and watches and manufacturing of electric devices and non-electric devices for domestic usage reveal higher probabilities to offshore in equation than other industries between 2001 and 2006.

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Table 4.10: Model(A): Determinants of offshoring between 2001 and 2003.

Variable Name	(1)	(2)	(3)	(4)	(5)
size	0.607*** (0.052)	0.588*** (0.054)	0.608*** (0.058)	0.643*** (0.089)	0.740*** (0.101)
FOREIGN9	-0.033 (0.211)	-0.048 (0.214)	-0.057 (0.223)	0.134 (0.240)	0.141 (0.270)
Exports_9	1.257*** (0.251)	1.241*** (0.261)	1.358*** (0.308)	1.325*** (0.357)	1.067** (0.386)
LPROD9	-0.421*** (0.085)	-0.396*** (0.088)	-0.352*** (0.095)	-0.367*** (0.111)	-0.340* (0.134)
R_D_inv		0.195 (0.140)	0.139 (0.153)	0.378* (0.181)	0.532* (0.209)
ICT_inv			0.961*** (0.256)	1.196*** (0.323)	1.205*** (0.354)
skill_labour				-0.049 (0.075)	-0.019 (0.083)
North-West					-0.095 (0.336)
North-East					0.393 (0.328)
Center					0.270 (0.354)
ATECO16					-1.972* (0.800)
ATECO17					1.177** (0.428)
ATECO18					2.821*** (0.441)
ATECO19					2.078*** (0.454)
ATECO20					1.255* (0.551)
ATECO21					-1.137 (1.092)
ATECO22					-0.780 (1.111)
ATECO24					-0.049 (0.511)
ATECO25					0.325 (0.519)
ATECO26					-1.022 (0.696)
ATECO27					-1.879+ (1.079)

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ATECO28					0.293 (0.432)
ATECO29					0.172 (0.394)
ATECO30					1.615 (1.084)
ATECO31					0.689 (0.478)
ATECO32					-0.358 (0.718)
ATECO33					0.252 (0.595)
ATECO34					0.782 (0.616)
ATECO35					0.726 (0.710)
Constant	-6.600*** (0.672)	-6.686*** (0.679)	-8.139*** (0.789)	-8.586*** (0.913)	-10.34*** (1.166)
R-squared	0.112	0.113	0.132	0.150	0.275
N	3876	3864	3323	2588	2520

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

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Table 4.11: Model(B): Determinants of offshoring between 2004 and 2006.

Variable Name	(1)	(2)	(3)	(4)	(5)
size	0.414*** (0.048)	0.382*** (0.049)	0.333*** (0.056)	0.522*** (0.122)	0.576*** (0.127)
FOREIGN10	0.374 (0.250)	0.367 (0.251)	0.166 (0.275)	-0.271 (0.368)	-0.470 (0.389)
export_06	1.697*** (0.203)	1.661*** (0.203)	1.914*** (0.264)	1.995*** (0.317)	1.819*** (0.324)
LPROD10	0.212*** (0.059)	0.197*** (0.059)	0.216*** (0.065)	0.187* (0.077)	0.290*** (0.081)
R_D_inv		0.482*** (0.121)	0.605*** (0.137)	0.704*** (0.161)	0.765*** (0.168)
ICT_inv			0.391* (0.168)	0.483* (0.201)	0.449* (0.207)
skill_labor				-0.213* (0.105)	-0.237* (0.109)
North-West					0.395 (0.351)
North-East					0.748* (0.351)
Center					-0.097 (0.393)
ATECO15					-1.039* (0.494)
ATECO17					0.310 (0.394)
ATECO18					1.788*** (0.420)
ATECO19					1.142** (0.426)
ATECO20					-1.298 (1.057)
ATECO21					-0.657 (0.670)
ATECO22					0.390 (0.575)
ATECO24					0.039 (0.429)
ATECO25					-0.170 (0.434)
ATECO26					-1.053+ (0.552)
ATECO27					-0.661 (0.556)

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ATECO28					-0.045 (0.353)
ATECO29					-0.548 (0.357)
ATECO31					-0.294 (0.465)
ATECO32					0.081 (0.580)
ATECO33					-1.095 (0.794)
ATECO34					0.892+ (0.528)
ATECO35					-0.064 (0.729)
Constant	-6.411*** (0.360)	-6.404*** (0.360)	-6.859*** (0.436)	-7.035*** (0.513)	-7.768*** (0.684)
R-squared	0.104	0.111	0.125	0.132	0.186
N	4657	4657	3420	2703	2652

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

4.3 New Offshorers

The precedent analysis took into account the stock of companies offshoring between the two periods. In order to enforce the results found before and to study in detail the flow in terms of new-entrants in the two periods, we created two models for what we defined as 'New offshorers'. The information are derived by a panel data in order to control unobserved or unmeasurable sources of individual heterogeneity that vary across firms but do not vary over time and omitted variable bias, through the merged of the two dataset.

The evidence of new offshoring firms comes from the ninth survey 2001-2003, where 116 Italian enterprises started to offshore their manufacturing operations in that three years, with 183 companies already off-shored in 2000. The information comes out by the Figure 4.2 where companies where asked to define the incidence of offshoring over total sales in 2000 and in 2003. 116 are the companies that confirmed not offshore in 2001 giving any incidence over sales in 2000 and that, in different percentage of offshoring sales on total sales, started to offshore in the subsequent three years.

incidenza fatturato da delocalizzazione su fatturato totale - attuale	incidenza fatturato da delocalizzazione su fatturato totale - 2000							Total
	meno del	tra il 10	tra il 30	tra il 50	tra il 70	oltre il	non esist	
meno del 10% del fatt	47	0	0	0	0	1	65	113
tra il 10% e il 30%	34	22	0	0	0	0	36	92
tra il 30% e il 50%	6	12	11	1	0	0	7	37
tra il 50% e il 70%	1	8	10	8	0	0	4	31
tra il 70% e il 90%	2	0	1	6	5	0	2	16
oltre il 90%	0	3	1	0	1	3	2	10
Total	90	45	23	15	6	4	116	299

Figure 4.2: Evidence of new offshoring firms between 2001 and 2003

The tenth survey shows that 81 companies, effectively, started to offshore between 2004 and 2006. The information is derived by merging the two data-sets and matching the companies that in the 9th negatively answered when were asked whether they produced some manufacturing activity in foreign countries and and the ones that admitted to produce part of their manufacturing operations or to contract out some manufacturing tasks to foreign suppliers in the 10th survey. On the other side, we were interested also in the companies that were not present in the 9th survey, but that could be possibly new offshorers. The information about these companies has been derived from a question posed in the 10th survey about the first year of investment/contract with a foreign producer by region of internationalization. The assumption made was to consider only the companies for which the year of the first investment was subsequent to 2003, for any offshoring region.

