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EVOLUZIONE DELLA STRATEGIA DI
INTERNAZIONALIZZAZIONE AZIENDALE E NUOVE EVIDENZE
DEL RESHORING

EVOLUTION OF THE FIRM'S INTERNATIONALIZATION
STRATEGY AND NEW EVIDENCE OF RESHORING

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Abstract

Oggi, le aziende sono globali nelle loro operazioni. L'intera catena del valore non è più riferibile ad una regione o un paese ed ogni elemento che la compone avviene su scala mondiale. Il fenomeno dell'offshoring, inteso come il processo di delocalizzazione all'estero di precise attività del business, ha assunto sempre maggiore importanza. Fin dagli anni '60 le numerose aziende che praticavano tale strategia sono riuscite ad ottenere maggiori vantaggi, tra i più comuni la possibilità di reperire forza lavoro ad un costo nettamente inferiore. Tuttavia recenti evidenze mostrano una controtendenza nelle scelte localizzative delle imprese. L'entusiasmo delocalizzativo fino ad ora registrato si sta attenuando, ed una crescente attenzione incomincia ad esser rivolta verso i numerosi casi di reshoring, ovvero il rientro nel paese d'origine delle attività e dei processi precedentemente delocalizzati. L'obiettivo che si pone il seguente lavoro è quello di comprendere i fattori che hanno incentivato le strategie di offshoring nel passato e ad oggi quelle nuove implicazioni che hanno influenzato i progetti di rimpatrio del business. Si cercherà di capire se il reshoring sia la mera conseguenza di scelte di offshoring errate oppure una razionale strategia di internazionalizzazione adattata ai nuovi paradigmi economici. Inoltre, dato il crescente peso che la tecnologia e l'automazione hanno sulle scelte strategiche aziendali, si è voluto analizzare quanto questo abbia influito sui progetti di reshoring in Europa.

Abstract

Today, companies are global in their operations. The entire value chain is no longer attributable to a region or country and every element that composes it occurs worldwide. The phenomenon of offshoring, understood as the process of locating specific business activities abroad, has become increasingly important. Since the 1960s, the numerous companies that have practiced this strategy have managed to obtain greater advantages, among the most common being the possibility of finding workforce at a significantly lower cost. However recent evidence shows a countertrend in the location choices of companies. The delocalization enthusiasm registered so far is easing, and increasing attention begins to be directed towards the numerous cases of reshoring, that is, the return to the country of origin of the activities and processes previously offshored. The purpose of the following work is to understand the factors that have incentivized offshoring strategies in the past and to date those new implications that have influenced the business repatriation projects. We will try to understand if reshoring is the mere consequence of wrong offshoring choices or a rational internationalization strategy adapted to the new economic paradigms. Furthermore, given the growing weight that technology and automation have on corporate strategic choices, we wanted to analyze how much this has influenced the reshoring projects in Europe.

Introduction

Nowadays companies are global in their operations and objectives. Starting from the second half of the twentieth century, the activities of the value chain and its elements, which were once mostly concentrated in the country of origin, have been required a clear reorganization on a global scale (Caroli, 2012). The sudden development of innovative technologies in the ICT (Information and Communication Technology) segment, the facilitation of moving capitals and people, the progressive liberalization of markets and the economic influence on the worldwide scenario of developing countries such as China and India, are only some of the factors that contributed to the spread of complex international business organizations. This change in economic conditions has led many companies to adopt governance models that allowed for high organizational and structural flexibility, in order to be able to adapt themselves, and be more efficient against changes in world demand and local needs. In this perspective, since the 1960s many managers (primarily Americans) have embraced the strategy of offshoring, commonly understood as the movement of various value chain activities beyond national borders, in order to find more favorable economic conditions, such as cheaper labor costs and tax exemption. The enormous benefits that "first movers" have drawn from this type of strategy has created enthusiasm and an unprecedented delocalization trend both in terms of goods and services. Most of the literature has

focused on studying the benefits of this phenomenon, however, since the mid-1990s, a group of intellectuals has opposed to it. These scholars, aware of the dynamism of economic conditions, focused on the analysis of the risks and pitfalls associated with these organizational practices. In fact, recently there has been a progressive spread of reshoring cases, generally understood as the return to the country of origin of the activities that had previously been delocalized. Factors such as the convergence of wages between western and emerging countries, the loss of quality, long transport times and the opening to new markets, are only some of the causes that led to this turnaround change.

The purpose of this thesis is to provide a complete framework of the existing literature and proving evidence of these phenomenon with an international connotation and more specifically in the EU-28 contest. The focus is on the key factors and in which extent these affect companies' perception for the attractiveness of various region as location for owned or not manufacturing facilities The interest is addressed to the analysis of the different features, activities, structures and financial effort that an internationalization strategy needs to be effective among all industries. Finally, given the growing attention and popularity of the topic, will be discussed the impact the spreading of automated processes and increasingly efficiency of industrial robots has generated on the European repatriation's choices of activities. If the first two chapters treat respectively with the benefits and critical issues of the offshoring and reshoring strategies, the third chapter is entirely

dedicated to an empirical analysis that aims to assess the macroeconomic impact that industrial robots have on wages, employment, and trade in European countries.

CHAPTER 1: Offshoring and relocation strategy

1.1 "World in changing"

According to common knowledge, in the last few decades there has been a substantial and general growth in global well-being and wealth. The average improvement in world conditions is the result of an industrialization process that began in the late 19th century. More recently, it is commonly attributable to technological achievements and to the growing process of liberalization of the markets that allowed the exchange of goods and skills necessary for the development of countries that were "catching up" in comparison to the western economies. This unstoppable improvement of economic conditions, which for some expert is due to by the world's population increase, brings with it pitfalls that affect this unstable well-being. The companies, although obtaining greater profits, struggle incessantly with despicable market competitiveness and pressure from stakeholders, forcing them to make decisions and implementing strategies that can often be reviewed in terms of sustainability and humanity. Financial markets, on the other hand, even if expanding, show less and less predictable and fluctuating trends, sometimes resulting in catastrophic "crack" of the stock markets. Among the world governments involved in the main decision for economic policies and international agreements, precarious stability is hidden and it is not uncommon for trade wars to be analyzed, which can affect the balance between the countries

themselves. Thus, an interconnected and increasingly globalized world provides new boundaries and markets by modifying the traditional temporal and spatial relations of competition, but on the other hand, brings with it threats to which economic actors are forced to adapt for surviving. At this point, in order to provide an adequate understanding of the issues concerning today's dynamics of delocalization and internationalization of the business, it is appropriate to explain the development and evolution of the globalization process starting from past decades.

The first or "old" globalization, took place in the second half of the XIX century, it was mainly boosted by the availability of steam energy, new communication tools and by a substantial period of international peace. In this period, the costs of transporting goods recorded a significant drop, triggering a cycle of industrial agglomeration and growth that led the European countries and the North-American area to an absolute economic domination. The substantial differences in economic power that arose in this period created the conditions for conceiving the so-called "great divergence" between the world's geographic areas (Richard Baldwin, 2018). Subsequently, the "new" globalization of the late 1900s, promoted by information technology, made it convenient for multinational companies, and not only, to transfer labor-intensive work to developing countries in the first place, but also ideas, marketing know-how, managerial and technical knowledge. The combination of high technology and low wages is thus favoring the rapid

industrialization of a handful of nations that have remained on the margins of the economy so far, while we are witnessing the simultaneous but partial deindustrialization of developed nations. Among the years, the dynamism and competitiveness of the economic environment, the consumerist nature of the western individuals and the exponential increase in demand from Asiatic market, have led companies to offer innovative goods aimed at filling more demanding and differentiated needs. In this way, the right conditions have been created for the advent of more organized, competitive and flexible companies, covering a vast range of activities and interests directly and indirectly linked to the core-business necessary to guarantee the efficiency of all the phases that make up the value chain. Until the mid-1990s, company policies focused on pursuing real performance, favoring productivity goals, market space objectives and activities capable of translating into medium-long term economic results. In many cases, this phase of rapid expansion on increasingly large markets has unbalanced business management, favoring financial performance over the natural production core business, turning corporate strategies to obtain short-term economic benefits. Multinationals, for example, are large companies, whose ownership and management are located in one country, while production plants and distribution structures are commonly located in different countries, and whose decisions therefore have political and economic weight outside the country of origin. (def. Treccani). Nowadays, among the top multinational players there are electronic

equipment companies, as Apple, that are demonstrating how all this is possible and convenient. Apple, like many other top brands, was able to penetrate the world market thanks to a complex planning strategy aimed at dislocating some phases of the value chain. Classic example is the positioning of R&D and design centers in those countries where technical and technological skills were relatively expensive, while cost and assembly centers in those developing countries where lower wage levels and less stringent regulations are often recorded. Furthermore, by exploiting political-occupational interests, as well as international treaties, national laws and their economic power, MNEs often manage to obtain facilitating tax treatments by providing numerous local jobs in exchange. As can be seen, the advantages do not concern the mere profitability of the hosted company. Ireland, for example, in the last 10 years, thanks to its policies, agreements and incentives aimed at the entry of foreign capital for most Americans, has an increase in GDP never recorded before (in 2015 it rose by 26.6%), well above the European average and an 11% decrease in the unemployment rate over the last 7 years, reaching record levels (Eurostat). All this can help to understand the complexity of the economic environment, the social and political interests and the number of individuals involved in the strategies implemented by MNE. Often the internationalization process allows to plan a sophisticated strategic organization by relocating activities, work and processes, exploiting the economic peculiarities of the host country, and to benefit in terms of cost, efficiency, tax benefits and market-share. The current panorama, however,

often move the goalposts, implying an increasingly imminent reaction and adaptation to a short-term view strategy. One of the crucial changes that has taken place in the past, according to the International Labor Organization, real wages in Asia between 2000 and 2008 rose by 7.1-7.8% a year. Salaries in advanced economies, on the other hand, rose by just 0.5% to 0.9% a year between 2000 and 2008, says the McKinsey Global Institute. It is not difficult to think that at this rate a substantial convergence has been reached between the wages of Asian countries such as China and India and the most advanced countries, crumbling over time the substantial concept of functional dualism on which it has been based until now modern industrial ideology. The distinction between "assembled" countries and "designed" countries remains clear in the economic environment, but alone no longer allows us to explain the cause of the new strategic choices made by companies. The enormous cost advantages registered in the past have deteriorated. The allocation of production factors such as capital and labor, specialization and competitive advantages are still crucial in economic analyzes, but the advent of new 4.0 industry compliance and robot technologies, the opening of new markets, the sudden changes in trends and the increase of global demand for goods, make it difficult to understand corporate strategies. Furthermore, the expansion of the network of relationships with suppliers and interests of different nature among all economic actors throughout the entire value chain, have resulted in the attention of

numerous scholars explaining the motivations driving the outsourcing decisions and repatriation of some business-related activities.

1.2 Companies' internationalization process

Among the factors that most characterize economic integration between countries in the past years there is the increasingly significant weight of international trade in intermediate goods, semi-finished goods, parts and components. The growth of this type of trade, which according to various studies in the beginning of the 2000 (Hummels et. Al., 2001; Yeats, 2001) constituted at least 20% of world trade, now is reaching the half of the total international trade. This happened because of absolute growth of items quantity offered in general and due to the increasing number of goods that are not produced entirely in a single country. With the drop in the costs of international transport and the development of a numerous of communication technologies, as already pointed out, it is now much easier, than a few years ago, to procure the necessary intermediate inputs or to carry out processing phases in different parts of the world. The inevitable "trade integration", also aimed at homogeneously developing the world economy, has sanctioned the process of "production disintegration" in national and international areas. The Helpman et. Al. (1985) theory causally links the growth of the size of the economy among countries to the increase in international trade, underlining how the excess of demand for goods in other countries could be entirely filled by the supply of states that had an advanced resource pool and more efficient process management. The exchange of finished products alone does not explain the exponential growth

of import / export between countries. The focus should be on the air and ocean traffic of semi-finished goods that are often traded several times during the production process, thus increasing the number of exchanges recorded. For instance, watches could be designed in Switzerland, but they are often produced and assembled in countries far away from Europe. An Italian stylist can brand his shoes, but they are often sewn and packaged in central and eastern European countries. American air-craft companies as Boeing assemble in US importing components from all around the world: engines, landing gear structure and wings are components respectively produced in U.K., France and Japan.

1.2.1 Internationalization definition

The term internationalization, as it applies to a business firm, can be defined as its involvement in business practices or activities, across national-borders (*Rodriguez Valle, 2011*). Albaum and others, 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. Hymer (1976) tries to justify internationalization as a moment in the business development process, in a geographical sense and according to both horizontal and vertical growth paths.

According to Hymer, the company grows nationally through a process of concentration (increase in market shares, acquisitions and mergers) allowing it to expand its profits. At some point, however, the concentration process at the local level cannot longer be pushed further, contained by the strength of local competitors and limited demand. The high profit deriving from the degree of monopoly reached by a few companies is inevitably usable for investments abroad, with the aim of extending the process of physical and occupational growth, and for acquiring a large slice of the market even beyond the frontier.

1.2.2 Internationalization's stages and implications

The classic pattern of internationalization arises from no exporting condition, to exporting via agent, and then to a sales subsidiary and finally to a production branch. The main idea below is that firms start to serve an external market before deciding to invest there (Johanson & Vahlne, 2009). As long as the market request increases, the dissimilarity among the operations augment drastically and the internationalization process increments following the idea of "let others do what they do best". This seems to be mainly due to the growing awareness of the foreign markets along with increased competences, know-how and experience. In fact, as supported by Boyan Jovanovic (1982), the uncertainty plays a crucial role in the engagement in international business. When deciding to operate in an international environment, there is no certitude about the sign of future profits and the only way of discovering is to start operating there. Companies often have to face with cultural and institutional factors and for this reasons they may test the profitability of a market through exporting its products to the foreign country until the moment the profits earned by exports are not enough to cover trade costs.¹ The internationalization strategy put the base on the theory of *transaction costs*: it

¹ At the same time the government of the foreign country could, however, discourage the import by imposing higher taxes on imported goods to affect the earnings. 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.

establishes the substantial convenience of entrusting certain business processes to third parties when the advantages deriving from the outsourcing of production are greater than the transaction costs coming from the relationship with the suppliers. At this point with the aim of lowering indirect costs, having reduced information asymmetries thanks to the previous export experience and the grown relationships with foreign suppliers, the company starts to think about new ways and strategic approaches to expand its own internationalization process.

