FOREIGN INVESTMENT IN PORTUGAL AND KNOWLEDGE SPILLOVERS: FROM THE METHUEN TREATY TO THE TWENTY FIRST CENTURY[1]

Teresa da Silva Lopes, *University of York*

Vitor Corado Simões, *Universidade de Lisboa*

ABSTRACT

This paper looks at the impact of foreign direct investment on host country firms' capabilities, industry competitiveness, and long-term economic development. Focussing on the case of Portugal over a period of three hundred years, it develops a framework of the types of knowledge spillovers, based on the behaviour of, and the interactions between, foreign investors and local players. This study argues that the impact of FDI in Portugal has evolved in stages, from closed to interactive approaches, increasing the learning by local players. These ultimately lead to the long-term upgrade of firms' capabilities, industry competitiveness, and host country economic development.

Key words: Foreign Investment, knowledge, spillovers, learning, Portugal.

[1] This article greatly benefited from the comments of Paulo da Silva Lopes and three anonymous referees.

FOREIGN INVESTMENT IN PORTUGAL AND KNOWLEDGE SPILLOVERS: FROM THE METHUEN TREATY TO THE TWENTY FIRST CENTURY

Teresa da Silva Lopes, *University of York*

Vitor Corado Simões, *Universidade de Lisboa*

1. Introduction

This paper comes in the wake of the views of José da Silva Lopes regarding foreign direct investment (FDI) and the process of economic development. José da Silva Lopes, a former policy maker - Governor of the Central Bank, Minister of Finance and Member of Parliament of Portugal, considered that the weak international competitiveness of the country with regards trade and FDI and the low levels of education and skills of the Portuguese labour force were key barriers to economic growth and development (Lopes, 1964, 1996; Público, 2004; Lourenço, 2006; Lopes, 2000, 2001). The characteristics of knowledge spillovers from FDI were a central concern for him, since such spillovers might enable to the fostering of the development of domestic entrepreneurial initiatives. Knowledge spillovers are understood here to be investments in knowledge creation by one party, the foreign investor, which generate external benefits by facilitating entrepreneurship and innovation by other, namely local, players. Some of these are internal to the firm, such as the local subsidiary, a joint venture partner or skilled staff, while others are external such as suppliers or customers (Marshall, 1890; Arrow, 1962; Romer, 1986, 1990; Grossman and Helpman, 1991).

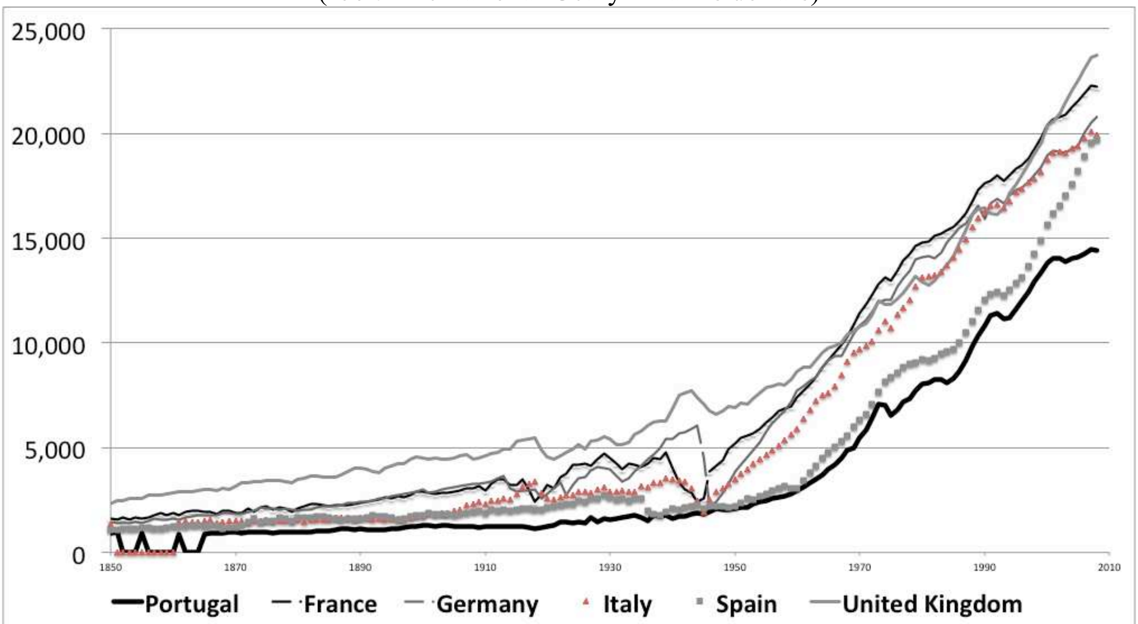
Most research on FDI spillovers in general (Aitken and Harrison, 1990; Blomström et al., 1983; Görg and Greenaway, 2004; Javorcik and Spatareanu, 2005; Smeets, 2008; Driffield, Love and Menghinello, 2010; Wang and Wu, 2016) and in Portugal in particular (Crespo and Fontoura, 2007; Crespo, Proença and Fontoura, 2009) has used quantitative analysis. This study follows a qualitative and historically informed approach to look at the long-term effects of investments by multinational firms in the performance and survival of local subsidiaries, and also their impact on the development of industries in the country (Jones, 2014, 2015; Wilkins, 2009, 2010). The analysis is based on original sources such as company and public archives, and also on secondary sources such as newspapers, annual reports, scholarly articles and company monographs.