Since this moment, we will define ‘new offshorers’ the companies that answered negatively to the question posed in the survey relative to the offshoring, respectively, in 2000 and 2003 and that, in different percentage of total sales, began to offshore part of their production activities abroad in the subsequent three-years period. Building on the literature, we consider both firm level and country level drivers of this process, from the perspective of internalization theory.

Methodology and results The analysis of the panel of data is based on a logit regression model. A logit model is implemented in the given periods with the flow of new offshorers in the three-years period 2001-2003 and 2004-2006 as the dependent variables as it is shown in tables 4.12 and 4.13.

Results confirm the robustness of the models and point out the main determinants of the firms that decide to start offshoring their production in 2001-2006.

The main determinant is size. Companies that are larger in terms of employees have more propensity to offshore than smaller and medium enterprises because they are able to contrast fixed costs related to the decision of locating production abroad.

Exportation as a preamble of offshoring is still confirmed. Companies that are already engaged in internationalization are more prepared to be involved in offshoring.

Action of market penetration can lead the company to move production in the same country it seeks to penetrate its product. For the purpose of evaluating the incidence of market penetration on the propensity to offshore we investigate the relation between the new offshorers in the country where the company operated some market penetration actions, and in particular we verify it for European countries identifies as non-industrialized (Romania, Poland, Bulgaria etc) ⁸ and for No-European non-industrialized countries ⁹. It emerges that market penetration is a substantial driver to move production in the same country where some market penetration action has been set-up. As long as the distance with respect to the home country increases, the overall incidence of market penetration on offshoring increases. Therefore, actions of market penetration in the No-European non-industrialized countries foster companies to operate some sort of production relocation there.

⁸ PENCOMUEN_9: Action of market penetration in European non-industrialized countries.

⁹ PENCORNIND_9: Action of market penetration in non-European non-industrialized countries.

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Table 4.12: Model(C): Determinants of new offshorers between 2001 and 2003.

Variable Name	(1)	(2)
	(1)	(2)
SIZE9	0.759** (0.233)	0.586*** (0.146)
ESPORTA_9	0.000 (.)	0.730 (0.808)
GRUPPO_9	0.000 (.)	0.000 (.)
RICESVI_9	1.192 (1.097)	0.341 (0.478)
ICTinv	0.000 (.)	
LPROD9	-0.020 (0.193)	-0.025 (0.118)
North-West		1.132 (1.072)
North-East		1.450 (1.078)
Center		1.566 (1.105)
ATECO18		0.884 (0.883)
ATECO19		0.432 (1.214)
ATECO20		0.000 (.)
ATECO22		-0.613 (1.234)
ATECO23		0.000 (.)
ATECO24		-1.366 (0.943)
ATECO25		-0.032 (0.785)
ATECO26		-0.888 (0.937)
ATECO28		-1.993+ (1.150)
ATECO29		-0.642 (0.641)

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ATECO31		0.438
		(0.741)
ATECO32		0.268
		(0.893)
ATECO33		-0.366
		(0.954)
ATECO34		-0.582
		(1.278)
ATECO35		-0.706
		(1.223)
Constant	-6.359***	-6.476***
	(1.551)	(1.455)
R-squared	0.150	0.153
N	175	635

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

4. Offshoring and reshoring in the Italian Manufacturing Sector

Table 4.13: Model(D): Determinants of new offshorers between 2004 and 2006.

Variable Name	(1)	(2)
size10	0.469*** (0.111)	0.474*** (0.117)
export_06	1.291** (0.438)	1.234* (0.482)
group	0.399 (0.293)	0.582+ (0.300)
R_D_inv	0.673* (0.269)	0.743** (0.280)
ICT_inv	1.140** (0.436)	1.176** (0.440)
LPROD10	0.163 (0.128)	0.201 (0.126)
North-West		0.808 (0.635)
North-East		0.923 (0.638)
Center		0.122 (0.742)
ateco15		-0.482 (0.643)
ateco17		-0.058 (0.606)
ateco18		0.836 (0.768)
ateco19		0.350 (0.763)
ateco20		-0.621 (1.105)
ateco21		-0.930 (1.104)
ateco24		-0.392 (0.683)
ateco25		-0.388 (0.677)
ateco26		-0.965 (0.746)
ateco28		-0.493 (0.553)
ateco29		-0.961+ (0.560)

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ateco31		-0.553
		(0.692)
ateco32		-0.295
		(0.897)
ateco35		-0.822
		(1.171)
Constant	-8.860***	-9.264***
	(0.842)	(1.100)
R-squared	0.137	0.170
N	3165	2740

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

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Table 4.14: Model(E): Determinants of new offshorers in EU12 and in non-European non-industrialized countries.