For instance, Outsourcing, is generally defined as "that particular mode of relocation that has as its object the enucleation of entire areas of activity, strategic and otherwise, and which is based on the establishment of a collaboration between the company that outsources and a company already present on the market as a specialist "(Arcari, 1996).

Outsourcing is therefore, in the economic habit, the set of practices adopted by the companies with which they recur to other companies for carrying out some phases of the production process. We are in all those cases in which a company adopts a strategy where it entrusts to an external supplier a business activity. Generally, are those activities to be deemed identifiable by the organization without running the risk of compromising the distinctive competences in its possession. Indeed, often the offshored activities are not part of "core-business activities". In this regard, we can cite the so-called logic of "make" or "buy", with which we refer to the choice of a company or organization to build or perform internally (make), or of buy

outside (buy), a component, a product or a service necessary for production and all the efficiency of the value chain.² In general, the outsourcing of activities increases with the maturity of the industrial sector because the advantages of specialization and economies of scale increase. In any case, the benefits and possible threats due to the choice of implementing foreign investments or importing goods needed to produce finished products depends on various factors including the choice of rental, the financial commitment and the goal that each company tries to pursue.

² The choice is mainly based on the comparison of the total costs to be sustained in the two cases. The make option (or hierarchy) offers above all the advantage of guaranteeing a main direct control over the activity, the suppliers and the quality of the product or service. It allows more privacy among the flows of information that constantly run through all the business levels and provide the right environment for an efficient collaboration between the R&D and the production department. The buy (or market) option, on the other hand, offers the major advantage of entailing lower fixed costs and therefore lower capital assets, allowing greater flexibility of production capacity.

1.3 Market entry mode strategy

Among the industrial sectors, the foreign market entry strategies differ in the degree of risk, the extent of control and the level of commitment of resources, time and effort; this should be compared with the return on investment they could obtain by operating there. By focusing on expanding internationalization methods, can be defined two fundamental entry 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, based on the degree of engagement and financial effort, can be made in three categories:

- internationalization through the exchange of goods
- internationalization of the firm's know-how and competencies
- internationalization of the production

The market-entry technique of internationalization through trade of goods is the one that offers the lowest level of risk and the least market control. Is a non-equity mode technique because is not requesting any ownership in the external company and, as said before, it is identifiable as internationalization activities referred to export and

import of goods, materials and services.³ Moreover, there are two types of exporting: direct and indirect. In the case of direct exporting, the firm becomes directly involved in marketing its products in foreign markets, while indirect export the 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.

Despite the higher expected return on investments, the internationalization of the firm's expertise faces greater risk, but it is characterized by limited commitment of resources and efforts. This could be the case of licensing out intellectual property rights (such as patents, trademarks, copyrights, technology, technical know-how, marketing skills or some other specific skills) giving the right to another company to sell the parent's company products and so to exploit its brands. The transfer of all the competencies and intangibles, proper of the home country, has to be clear and addressed to the right creation of the value without affecting negatively the company image.

The last market entry technique is the internationalization of the production that relates to FDI (Foreign Direct Investment) and *offshoring*. The International Monetary Fund (IMF) and the World Bank defined the FDI as the net flow of

³ Imports are 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.

investment that involves a long-term relationship reflecting a lasting management interest, 10% or more of voting stocks, in an enterprise, operating in another economy than the investor one. It is generally seen as a composite package of capital, technology, and entrepreneurship that can affect positively the economy in the host economy. Numerous are the benefits, for instance through labor training, skill acquisition and diffusion, and the introduction of new managerial practices and organizational arrangements (de Mello, 1999), but at the same time allowing the home company to earn profits from selling goods and services in the foreign markets. 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*

Vertical FDI (VFDI) is addressed 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 (intra-firm trade). The aim of the vertical FDI is to take advantage of lower production costs in the host country (most of the time are low labor cost county) and pursuing

efficiency by exploiting the capabilities of the host country in combination with the domestic conditions.⁴ These investments are the most advanced international expansion method in terms of positioning the company internationally and for the consistency of the competitive strategy in geographic markets other than the one of origin (Caroli, 2012). Offshoring, as relocation of production activities in a foreign country, can be assimilated as a form of vertical foreign direct investment, where the financial effort is driven by cost reduction strategies, but do not necessarily require any investment in associate company or taking part in a joint venture. We will talk about the offshoring phenomenon in more detail later.

- *Horizontal FDI*

Horizontal FDI (HFDI) on the other hand, is a type of investment directed to replicate abroad the same activities as those performed domestically in order to serve local or neighboring markets, with standardized offers, avoiding trade barriers and transportation costs (Brainard et. Al., 1997). Horizontal FDI involve operating abroad in the same industry as a firm operate, or offers the same product or services as it does in the home country, and tends to produce for local or original markets only without exporting

⁴ The direct consequences involve a greater utilization of skilled labor and the necessity of more supervision and coordination by the parent company. What can characterize this investment is that the investors are interested in forming partnerships with suppliers or even competitors, using same distribution network, in order to benefit from economies of scale, economies of scope and shared ownership.

much output to host country (Markusen, Maskus, 1999). The purpose is 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 allowing them to share experience, resources, and acknowledgment that already have developed in-house (Botric, Skuic, 2006). 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 (Markusen, 1995). Furthermore, horizontal FDI flows mainly intervene between organized countries and mainly explain the expansion of intra-industrial trade. In the case of horizontal FDI, the choice of producing abroad can be linked above all to the possibility of reducing the costs of access to the foreign market, or for better adapting the production to the preferences of the local demand, exploiting the contiguity of the productive activity to the markets of consumption.

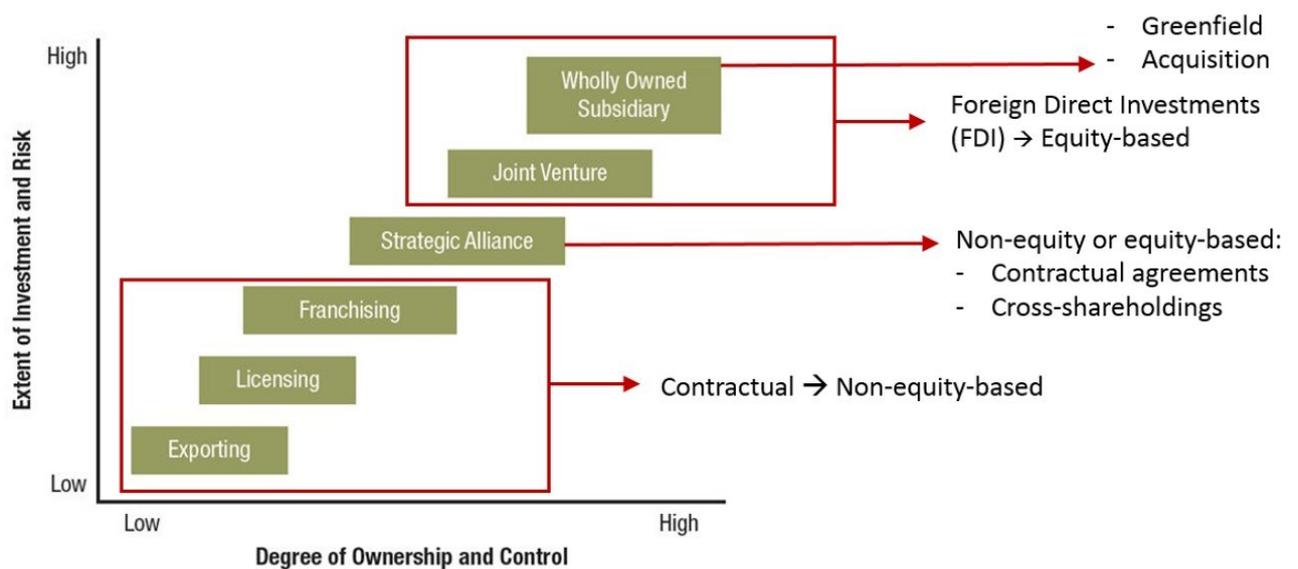
Foreign direct investments can be *Greenfield* or *Brownfield*. The adoption of a *Greenfield* method allows the company to enter a foreign market using the most appropriate location, starting the activity "ex novo" and then with the structural and

organizational characteristics established directly by the parent company (Comacchio, 2013). This kind of acquisition is appealing because it provides to the company a quick and established access to a new market. However, this model may involve two types of weaknesses: *liability of newness* due to the fact of being at an early stage and therefore not having yet developed trust relationships; and *liability of foreignness* linked to lack of knowledge specifics for the new market and in general for the cultural and institutional scenario. For overcome these obstacles, we can consider the adoption of a *brownfield* model, that is the acquisition of pre-existing activities.

Therefore, companies implement their strategic delocalization decisions not only based on the types of goods or services offered and the core activities, but also, they based the choice on tariff rates, the degree of adaptation of the required product, marketing issues, control on processes, transportation costs and involved risks. In this context, it is common that hybrid forms of internationalization can also be established between companies. By relocating only some activities of the value chain, an attempt is made to share fair market risks and profits without resorting to substantial capital investments. In this regard, other methods of accessing new markets are strategic alliances such as *strategic agreements* and *joint ventures*. This approach allows companies to enter the foreign market efficiently and flexibly by expanding the pool of skills, operational knowledge and tracking the market trend in a better way. Substantially, the strategic alliance involves a contractual

agreement between two or more enterprises stipulating that the interested parties will cooperate in a certain way for a certain period to achieve a common objective. To define if the alliance approach is suitable for the firm, the company must decide what value the partner could bring to the venture in terms of both tangible and intangible aspects. The Figure 1 identifies different internationalization entry mode strategies. The graph gives a representative view of the level of control and extent of investment risk referable to each market entry strategy.

Figure 1: Entry-mode strategies



Source: Root, 1994 Entry strategies for international markets

1.4 Location choices

International business literature recognizes the location decision as crucial for international trading. The focus now is on the key factors that affect companies' perception of the attractiveness of various region as location for owned or not manufacturing facilities or as a location for other international agreements. Studies show that there are many drivers and differences across regions. The factors of attractiveness must be weighted according to the importance that each one takes in the perspective of the company strategy, aimed at empowering competitive advantage. For example, value creation through an adequate organizational structure has become an incredibly driving aspect of business decisions. More and more companies that wants to relocate do not follow the only path aimed at achieving benefits in terms of cost, but there is rather growing attention to efficiency of the supply chain. Operational problems caused for example by the long shipping time, are often detrimental to profitability, in the event that it is not possible to react adequately to the requests of the demand. To explain the commercial and productive logic pursued by MNE's it is useful to use the transaction cost theory (introduced in paragraph 1.2.). "It focuses primarily on the make-or-buy decision, trying to balance the market transactions costs and required specific asset investments with the potential risk of purchasing the item rather than produce it (Williamson, 1997) and, in relation to location decision, explain offshoring versus outsourcing

decision", as we will see later. The theory helps to identify these activities or components which the company should retain more control because fundamental for the value proposition and, on the other side, those lack of competencies that should be bought in the external market. The theory of transaction cost analysis conduct 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 (Calantone, 2007).

The theory suggests that individual firms tend to move away from higher cost to lower cost regions, but this is not the only reason as I anticipated. The attractiveness of a region or country also depends on the distance, understood as physical and cultural, with respect to the home country the firms belongs.

The eclectic theory of international production by Dunning proposed three determinants of international production by multinational enterprises: ownership advantages, location advantages, and internalization advantages. Specifically, in the context of manufacturing location decision, the location advantages partly represent the core of the explanation of the reason *why* taking the right location decision is fundamental. Dunning identifies these several advantages that push MNE's investing in foreign country:

- *Resource seeking advantage*: mainly concerns the availability and acquisition of specific resources (raw materials, infrastructure and labor) not reachable in the home country. Resource seeking allows also the

possibility of agreement with local partners, which could provide competencies and operations needed for the conclusion of the final product.

- *Marketing seeking advantage*: In this case, MNEs invest in a foreign country to exploit the possibilities granted by markets of greater dimensions. FDI's are directed to follow suppliers or customers that have built foreign production facilities, or to adapt goods to local needs or tastes, and to save the cost of serving a market from distance. In recent times, it is becoming important also having a physical presence on the market to discourage potential competitors from occupying that market. The markets to which we tend are generally presented high rate of development, which offer fertile ground for growth in the business.
- *Efficiency seeking advantage*: is considered to occur especially in two occasions: in the first case firms "take advantage of differences in the availability and costs of traditional factor endowments in different countries", while in the second one they "take advantage of the economies of scale and scope and of differences in consumer tastes and supply capabilities"(Dunning, 1993). This dispersion guarantees benefits and competitive advantages due to the different factorial endowment, the different policies as well as the new social structures of the market.
- *Strategic asset seeking advantage*: the purpose of the investment is that of acquiring and complement a new technological base rather than exploiting

the existing assets. This specific advantage is referred to knowledge related assets, and synergies related to maintaining a local presence. The main advantage that brings this strategy motivation is that firm invest abroad in order to gain access to knowledge or competences and assets (tangibles and intangibles) that are not inside the firm.