	NIND	EU12
SIZE9	0.233* (0.112)	0.278+ (0.153)
PENCOMNIND_9	0.980+ (0.542)	
PENCOMUEN_9		1.114+ (0.660)
North-West	0.780 (1.142)	0.084 (0.792)
North-East	1.851+ (1.115)	-0.800 (0.809)
Center	0.817 (1.220)	0.000 (.)
South	0.000 (.)	0.000 (.)
ATECO15	0.000 (.)	0.000 (.)
ATECO16	0.000 (.)	0.000 (.)
ATECO17	0.353 (1.070)	-1.299 (1.279)
ATECO18	0.597 (1.324)	1.615 (1.039)
ATECO19	0.778 (1.302)	0.453 (1.342)
ATECO20	0.527 (1.307)	0.000 (.)
ATECO22	0.408 (1.311)	0.000 (.)
ATECO24	-0.130 (1.072)	0.000 (.)
ATECO25	-0.402 (1.285)	-0.523 (1.100)
ATECO26	0.047 (1.065)	0.000 (.)
ATECO28	0.000 (.)	-1.831 (1.282)
ATECO29	-0.490 (0.881)	-1.760+ (1.049)
ATECO31	1.322 (0.960)	-0.260 (1.093)

4. Offshoring and reshoring in the Italian Manufacturing Sector

ATECO32	0.671 (1.309)	-0.327 (1.347)
Constant	-6.086*** (1.473)	-4.327*** (1.265)
R-squared	0.104	0.160
N	563	403

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

4.4 Back-shoring

The characteristics of back-shoring firms are further investigated using a multivariate analysis. The analysis reveals the strength of the causal impact between the explanatory variables reflecting the firm-specific characteristics of back-shoring firms and the dependent variable, which is the probability to reshore.

In particular, a logit regression model has been set up to investigating the strength of relationship between some variables like size, sector affiliation, product complexity, host region. As in the case of the panel of data used in the previous analysis, a merged between the two dataset of firms involved in the Uni-Credit bank surveys is needed.

To run the model, we defined the dependent variable - Back-shoring - as a dummy variable that takes the value 1 if the firm has back-shored production between the period 2003-2006, 0 otherwise.

Table 4.15: Sample firms by Back-shoring.

Dummy variable = 1 if some production currently relocated in the home-country.	Frequency	Percentage
0	4,114	98,56%
1	60	1,44%
Total	4,174	

The independent variables are set out by the analysis of the data-set and the outcomes derived from literature. The existing literature points out that if the firm has previously offshored in countries where the wages were subsequently readaptated to take into account the labor conditions, the probability to reshore is higher. It has been defined the dummy variable CHINA*, that takes value 1 if the firm has delocalized at least part of its production to China in 2001-2003 and 0 otherwise.

The more the product is complex, the more the company requires skills, the more the company realized that offshoring do not support specialization and quality. To take into account the complexity of the product, a dummy variable ISO9000 is used, which takes value 1 if the firm possesses the ISO 9000 certification and 0 otherwise. The ISO9000 certification is a proxy of the quality of the product, since it combines a series of norms to be established in order to improve the process efficiency, the product quality and customer satisfaction. Finally, in order to reduce the heterogeneity of the data-set, geographical area and industry affiliation are introduced in the model.

As for the offshoring models, the control variables are defined as a set of dummy variables which take value equal to 1 if the firm belongs to the industry identified

by the corresponding Ateco code, 0 otherwise and a set of dummy which take value equal to 1 if the firm belongs to the geographical area identified by the corresponding geographical area, 0 otherwise.

Variable Type	Variable Name	Description
Back-shoring	Back-shoring	Back-shoring = 1 if some production is currently relocated in the home-country.
Economic Variables	Size	Dummy variables where dim_dummy = 1 if the company belongs to the relative category of size (1=micro, 2=small, 3=medium, 4=large).
	ATECO	ATECO91 = 1 if the company belongs to the relative industrial sector.
Internationalization	China_off9	China_off9 = 1 if the company offshored production activities in China between 2000 and 2003, 0 otherwise.
Quality	ISO9000	ISO9000 = 1 if the company obtained the quality certification of ISO9000.

Table 4.16: Variables type, name and description in the Back-shoring model.

Results The eroding competitive advantage that at a first time forced firms relocation production abroad are causing firms to reconsider their manufacturing location decisions. The assertion is supported by the results related to the location variable of previous offshoring located in China. The model suggests that having located manufacturing operations in China between 2001 and 2003 augments the probability of back-shoring between 2004 and 2006. The eroding competitive advantage of China as offshoring location is demonstrated by the increase in wages, which doubled between 2000 and 2006 [103]. The closing gap in wages between developed and developing countries exerts pressure in reviewing the precedent offshoring strategy, especially when the dominated single motive has been the cost reduction.

Quality is the most spread recognized motivation in literature. Bailey and De propris [107] for U.K. as well as Kinkel for Germany [43] underlined how firms that manufacture particularly complex products are particularly concerned with quality issues, prioritizing the role of quality rather than efficiency-seeking motivations. The complexity of the process or the product is embodied by the ISO9000 dummy variable, modeled on the fact that it not easy for the company to replicate abroad the same management procedures that are implemented in the home country [61],

Table 4.17: Determinants of Back-shoring between 2003 and 2006.

Variable Name	(1)
Micro	0.000 (.)
Small	-0.872 (1.404)
Medium	0.653 (0.597)
Large	0.000 (.)
china_off9	1.532+ (0.897)
ISO9000	1.097* (0.536)
ateco2_dum3	-0.035 (1.297)
ateco2_dum16	0.827 (1.144)
Constant	-0.404 (0.493)
R-squared	0.082
N	89

+ Significant at 10%, * Significant at 5%, ** Significant at 1%, *** Significant at 0,1%

making it difficult to control effectively the level of quality. Since complex products require quality techniques and, if processes are transferred abroad, some sort of training to transfer procedures or quality requirements to foreign contractors, it may be difficult maintain the same level of quality, especially when products are based on elements other than the price. This is confirmed by the analysis on the Italian manufacturing sector, where the made-in-Italy has a crucial role the worldwide awareness. ISO9000 is significant in fostering the decision to relocate production in the home country.

Conclusion

The study is aimed at identifying the determinant factors of both offshoring and reshoring. Building on the literature applied to the field of international business, we have argued that offshoring and back-shoring decisions will be dependent on the firm's environment, firm's structure and specific characteristics. More specifically, we have argued that firms differ in their propensity to offshore and reshore depending on their internationalization strategy, their accrued technological capabilities or their specific investments.

An empirical analysis over an Italian survey confirmed our hypothesis. As discussed below, the overall pattern of results provides some insights regarding how firms' specific characteristics explain inter-firm differences in both offshoring and reshoring behaviour.

Offshoring propensity for Italian Manufacturing firms appear to strictly depends on:

- Size: even if the Italian Manufacturing sector is characterized by Small and Medium enterprises, the propensity to offshore increases with size. The fixed costs related to the decision to offshore production abroad are high and predominately sunk, which is why they cannot be affordable by small and medium companies.
- Exports: companies that are already engaged in internationalization business appear to have an higher probability to offshore. The theory of the internationalization business suggests how the internationalization is an incremental process for which companies are continuously experimenting new forms of internationalization, increasing their commitment.
- ICT investments: the role of ICT is fundamental in fostering offshoring since only companies who own a robust ICT infrastructure are able to implement a successful offshoring strategy.
- Labor productivity: productivity plays a pivotal role in determining and in supporting offshoring. Productivity can be defined as a determinant of off-

shoring, although we recognize a reverse effect (from offshoring to productivity) might occur.

The reverse decision to offshore consists of relocating production activities in the home country. The reshoring evidence is quite limited due to the data availability and the results pointed out through the analysis are:

- Backshoring is strongly related to the previous offshoring experience through the offshoring location. In fact, if the company has previously offshored in China, the probability of reshoring increases significantly.
- Reshoring reveals to be the option to uplift the Made-in-Italy effect. Companies that are certified by ISO9001, and hence that respond to predefined quality requirements, are those that deal with complex and specialised product. These companies might find reshoring as the way to better control the quality of the process and of the product they want to carry out.

4. Conclusion

Bibliography

- [1] Carine Peeters Arie Y.Lewin. *Offshoring Work: Business Hype or the Onset of Fundamental Transformation?* June 2006. URL: https://dipot.ulb.ac.be/dspace/bitstream/2013/9039/1/Lewin_Peeters_2006_LRP_Offshoring_business_hype_or_transformation.pdf.
- [2] Elhanan Helpman, Marc J Melitz, and Stephen R Yeaple. *Export versus FDI*. Working Paper 9439. National Bureau of Economic Research, Jan. 2003. DOI: 10.3386/w9439. URL: <http://www.nber.org/papers/w9439>.
- [3] Lawrence S. Welch and Reijo Luostarinen. “Internationalization: Evolution of a Concept”. In: *Journal of General Management* 14.2 (1988), pp. 34–55. DOI: 10.1177/030630708801400203. eprint: <https://doi.org/10.1177/030630708801400203>. URL: <https://doi.org/10.1177/030630708801400203>.
- [4] Wendy L. Tate et al. “Global competitive conditions driving the manufacturing location decision”. English. In: *Business Horizons* 57.3 (2014), pp. 381–390. DOI: 10.1016/j.bushor.2013.12.010.
- [5] Alejandro Rodríguez Valle. “Internationalization of the Business Firm: A Literature Review”. In: *Revista Nicolaita de Estudios Económicos* 0.2 (2011), pp. 57–71. URL: <https://ideas.repec.org/a/ris/rnicee/0063.html>.
- [6] Aviv Shoham and Gerald S. Albaum. “Reducing the Impact of Barriers to Exporting: A Managerial Perspective”. In: *Journal of International Marketing* 3.4 (1995), pp. 85–105. ISSN: 1069031X, 15477215. URL: <http://www.jstor.org/stable/25048625>.
- [7] LR de Mello Jr. “Foreign direct investment-led growth: evidence from time series and panel data”. In: *Oxford Economic Papers* 51.1 (1999), pp. 133–151. DOI: 10.1093/oep/51.1.133. eprint: /oup/backfile/content_public/journal/oep/51/1/10.1093_oep_51.1.133/1/133.pdf. URL: <http://dx.doi.org/10.1093/oep/51.1.133>.

- [8] Mark Anthony Farrell, Edward Oczkowski, and Radwan Kharabsheh. “Market orientation, learning orientation and organisational performance in international joint ventures”. In: *Asia Pacific Journal of Marketing and Logistics* 20.3 (2008), pp. 289–308. DOI: 10.1108/13555850810890066. eprint: <https://doi.org/10.1108/13555850810890066>. URL: <https://doi.org/10.1108/13555850810890066>.
- [9] S. Lael Brainard and David A Riker. *Are U.S. Multinationals Exporting U.S. Jobs?* Working Paper 5958. National Bureau of Economic Research, Mar. 1997. DOI: 10.3386/w5958. URL: <http://www.nber.org/papers/w5958>.
- [10] James R Markusen and Keith E Maskus. *Discriminating Among Alternative Theories of the Multinational Enterprise*. Working Paper 7164. National Bureau of Economic Research, June 1999. DOI: 10.3386/w7164. URL: <http://www.nber.org/papers/w7164>.
- [11] Dejene Mamo Bekana. “Determinants of foreign direct investment in Ethiopia; time series evidence from 1991-2013”. In: *Journal of Developing Areas* 50.1 (Jan. 2016), pp. 141–155.
- [12] Valerija Botrić and Lorena Škuflić. “Main Determinants of Foreign Direct Investment in the Southeast European Countries”. In: *Transition Studies Review* 13.2 (July 2006), pp. 359–377. ISSN: 1614-4015. DOI: 10.1007/s11300-006-0110-3. URL: <https://doi.org/10.1007/s11300-006-0110-3>.
- [13] James R. Markusen. “The Boundaries of Multinational Enterprises and the Theory of International Trade”. In: *The Journal of Economic Perspectives* 9.2 (1995), pp. 169–189. ISSN: 08953309. URL: <http://www.jstor.org/stable/2138172>.
- [14] Mary A. Marchant and Sanjeev Kumar. “An Overview of U.S. Foreign Direct Investment and Outsourcing”. In: *Review of Agricultural Economics* 27.3 (2005), pp. 379–386. ISSN: 10587195, 14679353. URL: <http://www.jstor.org/stable/3700863>.
- [15] Jan Johanson and Jan-Erik Vahlne. “The Internationalization Process of the Firm-A Model of Knowledge Development and Increasing Foreign Market Commitments”. In: *Journal of International Business Studies* 8.1 (1977), pp. 23–32. ISSN: 00472506, 14786990. URL: <http://www.jstor.org/stable/254397>.
- [16] N. Hood and S. Young. *The economics of multinational enterprise*. London, UK: Longman, 1979. URL: <http://eprints.gla.ac.uk/83727/>.