Location differences are dynamic and important in manufacturing location decisions. The drivers affecting a region's attractiveness in the decision to move manufacturing activities are not static too (Tate, et. Al., 2013). As fluctuation of the exchange rate could be harmful for foreign investments, the dynamicity of Government Trade policies increased significantly the prominence in relocation decision and became one important differentiator to opt to a host country rather than another one. Government Trade policies comprehend tax advantage, subsidies and countertrade requirements and increased the attractiveness of North America, South Asia, Central/Eastern Europe and Middle East. Thanks to focused incentive policies, Nord America increases the attractiveness as a location to move back the business, in the case of outsourced American companies, or locate manufacturing facilities, in the case of foreign companies. Trump's policies are addressed to convincing the audience that North America is a suitable region to conduct business even in the eyes of the whole world.

However most of the findings show that the cost still play a basic role in defining the host country where to locate the company's operations, but, embracing this way, often companies forget to consider the potential negative risk of supply chain interruption which directly converge into a loss of sales and the cost of recovery process. This helps to understand why the decision for the manufacturing location are moving away from the resource-seeking logic, from abandoning cost of labor advantage toward strategic asset seeking, giving more interest in knowledge proposition and value creation.

1.5 The offshoring phenomenon: definition and difference with outsourcing

Having described in detail the series of strategies for accessing foreign markets, now let's analyze how companies manage to penetrate the foreign market; it is now possible to continue with precise forms of internationalization called "offshoring strategy".

First, we define the term offshoring and after the main differences with outsourcing. Offshoring is the "relocation of business to foreign countries for taking advantage of a supply of skilled but relatively cheap labor". This definition has progressively loosened this meaning given the results to which offshoring led to. Recent academic literature defined offshoring as "the transnational relocation or dispersion of ... activities" (Doh et. Al., 2009), thus pushing the attention to the multitude of activities that could be offshored and the nature of being a coordination process of business functions across national borders (Lewin, 2006). "Offshoring" can be also classified as a sub-category of outsourcing. When speaking of "outsourcing", we generally refer to the externalization of activities, previously performed in the home country, to a third party. The third party in this context is usually an outsourcing vendor and it can be, however part of the outsourcing organization, such as a subsidiary for instance. What mainly differentiates offshoring from outsourcing is

the international dimension. Outsourcing can take place purely in a national context, while speaking of offshoring, the third party is always located in a foreign country. In order to distinguish the term offshore to others like "international outsource" or "global outsource", some writers apply the term "offshoring" only in a specific context, for example when referring to externalizing activities to a third party located in a low-cost country (Erber et.al, 2005). This statement explains the trend that has manifested itself since the 1960s until a few years after 2000, during which the delocalized choices made up to that point took place particularly in low-cost countries such as China, India or most of the other Asian country. Although the advantage in terms of cost remain a key driver for the choices of MNE's, with the growing pool of activities carried out and the different strategic priorities that each of them incorporates, low-cost countries are no longer the only place in which companies are willing to invest. Ireland and Singapore detain the highest per capita income levels in the world, so that are hardly defined low-cost countries, but survey showed that not for this reason are less attractive than other east-countries (Kearney, 2004).

Because of these findings, is preferred to define offshoring as:

“externalization of various tasks, activities or competences previously performed in-house, to third parties located abroad, *mostly* in low cost countries” (Fratocchi, 2000).

1.5.1 Dimensional sphere of offshoring: near-shoring Vs overseas-offshoring

In order to provide a more precise and extended definition of the meaning of offshoring, it is considered appropriate to describe the substantial difference between the concept of nearshoring and overseas, in relation to the reference country. These two delocalization models, although both belonging to the broader and more general category of offshoring operations and strategies, refer to two different modalities, which have geographic distance as their discriminating factor. Some authors differentiate between offshoring and what known as “near-shoring”. The difference between the two terms is the geographical distance between the outsourcing organization and the third party. If the third party is from a country close or in proximity to home country, the term “near-shoring” is applied. Mexico, for instance, is a nearshoring destination for US companies as is Poland for German and Italian companies. The drivers responsible to rise off- or nearshoring strategies are the same but they could have different weight among the sectors and industries, depend on the priorities of the business and on geographical area. Near-shoring makes it possible to locate a specific activity or process that is part of the value chain in a country close to the country of origin. The advantages are numerous, such as greater coordination between the parent company and foreign branches, better control over the delocalized activity (thanks to the optimization of communication),

and finally the reduction of transport times⁵ due to the lesser logistic efforts required. Nearshoring can be economically viable in certain cases, mostly due to savings in freight and duties. For instance, a US apparel company that moves production of basic jeans from either Bangladesh or China to Mexico can maintain or even slightly increase its margin (McKinsey analysis, 2016).

The overseas-offshoring refers instead to the relocation or outsourcing of certain operations, in countries located in more remote areas, in order to seek the greatest possible cost advantages, or to access particularly important skills or markets. For the parent company this solution makes more difficult the operations of control and coordination, however it allow better access to certain outlet markets. It is important to underline that the two solutions are not necessarily substitutes, but on the contrary, from the empirical evidence it emerges how often they are complementary. In fact, discretion depends on the types of objectives that the operational and management center intends to embrace, and on the type of activity to be relocated.

Moreover, 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;

⁵ US companies wait on average 30 days in order to receive goods from China by ship, only 2 days from Mexico.

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

Material offshoring has experienced a rapid expansion since it was easier to relocate production activities rather than the service, but recent findings illustrate that due the improvement in information and technological communication, even services are easier to trade and offshore.

1.5.2 Offshoring strategies (outsource offshoring, captive offshoring)

According to the methodology of the governance and to the list of the operations that are common to a relocation strategy, offshoring can be analyzed following other aspects. The choice and the extent of international engagement is perceived crucial by companies interested in facing new market and in reaching better objectives. Equally important, it is to understand and distinguish others offshoring's categories based on the ownership mode. The focus is addressed on firm's related factor (financial resources, firm's capability and level of task's specialization) and on the contractual/legal agreement, which can range from pure contract outsourcing, to joint ventures to a fully owned subsidiary. The first main offshoring strategy is called "offshore outsourcing". It can be commonly defined as the externalization of various tasks to outsourcing vendors located in a foreign country. An example is the decision of numerous American IT enterprise's decision, during the 90's, to outsource its software development, accounting center or business processes to India (Deloitte & Touch, 2003). It was a trend followed by many others which has increased the number of offshoring vendors, competing with increasing success on the world IT market. Today, activities have also been outsourced engineering with high value added such as product development and design in the automotive, aerospace, hi-tech telecom, utilities and construction/industrial

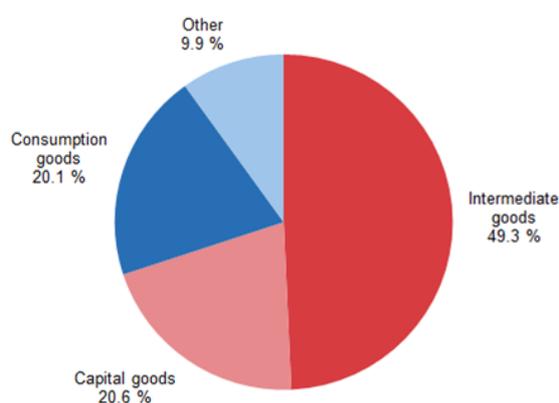
machinery sectors. The second offshoring strategy is named "captive offshoring". Here, the third party belongs to the inter-firm network of the outsourcing organization located in a foreign country. What fundamentally distinguishes captive offshoring from offshore outsourcing is the extent of control over the third party due the whole ownership. When firms outsource to an external vendor, transaction costs mainly occur from searching, negotiation and monitoring. Moreover, a third part, due the asymmetric information, may adapt opportunistic behavior from uncertain situation, making higher the transaction costs in comparison to the hierarchic control. In this scenario, although implementing captive offshoring requires a high initial investment, it can decrease the monitoring cost, exploiting competencies in the right way and earn competitive advantages. Embracing the "captive offshoring" strategy, a transfer of assets, semi-finished products, intangibles and production factors between companies of the same ownership is permitted, although located in different countries but with centralized management that aims at the global profitability of the business. The ownership advantages gained from the captive strategy helps to overcome the liability of foreignness, which is identifiable to disadvantage that foreign firms experience in host countries because of their non-native status (as anticipated in 1.3.2 paragraph). Ownership refers to the possession of a certain valuable, unique and hard-to-imitate resource that allows a company to have a competitive advantage compared to foreign rivals (Dunning, 2000). A notorious brand with great reputation, rare technological

capabilities or huge economy of scale could be good examples of competitive advantages that could be transferred abroad in order to deeply penetrate foreign market. Due the satisfaction of the chief executives, captive offshoring is widely used by companies all around the world and mainly in every sector, recording an annual growth of 13% (Chandok, 2013).

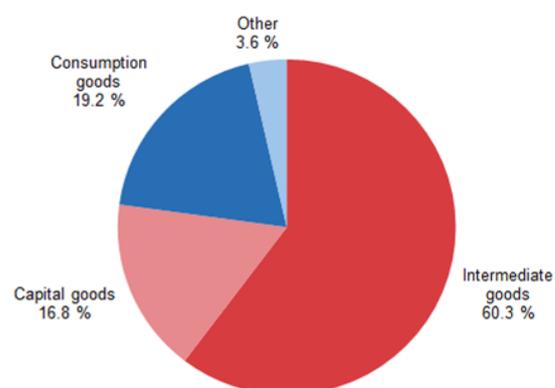
Figure 2: Extra-Eu trade in goods by broad economic category, EU-28, 2018

Extra-EU trade in goods by broad economic category, EU-28, 2018
(% of total)

Exports



Imports



Source: Eurostat

Captive offshoring's firms outsource part of their value chain to affiliated companies located abroad (intra-firm). They import components and export finished goods or semi-finished goods for further processing and trade. In consequence, is remarkable the attention on some findings showed the increasing trend in the intra-firm trade: in Europe, the intra-firm import is around the 40%percent of the total import, and in US, 60% of the total intra-firm come from

advanced countries. In Europe as US, the international value chains have a specific regional character: De Backer et al. (2013) illustrate how EU member states are strongly integrated into European value chains, in which Germany has played a central role. Marin (2011) showed that intra-firm trade (trade between parent firms in Western Europe and their affiliates in Eastern Europe) accounts for between 20 percent and 70 percent of total trade between these 2 regions. Although the trade dependency between European countries is stressed out by many, the figure 2 represent the share of European trade with the rest of the world among different typology of goods. Also here the import and export of intermediate is huge and frequent, and represent respectively the 49,3% and 60,3% of the total share. These findings helps to understand that the european intra-firm trade and relation is relevant both in the regional and extracontinental contest.

1.5.3 Role of core competencies and supply chain in the definition of the right offshoring strategy

Global value chains, international specialization at the level of tasks and the exploit of core competencies have led firms to adopt much more complex sets of internationalization strategies. These factors are crucial for executives in order to define which activity and where to outsource.

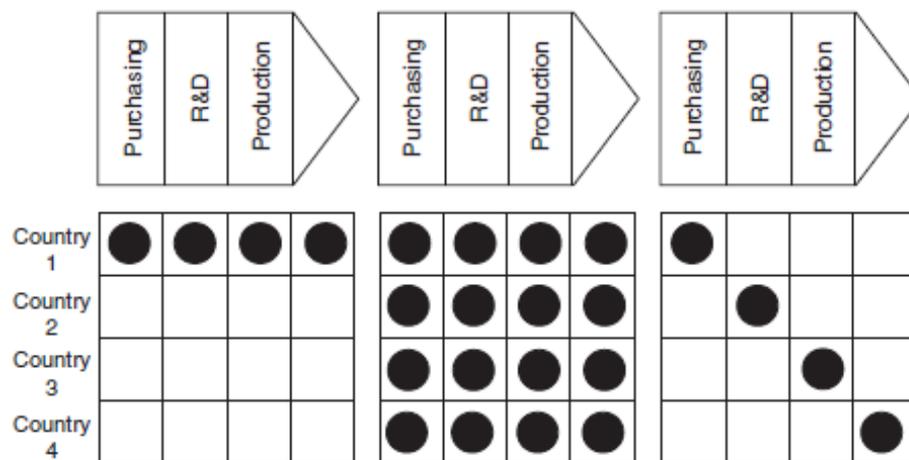
In the early 90's, Prahalad and Hamel developed the core competence concept, which incorporates the optimal utilization of company resources on a national as well as an international level. Enterprises often carry out only those activities themselves for which they have a designated competence and functionality in comparison to others. "Core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies" (Prahalad & Hamel, 1990), but with the boost in IT as well as the opening up of new target markets, "core competencies constitute the focus for strategy at the corporate level" (Gottfredson, Puryear, & Phillips, 2005). Due the networking through EDI systems (Electronic Data Interchange), the international integration and the global standardization of company activities, the core competencies receives a particular manager's attention. When firms decide to transfer operations to offshoring location is mainly because they want to better

utilize competences at their disposal in the new market in comparison to the old mature one. In most advanced economies, for instance, the mass production is actually inapplicable, but through the offshoring toward a low cost region, this competency can bring the achievement of a competitive advantage. Moreover, core and valuable competences depends on the level of standardization/specialization of the tasks and on the value creation that comes from these process phases. As a guideline, firms follow this rule: if tasks are standardized (core or not core), or tasks are in general not part of the core competencies to the company, they should be outsourced to an external supplier. It can offer an acceptable level of monitoring on the process made in the foreign country because the high degree of standardization that not require demanding information flows. On the other side, whether tasks are core for the creation of value and involve the company's core competences, it means that these activities are fundamental for the company to be competitive and profitable in the marketplace. From that, the company should improve its core competences investing and flowing resources on innovation, quality and knowledge. Because innovation belongs more in design and marketing rather than in manufacturing know-how, the economic history showed that it was relatively easy to detect firms that outsource production. In the more technology- and capital-intensive items made in producer-driven chains, such as phones and personal computers, technology and production expertise were core competencies that needed to be developed and deployed in-house, or in captive offshoring that helps

also to defend competitive and uniqueness practices owned by the firm. From the early 2000s, through control mechanisms such as standardization, the offshoring activity was also expanding to high added value and intangible services such as engineering, IT and R&D just to name a few. Offshoring involves not only repetitive activities or low added value, but it also carried out for specific activities requiring a high level of specialized work. The increasing relocation of these functions has been a consequence of the strong changes that have characterized the global economic context. This led to a very strong reduction of the so-called time to market and consequently the companies, in order to be competitive, had to respond to the need of putting products on the market more quickly (Clark, 1991). To achieve this, companies have had to revise and re-plan their offshoring strategies, in order to obtain competitive advantages and greater efficiency in the outsourced processes in each target country. Gottfredson, Puryear and Phillips (2005) argue that the choice that managers must make no longer concerns the possibility or not of following outsourcing policies, but the way in which to outsource every single activity in the value chain. In order to optimize the physical flow of semi-finished and virtual information, the entire supply chain will have to be organized in such a way as to be able to enjoy advantages in terms of cost, efficiency and flexibility, also allowing the appropriate timing between the phases involved. Offshoring firms disaggregate their value chains in many sub-activities and in micro division of labor across multiple locations by replacing them, or

considering the option of potentially externalizing specific processes and capabilities to third-party providers. Firms always have to be focused on building a global network and advanced skills in order to improve the firm's capabilities and drive innovation and changes. The core firms that orchestrate and coordinate complex value chains, such as Dell and Nike, gain in market power due to their unique expertise in managing these networks as well as their control of brand names and key technologies (Kaplinsky, 2000). The figure 3 explains how a company can organize its processes globally. The procurement phase of resources, design and production can be pursued in only one country or separately in different countries.

Figure 3: The international disaggregation of business processes



Source: Ringlstetter and Skrobarczyk (1994, p. 343)

At the same time, however, a company can also outsource the numbered phases of the business in each country, allowing the creation of an efficient synergy between the company and the economic actors of the host country, and more extended corporate collaboration that takes advantage from "ownership advantages".

1.6 Offshoring drivers

Offshoring is a strategy that was initially adopted by companies to reduce operating costs (Lewin et al., 2006): goods and services should be produced in countries where their realization is less expensive. Following Dunning's approach, offloading is therefore, primarily in order to pursue an efficiency / low cost seeking strategy. As noted above, however, offshoring has undergone, over the years, a process of evolution that has significantly changed its strategic objectives, consequently the drivers and motivations that drive companies to adopt a strategy of delocalization have also changed. Recent studies show that 66% of offshoring agreements are aimed at supporting corporate growth strategies, and as many as 32% of these initiatives involve R&D and product design and innovation. Cost reduction continues to be the main factor that motivates delocalization decisions. Cost minimization factors include not only differentials, but also interest rates, capital markets development and capital costs. However, a new trend is emerging and offshoring strategies are increasingly driven by factors such as the search for new opportunities for growth, competitive pressure and better access to highly qualified personnel (Lewin and Peeters, 2006).

There are empirical researches that cover the most relevant groups of motives for manufacturing offshoring activities, production (cost) and market factors, push and

pull motivations, proactive and reactive ones. Now will be illustrate the main drivers that lead company to pursue offshoring strategies:

- *Accessibility to low-cost production factors:* in the process of production delocalization, this variable constitutes the most appealing element and the propelling force of the strategy itself. This saving, by adopting this method, produces compensation that allows the company to invest in new qualified and quality resources, especially in the administrative, managerial and management control areas. Companies will opt for outsourcing or offshoring when outsourcing certain value chain phases and allowing them to reduce costs, which is where internalizing has more advantages than in-house production.
- *Gain flexibility:* Helps companies abate constraints due to production rigidity and in order to react to the increasing demand for more customized features of the product. Increasing flexibility through the manufacturing of the specific tasks needed to respond to the client's desire, allows producer to concentrate more effort on the activities that are common to its core competences so to be more efficient and competitive (Diaz-Mora, 2005).
- *Access to low-cost qualified personnel:* The technological clusters of Bangalore, Bombay and Delhi in India (software), Dublin in Ireland (IT), Tel Aviv in Israel (software and It) and Taiwan (microelectronics), are only

some of the examples of centers where there is access to highly competent human resources (Torrise, 2002).

- *New market outlets and distribution support:* positioning the production phase in developing countries makes it easier to gain access to those markets. (OECD, 2013) Being more in step with the growth in demand, companies are able to reduce lead times, be more competitive and reactive to market changes.
- *Proximity to customers and support of services:* Allows firm to provide even the external market a qualified product and a standardized service. This benefit is addressed on the redaction of transportation cost and time of shipping.
- *Extension of the product demand, on national and international scale:* Locating process facilities abroad is a way to expand the capacity that in the home country could be not sufficient to cover the emerging demand. The delocalization in its accomplishment can act as a factor of expansion of the catchment area of a product. It is an expansion that can take place both horizontally (in relation to the geographical extension of the offer), and vertically (benefiting from lower production costs, making the product accessible to other sections of the population).
- *Access to technology and innovation:* Delocalization can lead to better satisfaction of the innovative needs of a company, as it expands knowledge

through new technologies, skills and competences that do not exist or have not been fully discovered in the country of origin. It also allows the standardization of skills and knowledge, fundamental for communication and international integration. Players must remain constantly updated in order to respond to the surrounding environment and remain competitive.

- *Access to resources and materials (resource-seeking):* "Sourcing" is one of the essential aspects of corporate strategy. In search of greater competitiveness, companies can choose to transfer production phases close to their input sources.
- *Tax incentives:* the attractiveness of a country also depends on the tax burden that it imposes on the sources of income deriving from the business activity. It often happens that some host countries define their own tax laws in order to allow companies, which decide to place their own plants, to be exempt from taxation.
- *Regulation benefits:* The lack of adequate regulations in the foreign country in terms of labor welfare, product quality standards and environmental regulations, stimulates the offshoring companies to target countries where legislation is not yet present or not so severe in the areas just described.

The advantages on the cost of labor and access to qualified resources are very important criteria for the choice of location, thanks to the possession of these requirements, countries like India and China have achieved much success in

attracting foreign direct investments. Different drivers that are at the base of offshoring choices, contribute to ensuring that there are different consequences on company performance. More specifically, drivers related to the search for cost advantages will affect operating performance: productivity, efficiency and quality. While the search for knowledge and skills will have a stronger impact on strategic performance: innovation, growth and competitiveness (Manning et al., 2009).

1.7 The offshoring's effects on welfare, employment and productivity

Offshoring entails the organizational and technological ability to relocate specific tasks and coordinate a geographically dispersed network of business activities. In the manufacturing sector, offshoring is recognized as a booster of productivity gains, but causing a steep employment decline. Hence, offshoring is typically assumed as a welfare-enhancer (Kohler, 2009) in terms of the productivity growth to which it leads. In the widely cited article "*The McKinsey Quarterly*", Agrawal and Farrell make an analysis on positive effects and the downturn that a relocation strategy brings. Firstly, offshoring companies are fostered by the cost reduction of production inputs, which generate resources to be invested in productivity-enhancing production process mainly in-house core business. The company's savings, as long discussed, mainly come from wage, constituted by far the greatest source of value creation for advanced economy. Reducing wages, by itself, however, does not increase national income; it simply transfers income from workers to shareholders, creating wealth for a fortunate few. A second source of well-being creation in the A&F analysis arrive from an increased demand of goods coming from developing countries where offshoring raises incomes (Farrel, 2005). This is due to the fact workers in offshoring country, trough the exploitation of new technologies and capabilities are now able to fulfill more valuable tasks. The third

source of welfare arises from opportunities to train labor and invest capital to generate opportunities in higher-value-added occupations such as research and design. Offshoring actually generates complementary jobs to support the global operations of multinational corporations, in fields such as general management, logistics, R&D and international IT. However, the net employment level is negative in most of the countries that embrace the road of offshoring: the US outsourcing from 2000 to 2010, despite the gain of some 200 thousand new jobs, allowed a huge decrease by 700 thousand only in computers and electronics, and textiles and clothing sector (Hackett, 2013). Nonetheless, the main downside of offshoring is its redistributive effect in lowering wages and employment of certain categories of workers in the home country (essentially low-skilled workers) (Crinò, 2007). Studies, as the one conducted by Kletzer (2001), concluded that "the earnings losses following job dislocation are large and persist over time" and only 63.4% of workers displaced from 1979–99 were reemployed, with an average weekly earnings loss of about 13%. Conventional trade theory, of course, predicts that free trade will eventually lead to convergence in wages, and, according to Gary Burtless at the Brookings Institute, "US "white-collar" workers are being put in direct competition with similarly skilled workers around the world". High attention is addressed also to middle class and high-income workers: the new offshoring does not affect any sector in particular; rather, it affects specific value chain tasks. It is leading to a micro-division of labor in which workers can be geographically

separated from the production process (Carnoy and Castells, 2001). On this occasion, it can be counted American scriptwriters "outsourced" to write a film for the Indian market in Indian company performing animation for US studios (Friedman, 2004). In this way, the realization of global labor markets for specific skill groups reduces the bargaining power of all workers in relation to their employers and create the condition to augment jobs "export". Offshoring also shifts the balance of market power among firms: while a select group of sophisticated first-tier suppliers might benefit from their relationship with big firms, many companies, particularly in developing countries, are likely to suffer a loss of market power (Humphrey, 2000).

Overall, the recent wave of offshore sourcing generated surely a rapid income growth in the target countries, at least for some sectors of the population. It is usual, however, that multinationals have been able to exploit more advantageous labor regulation standards compared to those in the motherland (maximum weekly working hours, minimum wage, and accident coverage), obtaining benefits that would have been unattainable even with the same wage bill. On the other side, material offshoring increases the fear perceived by home country workers to lose the job, worsens wage inequality between skilled and unskilled workers and lead to the rise of the elasticity of labor demand that makes the employment more volatile.

CHAPTER 2: "Back to the future":

Reshoring phenomenon

Introduction

Offshoring strategies have been one of the most widely used ways to create and maintain positions of sustainable competitive advantage at the international level (Ferdows, 1997). These choices have led to the development of international configurations of certain company activities, initially especially those of production (Frattocchi et al., 2014). The economic benefits of offshoring have been huge and widespread. For workers in low-cost countries it has meant jobs, new expertise and rapidly rising standards of living. Rich-world workers have been able to leave the drudgework to someone else, creating new jobs at the expense to standardized ones. For companies, lower labor costs have brought higher profits and western consumers have enjoyed access to larger scale goods at far lower prices than if production had stayed at home. Most of the literature has interested on the study of the advantages of this phenomenon, but since the 1990s a group of intellectuals has contrasted, focusing on the analysis of risks and critical issues related to these organizational practices (Frattocchi et al., 2014).

2.1 De-internationalization of business activities: a company's failure or a new international and rational strategy?

The competitive scenario, especially the international one, is always evolving and the conditions that motivated the offshoring strategies have changed; some of the drivers that once led to investing abroad are the same ones that for some years have been pushing companies to reconsider their structure and organization to embrace trends aimed at the "return" of business activity to the home country. The dangers of loss of control of relevant information, the lack of adequate protection of intellectual property (Smith et al., 1996), the logistic costs and the difficulties in ensuring certain qualitative (and environmentally sustainable) standards are just some of the factors that have pushed companies to review their strategies. According to McKinsey (The Economist, 2013), most companies have not paid enough attention to the selection of production and supply chain organization, but have simply embraced a widespread "migratory enthusiasm" based on the pursuit of rivals, that moved from one low-cost country to another. Firms are now discovering all the advantages of distance.

More and more companies that aim at product differentiation and excellence in quality have partially abandoned, or at all, price-based forms of competition, trying

to orientate their potential on drivers as innovation and customer proximity. As can be understood, the offshoring applied so far has been allowed by dynamic strategies pursued by the companies aimed at creating value through the interconnection and coordination of activities positioned in different countries in the world. The political and economic forces with their changes have eroded some advantages, not making offshoring a unidirectional phenomenon any more, but a form of internationalization in need of a rational strategy for every phase of the business that compares both developed countries and developing. With the aim of obtaining various types of benefits such as increased profitability, market-share and quality, companies have expressed increasing attention to the internationalization dynamics based on the transfer of "back" business operations to their own country or region. GE, for example, 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 (The economist, 2013). This new phenomenon, however, do not rule out the propensity to offshore. In support of this we can present the choice of Lenovo, a Chinese company, to open its own factory in America, with the aim of being closer to its end customers and faster in responding to American needs. Some data underline the 13% increase in reshoring practices from 2010 to 2014 at the expense of offshoring, which records a 3% decrease, although maintaining a higher absolute frequency. Statistics help to relate the two phenomena that might appear to be opposed if the direction of investment flows is taken into account, but

which instead both follow a rational economic and strategic logic that allows the cohesion of the two phenomena. Reshoring could be seen as an extension of the earlier analysis of offshoring due the changes in the political and economic contest. This latter aspect puts in evidence that offshoring and reshoring should not be considered as contradictory phenomenon, rather, they should be seen as reciprocals. Whether 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; less generally it has been argued that reshoring decisions do not necessarily entail the shot down of plants abroad and/or the interruption of relationships with foreign suppliers. For illustration, Caterpillar opened a new hydraulic excavator in Texas to relocate jobs 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 (Forbes, 2010). Given the reversing tendency of offshoring shown in the last decades, reshoring cannot be defined as a final decision but rather a phase of the firm's long-term internationalization strategy of production activities. Offshoring such as re-shoring can be considered as different steps of a much wider localization strategy (Gray, 2013). This view is supported by the theory of "non-linear internationalization" (Vissak, 2010), which considers the internationalization of companies as a process "characterized by substantial growth and decrease in international activity" caused by changes in the local environment, political instability and problems linked to the supply chain, which consequently

force companies to reduce their international commitment. The decision to opt for reshoring should not be seen as the result of a wrong foreign investment, but rather a business adaptation to the changed conditions that once drove companies to enter the internationalization process. The decision is based on the evaluation of pull factors (provided by the home country) and push factors (internal to the host country), as the offshoring decision process.