- [17] Jan Johanson and Jan-Erik Vahlne. “The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership”. In: *Journal of International Business Studies* 40.9 (Dec. 2009), pp. 1411–1431. ISSN: 1478-6990. DOI: 10.1057/jibs.2009.24. URL: <https://doi.org/10.1057/jibs.2009.24>.
- [18] Boyan Jovanovic. “Selection and the Evolution of Industry”. In: *Econometrica* 50.3 (1982), pp. 649–670. ISSN: 00129682, 14680262. URL: <http://www.jstor.org/stable/1912606>.
- [19] Paola Conconi, André Sapir, and Maurizio Zanardi. *The internationalization process of firms : From exports to FDI ?* Working Paper Research 198. National Bank of Belgium, Oct. 2010. URL: <https://ideas.repec.org/p/nbb/reswpp/201010-198.html>.
- [20] Oliver E. Williamson. “Transaction-Cost Economics: The Governance of Contractual Relations”. In: *The Journal of Law & Economics* 22.2 (1979), pp. 233–261. ISSN: 00222186, 15375285.
- [21] Martin Ricketts. *The economics of business enterprise: an introduction to economic organisation and the theory of the firm*. Edward Elgar Publishing, 2002.
- [22] Roger J Calantone and Michael A Stanko. “Drivers of outsourced innovation: an exploratory study”. In: *Journal of Product Innovation Management* 24.3 (2007), pp. 230–241.
- [23] Bianca Piachaud. “Outsourcing technology”. In: *Research-Technology Management* 48.3 (2005), pp. 40–46.
- [24] John H. Dunning. “Toward an Eclectic Theory of International Production: Some Empirical Tests”. In: *Journal of International Business Studies* 11.1 (1980), pp. 9–31. ISSN: 00472506, 14786990. URL: <http://www.jstor.org/stable/154142>.
- [25] Lisa M Ellram, Wendy L Tate, and Kenneth J Petersen. “Offshoring and reshoring: an update on the manufacturing location decision”. In: *Journal of Supply Chain Management* 49.2 (2013), pp. 14–22.
- [26] Gary Gereffi and Joonkoo Lee. “Why the World Suddenly Cares About Global Supply Chains”. In: 48.3 (2012). Exported from <https://app.dimensions.ai> on 2018/11/04, pp. 24–32. DOI: 10.1111/j.1745-493x.2012.03271.x. URL: <https://app.dimensions.ai/details/publication/pub.1043605710%20and%20http://www.cggc.duke.edu/pdfs/jscm3271.pdf>.

- [27] Michael E. Porter. “Competitive Advantage, Agglomeration Economies, and Regional Policy”. In: *International Regional Science Review* 19.1-2 (1996), pp. 85–90. DOI: 10.1177/016001769601900208. eprint: <https://doi.org/10.1177/016001769601900208>. URL: <https://doi.org/10.1177/016001769601900208>.
- [28] Christoph Bode et al. “Understanding responses to supply chain disruption: insights from information processing and resource dependence perspectives”. In: *The Academy of Management Journal* 54.4 (2011), pp. 833–856. ISSN: 00014273. URL: <http://www.jstor.org/stable/23045114>.
- [29] Scott C Ellis, Jeff Shockley, and Raymond M Henry. “Making sense of supply disruption risk research: A conceptual framework grounded in enactment theory”. In: *Journal of Supply Chain Management* 47.2 (2011), pp. 65–96.
- [30] John Cantwell. “Location and the multinational enterprise”. In: *Journal of international business studies* 40.1 (2009), pp. 35–41.
- [31] Jonathan P Doh, Kraiwinee Bunyaratavej, and Eugene D Hahn. “Separable but not equal: The location determinants of discrete services offshoring activities”. In: *Journal of International Business Studies* 40.6 (2009), pp. 926–943.
- [32] Masaaki Kotabe. “The relationship between offshore sourcing and innovativeness of US multinational firms: An empirical investigation”. In: *Journal of International Business Studies* 21.4 (1990), pp. 623–638.
- [33] Guido Nassimbeni, Marco Sartor, and Daiana Dus. “Security risks in service offshoring and outsourcing”. In: *Industrial Management & Data Systems* 112.3 (2012), pp. 405–440.
- [34] Enrico Pennings and Leo Sleuwaegen. “International relocation: firm and industry determinants”. In: *Economics Letters* 67.2 (2000), pp. 179–186.
- [35] Edward G Anderson Jr et al. “The effects of outsourcing, offshoring, and distributed product development organizations on coordinating the NPD process”. In: *Handbook of new product development management*. Routledge, 2007, pp. 275–306.
- [36] Ian Fillis. “Small firm internationalisation: an investigative survey and future research directions”. In: *Management decision* 39.9 (2001), pp. 767–783.
- [37] Rosario Crinò. *Offshoring, Multinationals and Labor Market: A Review of the Empirical Literature*. KITeS Working Papers 196. KITeS, Centre for Knowledge, Internationalization and Technology Studies, Università Bocconi, Milano, Italy, Jan. 2007. URL: <https://ideas.repec.org/p/cri/cespri/wp196.html>.