2.2 Reshoring definition and literature's classifications

The phenomenon of returning to the country of origin, of previously delocalized productive activities abroad, over the years has been described using different terminologies; it is therefore important to understand what these different terms and definitions are in order to have a more in-depth view of this action to revise the internationalization strategy. Generally speaking, the term re-shoring means the decisions in which the productive activity is “brought home”. 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 (Ellram, Gray, 2013). In the past, companies' internationalization strategies focused on transferring business operations back to their countries had many labels referred to reversed way of offshoring, such as:

- *Return location*: Understood as both the return to the country of origin of certain activities, and the total or partial closure of the delocalized activity (Jungnickel, 1990)
- *In-shoring*: Skipper (2006), uses the term to identify the practice opposed to relocation; others use it referring both to the return to national plants, to

functions previously delocalized, and to the construction in the country of origin of newly established activities (Dholakia et al, 2012);

- *Back-shoring*: 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 (Kinkel, 2009).
- *Foreign disinvestment*: It occurs when there is a decrease in the percentage of ownership in FDI. Reduction is not related to a single operation, but to the offshoring subsidiary as a whole.

Figure 4: Reshoring options

Reshoring Options

		<i>To: Onshore</i>	
		In-House	Outsourced
<i>From: Offshore</i>	In-House	In-House Reshoring	Reshoring for Outsourcing
	Outsourced	Reshoring for Insourcing	Outsourced Reshoring

Source: "The reshoring phenomenon: what supply chain academics ought to know and should do", Gray, 2013, p.27

Reshoring, as such, is fundamentally concerned with where manufacturing activities are to be performed, independently from who is performing the

manufacturing activities in question — a location decision only as opposed to a decision regarding location and ownership. According to the governance mode, that define the ownership (in-sourcing vs outsourcing), and the location decision (home vs host country), the literature identifies the following four possible manifestations of reshoring (Gray,2013) (Figure4):

- a) *outsourced reshoring*, the activities previously entrusted to foreign suppliers are moved to national suppliers;
- b) *in-house reshoring*, the activities previously carried out in foreign branches, are then carried out by national structures that are always owned;
- c) *reshoring for outsourcing*, the production previously owned by foreign owned plants is entrusted to national suppliers;
- d) *reshoring for insourcing*, the production activities of foreign suppliers are carried out by units owned by the company itself.

Even Kinkel (2014), tried to analyze the methods of reshoring, dividing the relocation operations only in two categories: outsource back-shoring, in which the production was entrusted to subcontractors; captive back-shoring, in which foreign establishments were owned by the company itself.

Additional classifications can be listed in relation to the strategies implemented to achieve benefits from reshoring (Bellego, 2014):

- *Tactical reshoring*: the strategy is addressed by searching the best country to locate high value-added manufacturing activities, pushed by resources or capability seeking.
- *Development reshoring*: is made to develop and upgrade product features and services.
- *Home reshoring*: forced by the failure results of their previous offshoring experienced and by the changes in the environment of the host country.

At this point is possible to point out that reshoring concerns the relocation not only of process performed internally but also of the ones outsourced to host country suppliers. In this way, it gives the possibility to perform activities in the domestic facility or to entrust them to a domestic supplier. Fratocchi conceptualize the above-mentioned views into a unified and operative definition of the reshoring phenomenon as "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".

2.3 Uncertainty and priorities of the dynamic global market

There are numerous variables that have led companies to reconsider their internationalization strategy and organizational structure, more and more companies are undertaking reshoring strategies. The conditions are changeable, and the drivers that motivated the offshoring initiatives are also the same ones that now lead to the return to the home country of the previously delocalized activities. Scholars Dachs and Kinkel (2013) agree in affirming that reshoring can be caused by a deterioration over time of the conditions that existed when the offshoring decision was initially taken (Frattocchi, 2014). In the offshoring strategy there is a greater exposure to the impossibility of foreseeing the real conditions of the host country often caused by information asymmetries, but not only. The level of accuracy in forecasting performance can lead to higher / lower expected costs, which often result in an inability to capitalize the benefits expected from outsourcing, to the point of reconsidering outsourcing and offshoring decisions. Studies and analyses on the phenomenon of returning to the country of origin of the previously delocalized activities are still available in limited quantities, especially concentrated on manufacturing reshoring, often American. However, the attention is increasingly focused on the so-called "hidden" costs that can be found in poorly

coordinated supply chain management and transaction costs in both monetary and economic terms (Ellram, 2013). The international manufacturing location decisions deal, now more than ever, with global competitive dynamics; implicate that location differences are subject to continuous change. These shifts in the global economy and the current economic crisis has given rise to a fall in the demand and a “savage” competition. In the footwear and apparel/clothing industries, the contraction of sales has recorded a decrease in the ordered quantity, leading to lot of problems in the coordination between the procurement of resources and the use of them, due also to the scarce flexibility of the outsourcing supplier, most of the time Chinese. The higher environmental uncertainty increases the degree of unpredictability in the market-place decision, forcing companies to adapt their strategies to a short-term logic. Such uncertainty ranges from institutional and regulatory such as subsidies and policy changes, labor market regulations, tax structures, raw materials shortage and exchange rate fluctuations. Firms are now more focused on the quality aspect of product, on the linear coordination among processes and flexibility of production. These factors could influence firm's location decision more than the previous benefits coming from the reduction of total cost during the offshoring phase. As we will see in the next paragraph, reshoring is linked to other reason and drivers, which have little to do with cost, but more concerning on competences, innovations, logistics and strategic assets.

2.4 Reshoring drivers

As announced in the previous paragraphs, since reshoring is a phenomenon that has arisen in the last twenty years, analyzes and literature on the subject are limited. "Bring back home" activities and jobs is a strategy pattern typical of American companies, but in the last years, these dynamics are wide spread also to EU firms. Although studies illustrate different approaches among the researchers that often use various drivers' classification, different sample size and geographical focus, the results point out mostly the same main motivation among industries and sectors. Following the research made by Zhai et. Al., they classified factors that drives reshoring in 5 groups: *costs*, *product*, *competences*, *operations* and *institution*. The *cost* group includes factors like wages, shipping cost and total cost (included "hidden" cost as phone calls and communication challenges). Quality and brand are two key characteristics of *product*: many companies outsourced to China for low cost at expense of high quality, now the attention is addressed more on the image and exclusivity. The *competence* group concerned the level of technical knowledge and innovation used during the value creation: automation and skilled labor are two main features. The *operation* group identified the factors that affect the overall supply chain like lead-time, control, inventory levels and reaction to demand. This group begins to pull considerably the final choice of company localization decision because it allows improvements in productivity, relations, and cost management.

The last but not the list of this group is based on *institutional* factors: incentives, tax exemption and the IPR protection are just to mention few. Similarly, in another research (Ellram, Tate, 2013) that investigate the variation on the weight of a driver among specific regions, eight dimensions (groups) shows 29 factors that compose the classification. The dimensions were input/product, cost, labor, logistics, supply chain interruption risk, strategic risk, country risk, and government trade policies. Even if the existing studies presented different approaches on the reshoring practice, the results on several survey and researches lead to similar conclusion. Computing a cross-analysis among the works of experts is possible to rank five main drivers that nowadays influenced the firms' "moving back" strategy:

- *Decreasing in cost differential between home and host country* (Kinkel, 2012; Ellram et al. 2013; Tate et al. 2014; Ancarani et al. 2015). Finding the appropriate skilled labor, the rising of the wage and labor cost stability, the increasing expenses of fuel contributing to a jump in transportation cost, and cost instability are all contributing to factor market rivalry and causing organizations to reconsider their manufacturing location decisions. As already stressed out, the crucial change that has taken place over the past decade is that wages in low-cost countries have soared. According to the International Labor Organization, real wages in Asia between 2000 and 2008 rose by 7.1-7.8% a year (when the pay in advance economies rose not more than 0,9%), leading to an erosion on the labor cost advantage over companies that made the offshoring

process in the past (The Economist, 2013). The causes of wages growth can be found in the general increase in the well-being of Asian countries, but above all from the emergence of laws, rights and regulations protecting workers who, up to that point were obliged to work under precarious conditions, underpaid and without limits of hours. After several strikes, new labor law introduced in China during 2008 brought in more protection for workers including the right to a permanent contract after a year of employment. In this regard, according to some survey (Zhai et al. 2015; Ancarani, 2015), costs dimension is the *group* of drivers that firstly affect reshoring decisions.

- *Better quality in-home country* (Kinkel, 2012; Ancarani et al. 2014). According to researchers, quality issues are seen as the most spread *single* driver that forced firms to relocate manufacturing back home. Is not easy for companies to transfer abroad the same quality management procedures that are implemented at home (Kinkel, 2012). The fact is that some manufacturing techniques and requirements might be new to foreign contract manufacturers, leading to an increase in the cost of training and adjustments that cause higher price of the outsourced good or to a final dissatisfaction in the purchasing phase. In order to control the quality level, firms might transfer technical and management staff to the foreign country, but since some communicational issues could rise, they should be inclined to relocate some high skilled activities in-house, preferably near to the R&D department. When the business units are not located close to

the R&D center could be difficult to synchronize various function in the supply chain. Moreover, recent contribution underlines the relevance of customers' perception with respect to "made-in "quality. A higher propensity to buy home country "made-in" product, due the perception of higher quality may motivate companies to relocate production activities in there.

- *Shorter lead-time* (Tate et al, 2014): The lead-time between orders and receipt of goods is typically three months and even longer if referred to far Asia. On the other side, shorter distance and lead-time significantly improve inventory turns and make the condition to a drop in the overall risk of supply chain disruption. Manufacturers that decide to return gain better control over production process, supply chain, and quality. They should however be flunked by an accurate management of the logistics in order to exploit the competitive advantage. Furthermore, when companies choose to approach lean manufacturing techniques, they achieve necessary cost improvements, optimize productivity, and develop corporate community relations. Quick reaction to the demand is essential to market the product. Among apparel companies, where the fast “time to market” lead to a fashion cycle of no more than six-weeks, shorter lead times will have high commercial value for on trend items and will give the possibility to test and scale more styles (McKinsey Group, 2018). For instance, by moving the business activities from China to the US, companies

are able to rapidly respond to needs of their customers, and improve customer service because of closer proximity to clients.

- *Changing of purchasing pattern and quickly response to customer demand* (Martinez-Mora et al, 2014): The world-purchasing pattern is considerably changed in last two decades. Consumers and companies have adapted their behavior to new stimuli offered by new technologies and communication tools. E-commerce, for example, if on the one hand it enables customers to buy products with a click and in very short delivery times, on the other hand, the offer requires an interconnection and coordination between all levels of the supply chain, and of an accurate and constant analysis of the demand in support of this system active 24h/7d. In this way, however, the product cycle tends to shorten drastically, giving space to continuous new models; the needs of consumers are often not inherent in the nature of the product, but are based above all on pre and post purchase characteristics and motivations (assistance, guarantee, shipping, payment method, etc.). The same purchases are implemented in non-physical stores as from smartphones. All this, together with the increase in demand for goods, the opening up to new markets (previously seen only as the location of assembly centers, now targeting products), and a widespread and wild competition, have defined some of the causes that have convinced managers to review previous location choices. Quickly response to local market demand is an important motivation for reshoring. The reshored

companies should flunk the new trend of intelligent and customized manufacturing, by developing the ability to make design changes in response to market demand trends and more quickly send the products to consumers. These characteristics can be a competitive advantage that in some cases can only be pursued in the motherland or through near-shoring. This near-shoring avoids some of the transport cost and cultural difficulties of sending production to places a long way from home, as many Anglo-Saxon companies have done. The logistic factor is therefore relevant above all in contexts in which time to market represents the fundamental competitive lever. Zara, leader in the “fast fashion” segment, demonstrates this importance with the recent decision to "shorten" its supply chain by turning to the Mediterranean basin and to Portugal part of the purchases first made in Asian countries (Frattocchi, 2014). In this logic, companies that had previously outsourced production phases abroad for a gain in productivity and efficiency (efficiency-seeking), if they now decide to remain in the host country to pursue market-seeking logic, they will have to increase, in other ways, the efficiency with the intention of compensating for the growth in labor costs (Dunning, 1993).