- [38] Kenneth J Petersen, Gary L Ragatz, and Robert M Monczka. “An examination of collaborative planning effectiveness and supply chain performance”. In: *Journal of Supply Chain Management* 41.2 (2005), pp. 14–25.
- [39] Andrea Martínez-Noya and Esteban García-Canal. “Technological capabilities and the decision to outsource/outsource offshore R&D services”. In: *International Business Review* 20.3 (June 2011), pp. 264–277. URL: <https://ideas.repec.org/a/eee/iburev/v20y2011i3p264-277.html>.
- [40] Wieczorek et al. *A Review of the European Offshore Wind Innovation System*. Innovation Studies Utrecht (ISU) working paper series 12-04. Utrecht University, Department of Innovation Studies, Dec. 2012. URL: <https://ideas.repec.org/p/uis/wpaper/1204.html>.
- [41] Carmen Diaz-Mora et al. *Determinants of outsourcing production: A dynamic panel data approach for manufacturing industries*. Tech. rep. 2005.
- [42] Ronald H. Coase. “The New Institutional Economics”. In: *Zeitschrift für die gesamte Staatswissenschaft / Journal of Institutional and Theoretical Economics* 140.1 (1984), pp. 229–231. ISSN: 00442550.
- [43] Steffen Kinkel and Spomenka Maloca. “Drivers and antecedents of manufacturing offshoring and backshoring—A German perspective”. In: *Journal of Purchasing and Supply Management* 15.3 (2009), pp. 154–165.
- [44] Marcus M Larsen, Stephan Manning, and Torben Pedersen. “Uncovering the hidden costs of offshoring: The interplay of complexity, organizational design, and experience”. In: *Strategic Management Journal* 34.5 (2013), pp. 533–552.
- [45] Igal Ayal and Jehiel Zif. “Market expansion strategies in multinational marketing”. In: *The Journal of Marketing* (1979), pp. 84–94.
- [46] Peter J. Buckley and M. Casson. “The Future of the Multinational Enterprise in Retrospect and in Prospect”. In: *Journal of International Business Studies* 34.2 (2003), pp. 219–222. ISSN: 00472506, 14786990. URL: <http://www.jstor.org/stable/3557154>.
- [47] Douglas W Caves, Laurits R Christensen, and W Erwin Diewert. “The economic theory of index numbers and the measurement of input, output, and productivity”. In: *Econometrica: Journal of the Econometric Society* (1982), pp. 1393–1414.
- [48] Eiichi Tomiura. “Foreign outsourcing and firm-level characteristics: evidence from Japanese manufacturers”. In: (2004).
- [49] Sylvie K Chetty. “Dimensions of internationalisation of manufacturing firms in the apparel industry”. In: *European Journal of Marketing* 33.1/2 (1999), pp. 121–142.

- [50] H.G.J. Gankema, H.R. Snuif, and P.S. Zwart. “The internationalization process of small and medium-sized enterprises: An evaluation of stage theory”. English. In: *Journal of Small Business Management* 38.4 (Oct. 2000), pp. 15–27. ISSN: 0047-2778.
- [51] McKinsey, Company, and Australian Manufacturing Council. *Emerging exporters : Australia’s high value-added manufacturing exporters : final report of the study*. English. ”June 1993”. Melbourne : Australian Manufacturing Council, 1993.
- [52] Gary A Knight and S Tamar Cavusgil. “Innovation, organizational capabilities, and the born-global firm”. In: *Journal of International Business Studies* 35.2 (Mar. 2004), pp. 124–141. ISSN: 1478-6990. DOI: 10.1057/palgrave.jibs.8400071. URL: <https://doi.org/10.1057/palgrave.jibs.8400071>.
- [53] Stefan Bock. “Supporting offshoring and nearshoring decisions for mass customization manufacturing processes”. In: *European Journal of Operational Research* 184.2 (Jan. 2008), pp. 490–508. URL: <https://ideas.repec.org/a/eee/ejores/v184y2008i2p490-508.html>.
- [54] Michael H. Grote and Florian A. Täube. “When outsourcing is not an option: International relocation of investment bank research – Or isn’t it?” In: *Journal of International Management* 13.1 (Mar. 2007), pp. 57–77. URL: <https://ideas.repec.org/a/eee/intman/v13y2007i1p57-77.html>.
- [55] Michael Gylling et al. “Making decisions on offshore outsourcing and backshoring: A case study in the bicycle industry”. In: *International Journal of Production Economics* 162 (2015), pp. 92–100.
- [56] Mehmet Demirbag and Keith W Glaister. “Factors determining offshore location choice for R&D projects: A comparative study of developed and emerging regions”. In: *Journal of Management Studies* 47.8 (2010), pp. 1534–1560.
- [57] Ben L. Kedia and Somnath Lahiri. “International outsourcing of services: A partnership model”. In: *Journal of International Management* 13.1 (Mar. 2007), pp. 22–37. URL: <https://ideas.repec.org/a/eee/intman/v13y2007i1p22-37.html>.
- [58] Peter Maskell et al. “Learning paths to offshore outsourcing: from cost reduction to knowledge seeking”. In: *Industry and Innovation* 14.3 (2007), pp. 239–257.
- [59] RF Melgers. “Factors that play a role in the offshoring strategy of European SMEs”. B.S. thesis. University of Twente, 2016.
- [60] OECD. Publishing. *OECD employment outlook 2013*. OECD publishing, 2013.

- [61] Steffen Kinkel, Gunter Lay, and Spomenka Maloca. “Development, motives and employment effects of manufacturing offshoring of German SMEs”. In: *International Journal of Entrepreneurship and Small Business* 4.3 (2007), pp. 256–276.
- [62] Benjamin M. Oviatt and Patricia Phillips McDougall. “Toward a Theory of International New ventures”. In: *Journal of International Business Studies* 25.1 (Mar. 1994), pp. 45–64. ISSN: 1478-6990. DOI: 10.1057/palgrave.jibs.8490193. URL: <https://doi.org/10.1057/palgrave.jibs.8490193>.
- [63] Susan Houseman. “Outsourcing, offshoring and productivity measurement in United States manufacturing”. In: *International Labour Review* 146.1-2 (2007), pp. 61–80.
- [64] Juan Alcacer and Wilbur Chung. “Location strategies and knowledge spillovers”. In: *Management science* 53.5 (2007), pp. 760–776.
- [65] Filippo Albertoni et al. “The reshoring of business services: Reaction to failure or persistent strategy?” In: *Journal of World Business* 52.3 (2017), pp. 417–430.
- [66] Jade Benjamin-Chung et al. “Spillover effects on health outcomes in low- and middle-income countries: a systematic review”. In: *International journal of epidemiology*. 2017.
- [67] Paul A. Samuelson. “Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization”. In: *Journal of Economic Perspectives* 18.3 (Sept. 2004), pp. 135–146. URL: <http://www.aeaweb.org/articles?id=10.1257/0895330042162403>.
- [68] Wilhelm Kohler. “Offshoring: Why Do Stories Differ?” In: *The EU and Emerging Markets*. Ed. by Gabriele Tondl. Vienna: Springer Vienna, 2009, pp. 17–49. ISBN: 978-3-211-92662-8. URL: https://doi.org/10.1007/978-3-211-92662-8_2.
- [69] Holger Görg, Aoife Hanley, and Eric Strobl. “Productivity Effects of International Outsourcing: Evidence from Plant-Level Data”. In: *The Canadian Journal of Economics / Revue canadienne d’Economie* 41.2 (2008), pp. 670–688. ISSN: 00084085, 15405982. URL: <http://www.jstor.org/stable/25478296>.
- [70] Alexander Hijzen, Holger Görg, and Robert C. Hine. “International outsourcing and the skill structure of labour demand in the United Kingdom”. In: 2004.
- [71] Ian Dew-Becker and Robert J Gordon. “Where Did the Productivity Growth Go? Inflation”. In: Working Paper Series 11842 (Dec. 2005). DOI: 10.3386/w11842. URL: <http://www.nber.org/papers/w11842>.

- [72] Susan Houseman et al. “Offshoring Bias in U.S. Manufacturing”. In: *The Journal of Economic Perspectives* 25.2 (2011), pp. 111–132. ISSN: 08953309. URL: <http://www.jstor.org/stable/23049456>.
- [73] Karsten Olsen. “Productivity Impacts of Offshoring and Outsourcing: A Review”. In: 2006/1 (2006). URL: <https://EconPapers.repec.org/RePEc:oec:stiaaa:2006/1-en>.
- [74] Calista Cheung, James Rossiter, and Yi Zheng. “Offshoring and Its Effects on the Labour Market and Productivity: A Survey of Recent Literature”. In: *Bank of Canada Review* 2008.Autumn (2008), pp. 17–30. URL: <https://ideas.repec.org/a/bca/bcarev/v2008y2008iautumn08p17-30.html>.
- [75] Mary Amiti and Shang-Jin Wei. *Service Offshoring and Productivity: Evidence from the United States*. Working Paper 11926. National Bureau of Economic Research, Jan. 2006. DOI: 10.3386/w11926. URL: <http://www.nber.org/papers/w11926>.
- [76] Robert C Feenstra and Gordon H Hanson. *Globalization, Outsourcing, and Wage Inequality*. Working Paper 5424. National Bureau of Economic Research, Jan. 1996. DOI: 10.3386/w5424. URL: <http://www.nber.org/papers/w5424>.
- [77] Lori G Kletzer. *Job loss from imports: Measuring the costs*. Peterson Institute, 2001.
- [78] John V Gray et al. “The reshoring phenomenon: what supply chain academics ought to know and should do”. In: *Journal of Supply Chain Management* 49.2 (2013), pp. 27–33.
- [79] Lisa M Ellram, Wendy L Tate, and Kenneth J Petersen. “Offshoring and reshoring: an update on the manufacturing location decision”. In: *Journal of Supply Chain Management* 49.2 (2013), pp. 14–22.
- [80] Luciano Fratocchi et al. “When manufacturing moves back: Concepts and questions”. In: *Journal of Purchasing and Supply Management* 20.1 (2014), pp. 54–59.
- [81] Helen Lam and Anshuman Khare. “Addressing Volatility, Uncertainty, Complexity & Ambiguity (VUCA) Through Insourcing and Backshoring”. In: *Managing in a VUCA World*. Ed. by Oliver Mack et al. Cham: Springer International Publishing, 2016, pp. 141–149. ISBN: 978-3-319-16889-0. DOI: 10.1007/978-3-319-16889-0_9. URL: https://doi.org/10.1007/978-3-319-16889-0_9.

- [82] Meryem Uluskan, Jeffrey A Joines, and A Blanton Godfrey. “Comprehensive insight into supplier quality and the impact of quality strategies of suppliers on outsourcing decisions”. In: *Supply Chain Management: An International Journal* 21.1 (2016), pp. 92–102.
- [83] Weifeng Zhai, Shiling Sun, and Guangxing Zhang. “Reshoring of American manufacturing companies from China”. In: *Operations Management Research* 9.3 (Dec. 2016), pp. 62–74. ISSN: 1936-9743. DOI: 10.1007/s12063-016-0114-z. URL: <https://doi.org/10.1007/s12063-016-0114-z>.
- [84] C Bellego. “Reshoring: a multifaceted decision involving much more than just labour costs”. In: *Les* 4 (2014), pp. 1–4.
- [85] Gabriel R. G. Benito and Lawrence S. Welch. “De-Internationalization”. In: *MIR: Management International Review* 37 (1997), pp. 7–25. ISSN: 09388249, 18618901. URL: <http://www.jstor.org/stable/40228430>.
- [86] Jean J Boddewyn and Roger Torneden. “US foreign divestment-preliminary survey”. In: *Columbia Journal of World Business* 8.2 (1973), pp. 25–29.
- [87] Rene Belderbos and Jianglei Zou. “Foreign investment, divestment and relocation by Japanese electronics firms in East Asia”. In: *Asian Economic Journal* 20.1 (2006), pp. 1–27.
- [88] John Ferreira and Len Prokopets. “Does offshoring still make sense?” In: *Supply Chain Management Review* 13.1 (2009).
- [89] Charles Fine. “Intelli-Sourcing to Replace Offshoring as Supply Chain Transparency Increases”. In: *Journal of Supply Chain Management* 49.2 (2013), pp. 6–7.
- [90] Harold L Sirkin, Michael Zinser, Douglas Hohner, et al. *Made in America, again: Why manufacturing will return to the US*. Boston Consulting Group Boston, 2011.
- [91] Tiia Vissak. “Nonlinear internationalization: A neglected topic in international business research”. In: *The past, present and future of international business & management*. Emerald Group Publishing Limited, 2010, pp. 559–580.
- [92] L Fratocchi et al. “Manufacturing back-and near-reshoring: A comparison of European and North American companies”. In: (2015).
- [93] Harold L Sirkin et al. “US manufacturing nears the tipping point: Which industries, why, and how much”. In: *BCG perspectives, March* 22 (2012).