- *Automation and skilled workers in home country* (Kinkel, 2012; Tate et al, 2014): Recent literature indicates increase in innovation ability and capability as a crucial driver in reshoring strategy. Innovation relates to both product and the process-related activities. The increase in the degree of automation and in

the number of industrial robots took off in the 1990's, increasing significantly over the last decades (IFR, 2016). Now robots, 3D printers, smart communication systems and devices based on machine learning have become better off at performing the low-labor intensive tasks. Embracing the way of robotics and automated processes provides an incentive for firms to reshore parts of their production from low cost country, due firstly gaining in productivity and reliable quality standards in-house. Manufacturers can use technology to support manufacturing processes, quality control activities, administrative functions, and forecasting activities such as planning resources, requirements, production rates, and lead times (Schaeffer, 2014). Another advantage of automation is concerning the data this technology generates: it provide valuable information on production start and finishes, line slowdown and quality issues, helping firms to respond quickly to problems, adjust the overall manufacturing process and monitoring the distribution; it can helps to reduce waste and increase the sustainability of the firm's processes, that are two growing concerns among the international authorities and clients (IEDC, 2015). In this prospective, firms are willing to locate plants in such a place where the level of automation is significant and where there are skilled workers able to easily deal with this kind of technology. Find the right employee for a core-business activity is one of the crucial issues for companies: the average high turnover rate in outsourcing company (typical of Indian IT companies), the

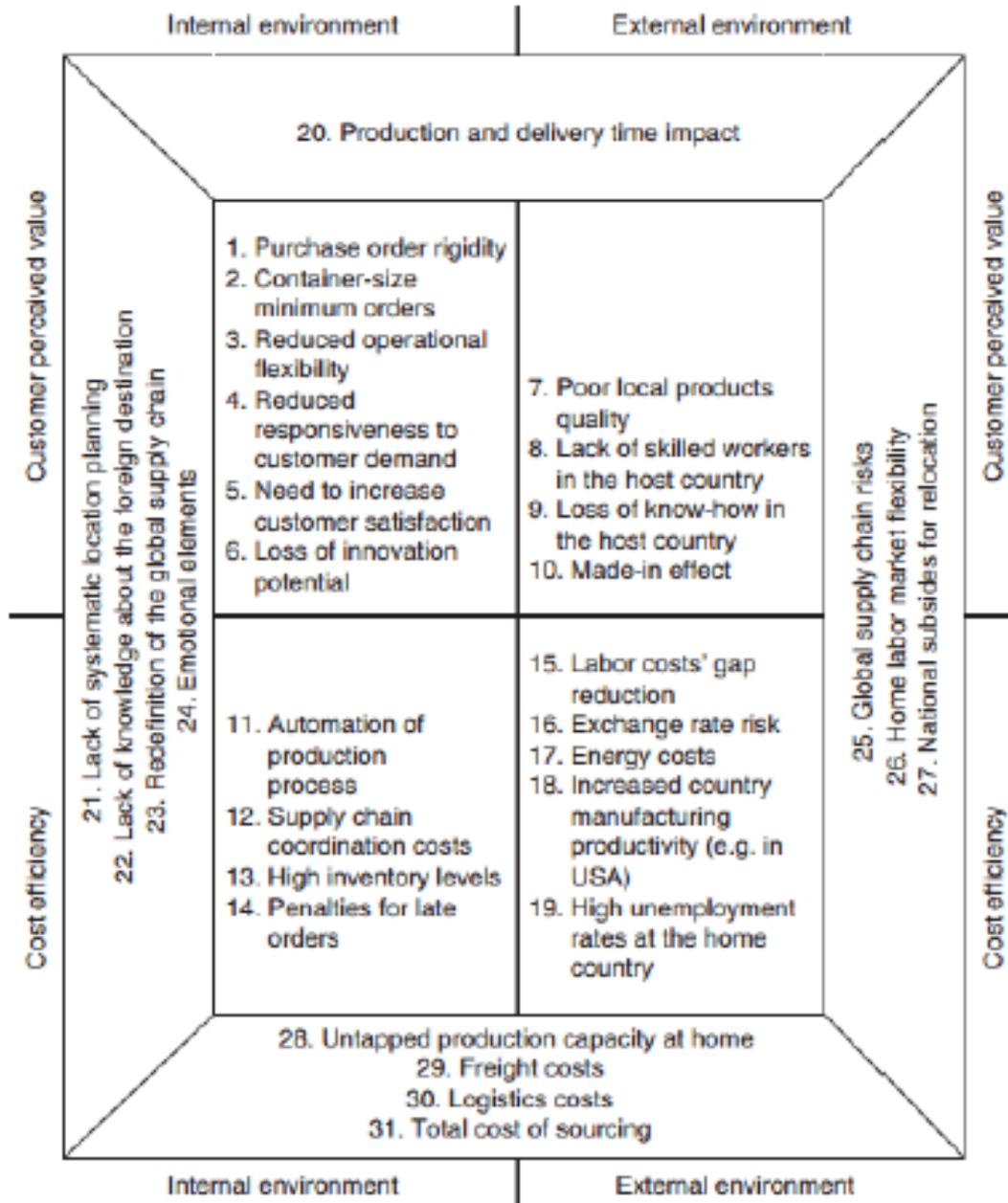
uncertainty of foreign' employment regulation, the relative increase in the wages and the concerns on "new" core-tasks, makes the home labor force more appealing. Moreover, the bust in automation lead to a higher demand for home skilled workers in order to embrace efficiently the new technologies, lowering the communicational and training issues as well increasing the IP protection.

Micelli et al. (2015) have further divided drivers into four different categories: economic, operational, strategic and institutional. Within the drivers, economic, we find for example the increase in the cost of labor in the developing countries and the uncertainty of the purchase prices. The operational factors, instead, consist in the lack of flexibility due, for example, to a supply chain that is very extensive at international level and to the long transport times. Among the strategic drivers, there is instead the positive effect of the made-in on the corporate image and reputation, but also the proximity to the consumer. Government incentives, country risk and environmental and worker protection problems are factors regarding the institutional category. Especially on this latter category, the governmental incentives rank the second-last motivation in both EU and US (Ancarani, 2015). The inefficiency of governmental incentives is when, although the tax abatement or exemption is in place, the overall tax rate is still not lower than previous offshoring location. Another issue is that investment incentives are usually temporary, while the corporate strategy come from the adjustment of long-term company strategy. However, in contrast to the findings, the "Trump factor" that are experiencing the

United States, lead to an increasing of the reshoring's rate. Indeed, the annual data report of Reshoring Initiative show an increase in reshoring growth trend over 10% in 2016, with 77000 jobs returned to the US.

To sum up all the motivation and the cause of reshoring phenomenon, Fratocchi, in one of his papers on the subject, presents them based on the objective that the relocation of production activities aims to achieve and according to the level of analysis. The goal is broken down into the aim of keeping the value perceived by the consumer high (understood as the quality standard or the level of innovation required) or in pursuing cost efficiency. At the analysis level, however, the reasons linked to internal environmental factors within the company are separated from those connected to external environmental agents, that is, dependent on the country of origin or abroad in which the production was located. Based on these four drivers, the matrix shown below was built (figure 5)

Figure 5: Horizontal and vertical figures of reshoring's drivers



Source: Fratocchi, 2016

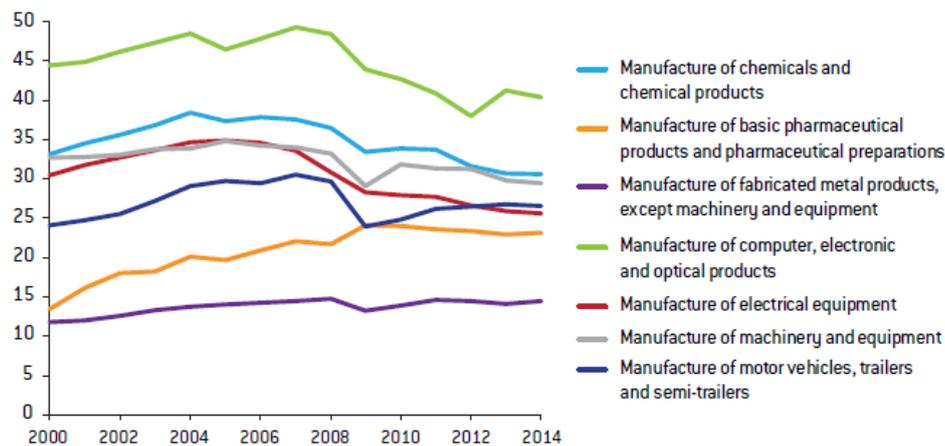
2.5 Sectors involved in the reshoring strategy

Reshoring phenomenon occurred in almost all industries. With the exemption for tobacco and printing and publishing that document only one case respectively, all the others sectors incurred in a review of their previous location strategy (Zahi et al, 2016). Overall, reshoring affects the previous offshored manufacturing labor-intensive activities that now should be performed more likely in house or in a "nearshore" destination. Sectors more inclined to be affected by the shifting in production location are those that present heavy machinery or product that are expensive to transport to the final consumer, as well as, goods subject to frequent and unexpected changes in consumer demand. The relative importance of individual criteria to decide where to produce varies by industry. Factors like scalability, time to market and the speed boost capacity, tend to be more important in dynamic industries requiring short product life cycles and high levels of demand variability (e.g. consumer electronics). With the aim of identifying the sectors most involved in reshoring strategies and extrapolating useful information, the analysts approached with two different methodologies: some analyzed the phenomenon starting from a sample of companies and tested the correlation between reshoring (Ancarani et al , 2015; Zahi et al, 2016) and their respective sectors of reference (Ellram et al, 2013); others focused on imports and relative consumption of semi-finished and intermediate goods in a given sector. The percentage of intermediate

goods utilize in the home country compared to the total of semi-finished products imported in a given sector is economically and empirically considered as a good estimator to explain the repatriation or otherwise of activities in that business area. The Uni-CLUB MoRe "Back-reshoring" research group carried out following the first approach and represent the most extensive data collection and analysis on an international scale. It covers 728 companies and shows in the first place with 97 decisions the computer manufacturing sector, electronic and optical products, the second the manufacture of electrical equipment with 78 and the third the manufacture of clothing items with 67 cases. At European level, the ranking of the sectors most prone to reshoring is presented by the European Reshoring Monitor, which, in the report between 2014 and 2018, sets on the podium manufacture of wearing apparel with 29 cases, manufacture of food product with 24 and manufacture of machinery equipment that counts 20 cases. Reshoring manufacturing of computer, electronic and optical product in Europe do not have at all the same as influence as in US, but recorded a huge increase from 2016 to 2018 with 17 decisions. Instead, from what concerned American firms that decide to come back from China, a research has been made using a simple size of 139 companies in a period that goes from 2009 and 2014. The result pointed out that the computer and electronic industry represent the 19% among the overall decisions to reshore. 19 and 17 reshoring companies are respectively in Fabricated Metal Products and Measuring, Analyzing, Controlling Instruments, which are ranked in

second and third position. The second approach instead, extrapolates sensitive data through the study of inter- and intra-firm trade in a specific sector. A company that has outsourced parts of its value chain are used

Figure 6: Imports of intermediate goods by selected sectors, % of total consumption by that sector of intermediate goods, 2000-14



Source: Bruegel.

to import components and export finished good or semi-finished product for a future processing and trade (De Backer et al, 2013). In order to measuring the importance of the phenomenon, researchers focus their studies on intermediate goods and components and the share of imported components in export. Theoretically speaking, a drop in the percentage of total usage by a sector of imported intermediate goods should reflect the increase of reshoring decision in this specific industry. This is due the fact that, now, part of foreign intermediate goods is produced in-house. The indirect relation between the percentage of imported

intermediate goods and the numbers of reshoring cases is visible in the overall downward trend from 2006 in EU sectors (Figure 6). Among EU industries, the sector that recorded the higher decrease in the number of imported goods is associated to manufacturing of chemicals product, manufacture of computer electronic and optical products, and manufacturing of electrical equipment. A result that is more or less in line with the findings from the first approach.

2.6 Reshoring in services

Even if business services begin to be more internationally fragmented later in comparison to production phases, companies may either start to reshore this kind of activities given several factors. Firms over offshoring/outsourcing manufacturing, they started to locate abroad IT and back office work to other companies or another owned facility. From the end of the '90 software programming, call center and data-center management were the first tasks moved, followed by more demanding and complex ones. Changes in the economic environment have had as much influence on production as on services. As a consequence, labor-cost arbitrage was rapidly sorting and firms are feeling all the drawbacks of distance. General Electric is reviewing the strategy in some crucial areas of its business. Setting up in 1997 in Gurgaon, India, one of the very first "captive offshore" service center, GE had mastered the offshoring of service in the 1990s. Until 2012 around half of its IT work was being done outsource, but more recently GE decided to add hundreds of IT engineers at a new centre in Michigan. The company found that it was increasing the lack on technical expertise and was not quick enough to changing in technology needs (The Economist, 2013). Whether offshore manufacturing is typical a Chinese phenomenon, the offshoring of service tasks could be linked to Indian contest. Database show that in 2008 India vaunted

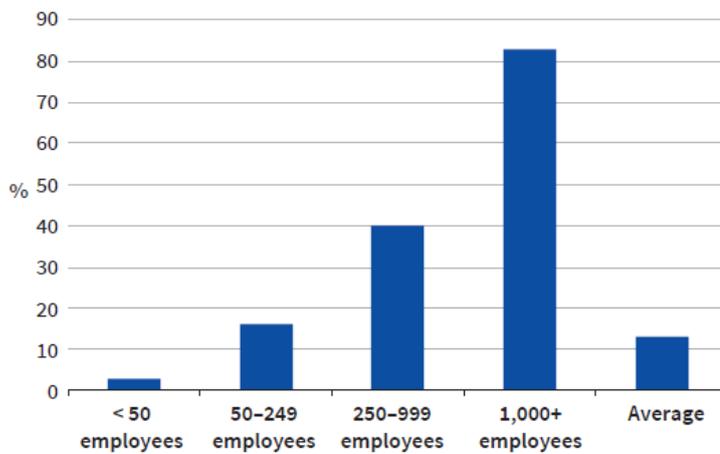
65% of all offshored IT work. Today, according to some specialists, companies discover hidden costs that negatively affect the overall business connection functionality and efficiency, and caused the abandon of 70% of them. In Europe as US, many executives in financial service concerned about the quality of the phone calls, have brought back home call-center from Albania and Romania to be more effective for client's retention. Some activities that in the past used to be considered peripheral to a company revenue, such as data management, are now seen as essential for profitability. Furthermore, high value adding service job in R&D, IT and engineering require as well high level of specialization, so they are less likely to be entrusted to a third-party supplier located abroad.

2.7 Reshoring in EU

The phenomenon of reshoring, as has been shown, is a label referable for the most part to the American context. US firms were the first to outsource overseas processes therefore also the first to perceive the erosion of typical benefits of offshoring. Although there are a limited number of cases of repatriation of business activities among European companies, it is possible to define characteristics, drivers and dynamics that only partially correspond to those widespread in the American context. First of all, European reshoring is more contained for several reasons: a) the lower number of cases of reshoring in Europe reflects the less enthusiasm in previous years in the practice of offshoring; b) the size of American companies is relatively greater, favoring the general internationalization and fragmentation of production processes (59% of companies subject to reshoring are large, with more than 250 workers). Indeed, some researches stated that among German manufacturing firms, reshoring hardly occurs among SME's (Kinkel, 2014; Malloca, 2009) (Figure 7). SME's generally have more difficulty in reviewing their business strategies as they often lack resources that can adequately cover the risk of fragmentation of production processes (Figure 8). Furthermore, European companies have outsourced to China and Asia, but have also had a relocation propensity in "near" European countries (Poland, Turkey, Portugal, Romania) with

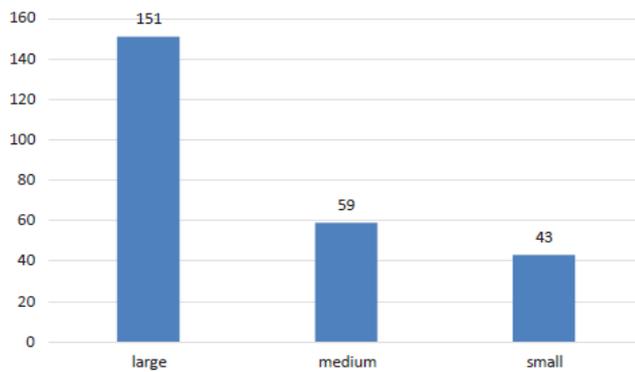
the idea of limiting cultural differences, distance from the market and transportation costs important for the general efficiency of the activities.

Figure 7: Share of German manufacturing companies with production facilities abroad, by company size, 2010–2012



Source: European Reshoring Monitor

Figure 8: Breakdown by number of European reshoring cases and firm size



Source: ERM

Consequently, it is possible to identify more reshoring cases within other European country than from Asia, counting the 40% of the overall decisions. Anyway, even if the variables that affect the relocation of European firms to their home country

are quite the same as US, the drivers exposition is weighted differently and directly affect the corporate strategy decisions. Crucial, it should be emphasized that the gap between European and Asian wages has never been as convenient as it could have been for the US, reducing the relative number of European companies that have been forced to reshoring for labor cost reasons. In fact, some European countries were and still are central to the reception of offshoring strategies given the low cost of labor (e.g. Portugal). What has most influenced the new European location choices lies in the role covered by the 4.0 industry, the impact of automation technologies (Fratocchi et al, 2018), the desire for greater proximity to its customers and the emphasis among the government incentive policies (De Backer et al, 2016). For what concerned robotics and automation, they support manufacturing reshoring when design and product innovation are involved or when is able to fill the lack of labor competences destroyed during the offshoring process (Ancarani et al, 2018). By shifting the focus on the European sectors involved in the reshoring strategies, important information emerges: for Finnish companies, for instance, reshoring decisions were implemented mainly in machine equipment and fabricated metal products sectors, while in Denmark and Sweden it has mostly concerned transportation equipment and electrical equipment sectors (Heikkila et al, 2018). On the contrary, Germany presented changes in more or less all manufacturing industries, while in France and Italy the higher number of reshoring cases are referred to automotive field and apparel respectively (Kinkel et al, 2014). Moving

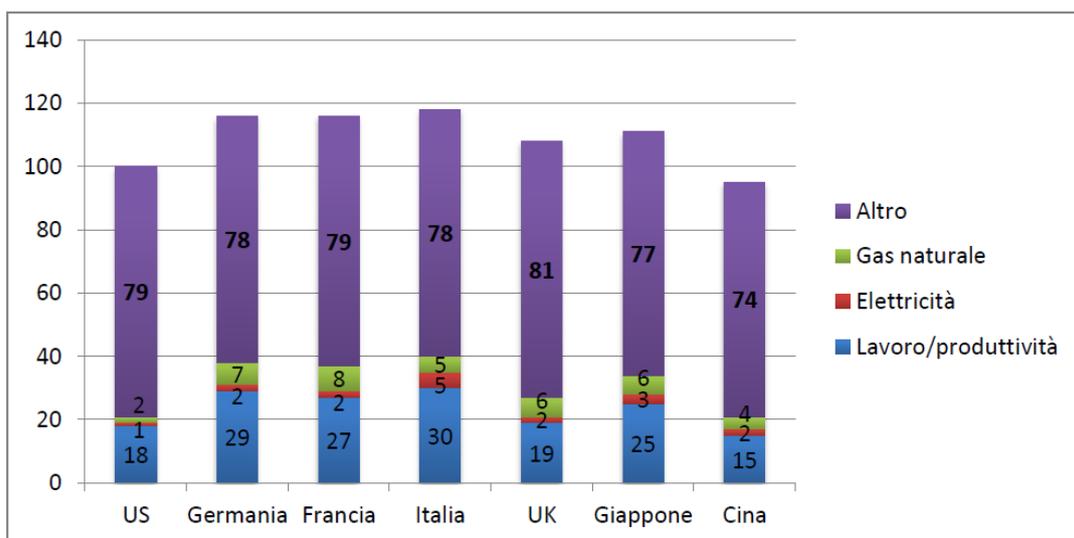
forward focusing on drivers and enabling factors, researches show that lead time, flexibility and quality seeking purposes play a crucial role among European firms (Eurostat). Another circumstance is that electricity costs in Europe are around 40-50% higher than the US and therefore there is no evidence that these have influenced the return decisions in the European context. Compared to US, that focus the attention mostly on efficiency saving the costs, European reshoring benefits such as from the reorganization of the overall supply chain and logistics in order to respond better to demand, being closer to consumer, exploit the sphere of "made in" and overcome competition treats.

2.8 Reshoring in Italy

Italy is on the top of the ranking of countries with the highest number of cases of companies that have decided to bring back part of their manufacturing activities within national borders; Italian cases preceded United States until 2015, but today has been joined by the UK and Germany. Despite the increase in reshoring cases from European Union countries, the Italian phenomenon recognize China as the place that is abandoned most frequently. Whether they are companies intending to return to their parent company or who decide to continue producing abroad (also moving closer to the country of origin (near-reshoring)), the divestments of activities from Chinese territory exceed those of the individual geographical regions. However, compared to the trend of world companies, the countries of Eastern Europe have a greater impact: if internationally they are abandoned by 11% of worldwide companies, in Italy come back about 27% of all cases. Even at the sectoral level, the inequalities between Italy and the rest of the world mainly concern the importance that is given to factors in relative rather than absolute terms. Significant is that if in the textile and footwear sector the reshoring cases accounts 19.3% of the total, in the Italian case it worth 43% of the evidence of activities brought back in the country of origin. Evidence regarding reasons for return strategies shows that costs have not had a significant impact (The Boston Consulting Group, 2013). In fact, Italy is the first country with the highest

production cost in terms of labor, electricity (Figure 9). Given the high burden that requires to produce in Italy, we assume to record reshoring of manufacturing activities with high added value in order to fulfill all costs (Savi, 2015). They are therefore large companies or companies operating in niche sectors, such as fashion and mechanics, who manage to compensate for the substantial costs with better product quality or through advantages related to image, design innovation and reputation of the company itself; for medium and small companies, however,

Figure 9: Comparison between production costs among different countries



Source: The Boston Consulting Group, 2013

Italy remains a too expensive country (Salvi et al, 2015). To cite a few examples, Piquadro and Furla returned to the bags and leather goods sector; Ferragamo, Prada and Tod's in the field of luxury and Safilo, returned to produce in Belluno. As far as these companies are concerned, the labor cost surcharge is compensated by a

gain in professionalism, skills, also technological, greater monitoring and process safety due to automation, and finally the benefits that imply proximity to the customer. On the other hand, it is the approach of companies like Calzedonia that, basing their competitive advantage on the low price, are less encouraged to repatriate (Calzedonia continues to maintain production in Serbia). However, the most incident factor concerns the impact that a "made in Italy" product can have on final consumers and on the price of the goods. The Italian manufacturing activities, typical for the uniqueness and quality they offer, often require processes requiring not only materials, but also technical skills, technological equipment and tacit expertise. These skills can be more easily traced within industrial districts and in artisan areas rather than abroad, as this allows an effective transfer of know-how and the creation of inter-organizational models of project sharing and synergic dynamics. The competitive advantage that derives from it is to be understood in the company's propensity to research and develop elements of an intangible nature (creativity, cultural values, business ethics, image, etc.) that can create added value and be incorporated into products transmitted on the markets in the form of mark-ups. The "made in Italy" effect, a purely immaterial factor, constitutes 41.6% of the reasons motivating the reshoring strategies, followed by the improvement in customer service with around 24.8% and other marginal cost items (logistics costs 12.9%, total costs 9.9%, labor costs 5.9%) (Fratocchi, 2015). The Italian brand has always been synonymous with high quality and this pushes companies to return to

meet the demanding expectations of consumers and increase the value they perceive; in fact, in a markets like fashion one, where demand is subject to sudden changes, proximity to the final market is a key factor for competitiveness.

CHAPTER 3: How do industrial robot impact on reshoring decisions?

3.1 Industrial robot, productivity, employment and reshoring in the international and European contest.

In the last decades the usage and adaptation of technologies in every sector and industries rose exponentially. New significant advances in robotics, automation and artificial intelligence have aroused concerns about the possible disruptive effect of technological change on labor market. This chapter is deeply focused on the impact that modern industrial robots produce on employment level, productivity, firm's location strategy and trade among developed and developing countries. Firstly, it is right to define what is intended with industrial robots and what are the main features:

- An industrial robot is a complex machine programmed to perform variety of repetitive tasks with consistent precision, and are used in a wide range of industries and applications.
- Could be programmed to perform routine activities without variation, but with incredible precision (first level robots), or able

to adapt independently to changes in operating conditions acquiring more flexibility (second level robots).⁶

- Robots perform in the industrial field accurate processing such as drilling, grinding, milling, painting, enameling and laser cutting.
- Despite the drastic diffusion of robots, they are mostly complementary to human activities.

In the 1970s the share of industrial robots used worldwide was negligible and the only way to save on the wage bill for labor-intensive manufacturing goods was to offshore part of the production to low-wage countries. Starting from 1990s, the world experienced a boost in the number of industrial robots such as 3D printers, robotic arms, and devices based on machine learning that not have only become able at performing the tasks of labor, but also could increasingly do them at superhuman levels of performance. Fortunately, not all tasks of the entire supply chain could be fully automated, in that some steps require necessarily skills and actions that are associated to human capabilities. As processes are transformed by the automation of individual activities, people perform activities that are complementary to the work that machines do, and vice versa. This is the case of

⁶ In this last category are included, for instance, robots with artificial vision able to react differently basing on material and shape of the inputs.

abstract tasks and manual-non routine tasks⁷ (Author, Levy, 2003). Routine tasks on the other side, are the first ones to be affected by the computerization and automation. They are all tasks easy to be programmed with help of a software and provoked during time the abandon of many dangerous, repetitive and demanding jobs. These shifts are changing the organization of companies, the structure and bases of competition of industries, and business models. The main evidence of the use of automated systems is found commonly within the manufacturing, transportation, food and beverage and agriculture sectors, which historically have always represented the bigger share of the total pool of jobs.⁸ Studies on the automation potential of the global economy, focusing on 46 countries representing about 80 percent of the global workforce, has examined more than 2,000 work activities and quantified the technical feasibility of automating each of them. While less than 5 percent of all occupations can be automated entirely using current technologies, about 60 percent of all occupations have at least 30 percent of activities that could be automated (Mc Kinsey Global institute, 2017). Worldwide, the number of industrial robot units rose from 178,000 in 2013 to 290,000 in 2018 (International Federation of Robot, 2019). This acceleration in the spread of

⁷ Among abstract tasks are included inductive reasoning, communications ability, problem-solving capabilities, intuition, creativity, and persuasion; the manual tasks are typically referable to situational adaptability, visual and language recognition, and in-person interactions.

⁸ According to a study made by the McKinsey Global Institute (MGI, 2017), accommodation and food services, manufacturing and agriculture sectors have respectively the 73, 60 and 58 percent of the technical potential of automation among all the steps of the value chain.

industrial robots would affect production processes to such an extent as to be considered one of the determinants of the trend reversal of international production networks, making the outsourcing of intermediate products in the more labor-intensive sectors less competitive. Data on the European “propensity to reshore” show in the period between 2015 and 2018 that of the 218 reshoring decisions in manufacturing field, 51 are attributable to the automation of in-house production processes (ERM, 2019). Other findings (Krenz, et al. 2018) illustrate that increasing productivity in automation surely leads to a relocation of previously offshore production back to the home economy⁹, but without improving low-skilled wages and without creating jobs for this class of workers. Although evidence on reshoring statistics is hard to find, the positive influence indeed is more visible on wage, productivity and skill level among the limited number of additional jobs. Since offshoring to emerging countries is likely to remain an important strategy, because their growing middle classes offer large and rapidly growing markets for manufactured products, firms are not willing to reshore all the jobs previously offshored. Thus, it does not necessarily mean the return of the identical offshored jobs, since after robotization, they could no longer be linked to the traditional assembly line. As low-automatized companies continued to entrust to foreign low-skilled labor boring and repetitive tasks, high-automated firms start to exploit the

⁹ Has been calculated, within the US manufacturing sector, an increase by one robot per 1000 workers is associated with a 3,5% increase of reshoring activities.

advantage of automation in the realization of those tasks. Low-skilled wages decline in response to increasing productivity from robots, while wages of high-skilled workers, who perform mainly tasks that complement automated processes, benefit from it (Krenz et al, 2018). “There’s never been a better time to be a worker with special skills or the right education, because these people can use technology to create and capture value” (McAfee, 2014). This consequently implies a rise in the skill premium and employment to skilled labor, followed by an employment deterioration of blue-collar and middle-class labor and in overall inequality among workers (Author, 2015) commonly known as “job polarization” (Goos and Manning, 2004). Furthermore, what is going hand by hand with the automatization and that it’s radically changing the "in" or "out" border choices of companies, is the growing consumer's' attention to the issue of sustainable production: the economic and environmental impact, and the social/ethical mission are increasingly moving in parallel with the choice of purchase. Adidas with the aim to reduce waste and pollution and improve quality and safety, after twenty years of outsourcing has returned to producing in Germany in green factories with high robotization, showing the new tendency of firm's automated-sustainable-oriented strategy.