- [94] Neil M. Coe, Peter Dicken, and Martin Hess. “Global production networks: realizing the potential”. In: *Journal of Economic Geography* 8.3 (2008), pp. 271–295. DOI: 10.1093/jeg/lbn002. eprint: /oup/backfile/content_public/journal/joeg/8/3/10.1093/jeg/lbn002/2/lbn002.pdf. URL: <http://dx.doi.org/10.1093/jeg/lbn002>.
- [95] Jens Hultman et al. “An interaction approach to global sourcing: A case study of IKEA”. In: *Journal of purchasing and supply management* 18.1 (2012), pp. 9–21.
- [96] Annalisa Tunisini, Roberta Bocconcelli, and Alessandro Pagano. “Is local sourcing out of fashion in the globalization era? Evidence from Italian mechanical industry”. In: *Industrial Marketing Management* 40.6 (2011), pp. 1012–1023.
- [97] Stephen Canham and Robert T. Hamilton. “SME internationalisation: offshoring, “backshoring”, or staying at home in New Zealand”. In: *Strategic Outsourcing: An International Journal* 6.3 (2013), pp. 277–291.
- [98] Fabienne Fel and Eric Griette. “Near-reshoring your supplies from China: a good deal for financial motives too”. In: *Strategic Direction* 33.2 (2017), pp. 24–26.
- [99] Luciano Fratocchi et al. “Manufacturing back-reshoring—an exploratory approach for hypotheses development”. In: (2013).
- [100] Steffen Kinkel. “Future and impact of backshoring—Some conclusions from 15 years of research on German practices”. In: *Journal of Purchasing and Supply Management* 20.1 (2014), pp. 63–65.
- [101] Benedikt Wiesmann et al. “Drivers and barriers to reshoring: a literature review on offshoring in reverse”. In: *European Business Review* 29.1 (2017), pp. 15–42.
- [102] Frances J Milliken. “Three types of perceived uncertainty about the environment: State, effect, and response uncertainty”. In: *Academy of Management review* 12.1 (1987), pp. 133–143.
- [103] Carmen Martinez-Mora and Fernando Merino. “Offshoring in the Spanish footwear industry: A return journey?” In: *Journal of Purchasing and Supply Management* 20.4 (2014), pp. 225–237.
- [104] Jan Stentoft Arlbjørn and Ole Stegmann Mikkelsen. “Backshoring manufacturing: Notes on an important but under-researched theme”. In: *Journal of Purchasing and Supply Management* 20.1 (2014), pp. 60–62.

- [105] Alison Ashby. “From global to local: reshoring for sustainability”. In: *Operations Management Research* 9.3 (Dec. 2016), pp. 75–88. ISSN: 1936-9743. DOI: 10.1007/s12063-016-0117-9. URL: <https://doi.org/10.1007/s12063-016-0117-9>.
- [106] Björn Claes and C Lakshman. “Managing the human resources in the supply chain”. In: *Supply Chain Forum: An International Journal*. Vol. 13. 2. Taylor & Francis. 2012, pp. 2–3.
- [107] David Bailey and Lisa De Propris. “Manufacturing reshoring and its limits: the UK automotive case”. In: *Cambridge Journal of Regions, Economy and Society* 7.3 (2014), pp. 379–395.
- [108] Kai Foerstl, Jon F Kirchoff, and Lydia Bals. “Reshoring and insourcing: drivers and future research directions”. In: *International Journal of Physical Distribution & Logistics Management* 46.5 (2016), pp. 492–515.
- [109] Luciano Fratocchi et al. “Motivations of manufacturing reshoring: an interpretative framework”. In: *International Journal of Physical Distribution & Logistics Management* 46.2 (2016), pp. 98–127.
- [110] Finbarr Livesey. “The need for a new understanding of manufacturing and industrial policy in leading economies”. In: *Innovations: Technology, Governance, Globalization* 7.3 (2012), pp. 193–202.
- [111] Silvia Grappi, Simona Romani, and Richard P Bagozzi. “Consumer stakeholder responses to reshoring strategies”. In: *Journal of the Academy of Marketing Science* 43.4 (2015), pp. 453–471.
- [112] Pamela K. Robinson and Linda Hsieh. “Reshoring: a strategic renewal of luxury clothing supply chains”. In: *Operations Management Research* 9.3 (Dec. 2016), pp. 89–101. ISSN: 1936-9743. DOI: 10.1007/s12063-016-0116-x. URL: <https://doi.org/10.1007/s12063-016-0116-x>.
- [113] Malin Johansson et al. “Offshoring versus backshoring: Empirically derived bundles of relocation drivers, and their relationship with benefits”. In: *Journal of Purchasing and Supply Management* (2018).
- [114] Koen De Backer et al. “Reshoring: Myth or reality?” In: *Journal of Purchasing and Supply Management* (2016).
- [115] L. Abramovsky and R. Griffith. “Outsourcing and offshoring of business services: How important is ICT?” In: *Journal of the European Economic Association* 4.2-3 (2006), pp. 594–601.