3.2 Empirical analysis on European countries

At this point in the work, there is no longer any doubt that the strategy of relocation of business phases in the country of origin is taking on an increasingly widespread connotation. The number of reshoring cases has grown over the years both in Europe and throughout the world, affecting more or less significantly on innovation, trade and welfare in the countries involved. The study carried out so far enunciates the characteristics, dynamics and drivers that influence the geographical location and internationalization decision of companies aimed at benefiting from the optimization of the phases of the global supply chain. Particular attention is now being paid to the impact, from a macroeconomic point of view, that industrial robots have generated on incomes, employment rate, productivity level and trade in European countries. The goal is to extrapolate empirical evidence using cross regression analysis that can consistently explain the evolution and effects that automation has caused on the European economy in the sampling period of 10 years that goes from 2009 to 2018.

3.2.1 Database

In order to build the statistical model, a database was created containing the list of 26 countries (EU-28 excluding Malta and Cyprus), which make up the statistical sample, and the respective variables to be analyzed. To define this database, it was necessary to use databases such as: Eurostat, PRODCOM and Wits. The data values are expressed in Euros (€) as it is an analysis purely referable to European states. For each of the 26 countries have been gathered data on: the import, production, and also in industrial robots¹⁰, wages and employment levels, both manufacturing and total, output and total added value per country, and finally the import of intermediate goods from the world.

¹⁰ Industrial robots for multiple uses (excluding robots designed to perform a specific function (e.g. lifting, handling, loading or unloading)), PRODCOM code: 28993935

3.3 Empirical model

The purpose of this study is to answer questions such as:

- 1) Is there a relationship of substitutability between the import of intermediate goods and the import of industrial robots? If so, to what extent does it impact?
- 2) Is the import of industrial robots related to an increase in labor productivity given the greater use of automated processes in the country?
- 3) Is the expected increase in labor productivity seen only in the manufacturing sector or also in other industries?
- 4) Has the growing number of industrial robots in the market positively or negatively affected wages and employment? Does it have the same effect both in the manufacturing sector and in all other sectors?
- 5) Is there any relationship between the trend in the import of intermediate goods and wages from the manufacturing sector?

Panel regression is constructed following the following formula:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \dots + \lambda_t + \mu_i + \varepsilon_{it}$$

The level of outcome is defined by Y_{it} . The coefficients α and β express respectively the intercept of the model and the slope that belongs to each regressor X_{nit} . ε_{it} is the part of the peculiar error of the observation, while λ_t is the part of error linked to the time factor and μ_i is the error referable to the sample of countries. Being a multivariate regression of economic phenomenon with protracted observations over time, it was decided to insert temporal dummy in the panel model. Dummy or binary variables are variables that take values of 0 or 1 depending on whether a given condition is met or not. These variables are inserted in a multivariate regression with the aim of capturing the effect of a qualitative variable on the average value of the dependent variable; in this sense, it allows to improve the adaptation of the regression with the aim of weakening the distorting effect of an endogenous variable of the model that presents temporal shocks or anomalous observations. Consequently, to test the actual correlation of the variables in the period of time considered, it was decided to produce the first order lag (t-1) for the explanatory variables (e.g. `impRobSH_1`). Through the lag, a signal (numerical value of the

variable) occurred at time $t-1$ will impact the value that will make up the variable at time t (e.g. $Y_t = a + b Y_{t-1} + \varepsilon_t$).

3.2.2 Variables

With the intent of formulate a panel data model with fixed effects on Gretl software, the data have been processed and used to constitute what will become the dependent and explanatory variables (regressors).

Dependent variables:

- **ImpRobSH:** it represents the share of the import of industrial robots from the world market and is defined by the relationship between the import of industrial robots and manufacturing output.
- **ProdRobSH:** represents the production share of industrial robots and is the result of the relationship between the production of industrial robots and manufacturing output.
- **Lout:** defines the level of productivity of the workforce employed in the manufacturing sector and is calculable through the natural logarithm of the manufacturing output.
- **ImpIntSH:** expresses the share of the import of intermediate goods from the rest of the world. It can be defined as the relationship between the import of intermediate goods and manufacturing output, and can be considered as an estimator of the degree of outsourcing of a country.

Regressors:

- **empMANR:** it is defined as the difference between the natural logarithm of the level of manufacturing employment and the difference between the natural

logarithms of total occupation and the manufacturing one. $(\ln(\text{employeesMAN}) - \ln(\text{employees} - \text{employeesMAN}))$

- **lpr:** indicates productivity in the manufacturing sector and is defined by the natural logarithm of the relationship between the added value in the manufacturing sector and the total hours worked by workers in the manufacturing sector.
- **lemp:** it expresses the quantity of workers in the market and is defined by the natural logarithm of the national employment level.
- **wageSH:** it represents the share of wages with respect to total production or the ratio between wages and gross value added.
- **wageSHMAN:** it represents the share of manufacturing wages compared to total manufacturing production and is the ratio between wages and added value both from the manufacturing sector.

3.3.1 Results and observations

Therefore, with the aim of formulating explanatory tables for the study, a statistical panel model was built for each dependent variable. It was decided to proceed with the construction of 4 tables representing the same phenomenon but with different applications: the first is composed of the simple panel model; the second represents the model with the delay (t-1) for each dependent variable; the third by applying robust standard errors to the model; the fourth applying both robust standard errors and the delay (lag) of each dependent variable. Not only for the quality of the results, but also for greater clarity, the observations will be carried out mainly on the panel model with robust standard errors. (Table 1)

Table 1: panel model representation table with robust standard errors.

DEPENDENT REGRESSOR	implntSH	lpr	empMANR	lemp	wageSH	wageSHMAN
impRobSH_1	-0,034 *** (0,007)	0,022 *** (0,006)	-0,021 *** (0,007)	0,019 *** (0,005)	-0,004 (0,004)	-0,033 *** (0,007)
prodRobSH_1	0,021 (0,028)	0,033 (0,037)	-0,007 (0,028)	-0,010 (0,022)	-0,002 (0,012)	-0,025 (0,026)
lout_1	-0,120 ** (0,053)	0,170 *** (0,060)	0,209 *** (0,056)	0,022 *** (0,039)	0,066 *** (0,023)	0,121 ** (0,045)
implntSH_1		-0,235 * (0,136)	0,412 * (0,205)	0,175 (0,136)	0,071 (0,078)	0,452 ** (0,181)

Thanks to these results, it is possible answer to some questions previously exposed by highlighting some relationships of the variables with the share of imports of robots with a statistically significant evidence defined by the significance level lower than 0.001 (p-value <0.001):

- *The condition of substitutability between the import share of intermediate goods and the share of import of industrial robots is present and significant.*

The opposite trend of the two variables is confirmed by the negativity of the sign of the coefficient. A percentage increase in the share of robot imports causes a decrease in the import share of intermediate goods of 0.03%. This confirms the fact that many companies want to implement some automated processes within their domestic structures, preferring them to obsolete processes in factories located miles away. The trend is to decrease the outsourcing of some stages of production and bring them back home with the aim of increasing their value.

- *A change in the share of robot imports positively affects productivity and added value per hour worked.* The 1% increase in the robot import share implies an increase in productivity (lpr) of 0.022%. All of this is attributable to the increase in the number of installations of automated and computerized processes in the period considered. They allow a higher production speed, with fewer errors, and a more integrated collaboration of the information flow, positively impacting on the output level.

- *The positive change in the import of robots has an inverse effect on the share of employment in the manufacturing sector ($empMANR$), while it has a direct impact on general employment ($lemp$). The manufacturing sector is undoubtedly the one that has undergone the replacement of commonly labor-intensive activities with partially autonomous processes. Both for the need of new skills and for the desire to save on personnel costs that are no longer needed as before, companies in the manufacturing sector are reducing the use of low-skill work. One-point percent increase in the share of import robot cause a negative effect on $empMANR$ by 0,021%, while $lemp$ is affected positively by 0,019%.*
- *The positive change in the share of robot imports negatively affects the wages of the manufacturing sector. Following the theory of "job polarization"(Manning, 2003) the entry of robots into the market allows only a few high-educated workers to have earning gain. Most of the others on average low-educated, becoming relatively less productive compared to robots, suffer a negative impact on wages, reflecting on the share of employment in the manufacturing sector. The effect of importing industrial robots seems to be negligible on all wages since they are not used in each sector.*

Evidence, this time referring to the import of intermediate goods, can be explained by the use of the table built with a panel model using both lag on dependent variables, and including robust standard errors (Table 2). Attention is paid to the highlighted row and columns.

Table 2: panel model representation table with dependent variable delay and robust standard errors.

DEPENDENT	lpr	empMANR	lemp	wageSH	wageSHMAN
REGRESSOR					
impRobSH_1	0,017 *** (0,006)	-0,007 * (0,004)	0,010 ** (0,004)	-0,001 (0,002)	-0,013 *** (0,004)
prodRobSH_1	0,027 (0,034)	-0,024 (0,015)	-0,015 (0,011)	-0,004 (0,007)	-0,015 (0,018)
lout_1	0,065 (0,069)	0,006 (0,038)	0,061 ** (0,0262121)	0,059 *** (0,018)	0,114 *** (0,033)
impIntSH_1	-0,290 ** (0,136)	0,043 (0,061)	0,156203 * (0,087)	0,077 * (0,043)	0,414 *** (0,140)
lpr_1	0,280 ** (0,106)				
empMANR_1		0,744 *** (0,095)			
lemp_1			0,615 *** (0,058)		
wageSH_1				0,776 *** (0,058)	
wageSHMAN_1					0,547 *** (0,159)

- *A positive change in the import share of intermediate goods causes an increase in the wage share of workers in the manufacturing sector.* The entry of intermediate goods into the country presupposes that they are in turn processed by practically low-skilled workers. If some of the phases prior to the import of those goods (outsourced products) were implemented following automated in-house processes, the quantity of intermediate goods entering the country would be reduced, causing a reduction in the demand for workers and their average salary. The relation between the import share of intermediate goods and salaries of manufacturing workers is positive and significant. If ImpIntSH rise by 1%, wageSHMAN is affected positively by 0,414%.

Final Conclusions

The thesis is aimed at codify the determinant factors of both offshoring and reshoring strategy. 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, specific characteristics owned by the company and others typical of the economic ambient. More specifically, we have argued that firms differ in their propensity to offshore and reshore depending on their internationalization strategy, their accrued technological capabilities, their specific investments and external factors as governmental incentives and objectives. It also showed how much the benefits that companies derive from their business leasing strategy have changed. Initially, companies were driven to outsource their processes in a low-cost seeking and resource seeking perspective. China has been the country that has absolutely attracted the attention of the companies interested in reducing the wage bill. In recent years, however, considering only the short term rather than the medium-long term business strategy, many companies have faced subsequent problems relating, for example, to the loss of quality control and have often found hidden and unforeseen costs. In addition, the economic environment has undergone significant changes and in China, as in other countries, the cost of labor has increased, and it is increasingly difficult to find and access qualified personnel. The long transport times are another negative factor,

as they have contributed to reducing the company's operational flexibility, consequently reducing the speed of response to fluctuations in demand. For these and other reasons (increase in services, greater attention to consumer relations, new technologies), various reshoring processes are currently taking place. This does not preclude that the offshoring phenomenon has disappeared. Evidences confirms that the phenomenon is still present as it is necessary for the internationalization process of companies, but in decline and with different connotations and dynamics compared to the past. First of all, it is the nature of low-cost seeking offshoring that is abandoned in order to give space to the one aimed at an operational market seeking strategy, to better control certain markets as it is increasingly important to be close to the customer base and their changing needs. More than in the past, there are also more and more cases of moving businesses between low cost countries or between high cost countries.

As far as reshoring cases are concerned, it has been shown that the US and Europe are the areas in which the cases of return of manufacturing activities are more common. While in the US the return was favored by government programs and policies aimed at creating more jobs and reconsolidating the country's production capacity, in Europe the return process took place more spontaneously. For example, Italian companies have taken note of changes in international demand which calls for a greater supply of "Made in Italy" products; therefore, goods of higher quality and reliability. To allow the creation of quality products and an integrated

organization of all levels of the supply chain, technology has played a fundamental role in defining corporate objectives. Industrial robots in particular have allowed certain stages of in-house production to be completed, gaining efficiency and precision, therefore without requiring any more a strong relationship with assemblers in low-cost countries. The research and studies reported so far have confirmed the correlation between the increase in the use of industrial robots and the increase in cases of reshoring in the country. For European countries, the automation path seems the most promising for an increase in productivity. In any case, whatever the intention or location motivation of a business, careful and particular attention is required to the design of the organizational structure and to the consideration of all the factors and implications involved. Undoubtedly, following the numerous failures of offshoring strategies, companies are more aware and have better understood that the simple search for advantages related to the logic of cost, in the short term, can lead to the erosion of advantages over rivals. By now mere arbitrariness on labor costs cannot be considered an efficient strategy.

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