The purpose is to respond to the following questions: Can historical evidence provide new insights about different patterns of knowledge spillovers in foreign direct investment? What is the impact of knowledge spillovers on upgrading the capabilities of businesses and human resources skills? Do knowledge spillovers promote economic growth and development in countries such as Portugal?

Portugal provides a good research ground, since it is a small and open economy in the periphery of Europe, which has long since been involved in international trade and investment. Furthermore, in spite of a strong historical linkage with Britain, the country origins of inward FDI are very diverse.

Figure 1 – Evolution of Portuguese GDP Per Capita in comparison to other Western European Countries, 1850-2010

(1990 International Geary-Khamis dollars)



Sources: GDP Data: 1850- 1959 – Maddison (2010); 1960-2006: WDI (2010). Population – 1850-1959 – Maddison (2010); 1960-2006: WDI (2010).

As illustrated by Figure 1 between the mid-nineteenth century and the present day Portuguese GDP per-capita was much lower than the most advanced countries in Western Europe. It is only from the 1960s, that Portugal starts to grow at faster rates, following the same trends as those of other European countries.

The study looks at the whole period from the Methuen Treaty (1703) until the present day, illustrating Portugal's long history as an open economy.[2] Seven phases of FDI into Portugal are identified. They refer to key shifts in the national and international, political, economic, social and business environment. These phases are: (1) From Methuen to the 1860s; (2) From the 1860s, when the first globalization wave started until the beginning of World War I; (3) From the beginning of World War I to the late 1950s; (4) The 'Opening-up' phase, between 1960 and 1974; (5) The 'Post-April Revolution', from 1974 to the early 1980s; (6) Entering the European Economic Community (EEC), throughout the 1980s and 1990s; and (7) Inside the Eurozone, corresponding to the most recent phase, following the launching of the Euro in 1999 until 1917. A brief characterization of the dominant features of FDI in each wave is provided (including the motivations for FDI), and the most significant investments in manufacturing by multinational enterprises (MNEs) in the Portuguese industry in each period are assessed using a newly proposed knowledge spillovers framework. For most phases, the case studies relate to investments in the industries that attracted more FDI. In the last phase (inside the Eurozone) the case studies selected are characteristic of the shift of inward FDI in Portugal towards services.

For each case study the following questions were addressed: for the foreign player – what was the knowledge necessary to run the business in the host country, Portugal? Who held that knowledge? How was that knowledge conveyed to the host country subsidiary? For the local player – was it a subsidiary, a local supplier, a customer, or another stakeholder? What were the approaches they followed with regard to learning?

This paper is organised in four parts. Following the introduction, section two provides the conceptual framework to address FDI knowledge spillovers. This framework is presented upfront but is the result of the empirical research conducted and the patterns

[2] The Methuen Treaty was a military and commercial agreement between Portugal and England signed in 1703 as part of the War of the Spanish Succession (Smith, 1776/1937).

in terms of knowledge spillovers identified for FDI into Portugal over a period of 300 years, which are discussed in the following sections. Section three provides an historical perspective of FDI inflows into Portugal, along the seven periods identified above. It highlights the main motivations identified for foreign investment in Portugal in each stage. The fourth and final section addresses the research questions, using the cases studied to discuss the contribution (or not) of FDI to knowledge spillovers as well as to the development of industries and Portuguese economic growth and summarizing the main findings.

2. FDI and Knowledge Spillovers

Knowledge refers to the learning and application of concepts, principles and information regarding a particular subject (Nelson and Winter, 1982). Since the 1990s researchers have shown an increasing concern with knowledge management, often drawing from Michael Polanyi's distinction between tacit and explicit knowledge (Polanyi, 1966; Winter, 1987) and Lopes (2007) concepts of sticky and smooth knowledge. A wide literature on inter-organisational knowledge flows has emerged (Argote and Ingram, 2000; Nonaka, Toyama and Konno, 2000; Carlile, 2004; Easterby-Smith, Lyles and Tsang, 2008; Patriotta, Castellano and Wright, 2013), particularly in joint ventures (Inkpen and Crossan, 1995; Lane, Salk and Lykles, 2001: Dhanaraj, Lyles, Steensma and Tihanyi, 2004; Lyles and Salk, 2007; Nam, 2011; Khan, Lew and Sinkovics, 2015) as well as in the context of multinational firms (Teece, 1977; Bartlett and Ghoshal, 1989; Gupta e Govindarajan, 1994 and 2000; Cantwell and Mudambi, 2005; Mahnke, Pedersen and Venzin, 2005; Noorderhaven and Harzing, 2009; Dellestrand and Kappen, 2012; Narula, 2014; Andersson, Buckley and Dellestrand, 2015; Cantwell and Piscitello, 2015). This suggests that the capability to combine and orchestrate dispersed knowledge is key for multinational business to achieve competitive advantage (Hymer, 1960/1976; Teece, 1977; Kogut and Zander, 1992; Caraça and Simões, 1995; Cantwell and Mudambi, 2005; Narula, 2014; Alcácer, Cantwell and Piscitello, 2016). While there is often a concern with knowledge protection, as assumed by the internalisation theory (Buckley and Casson, 1976) and the eclectic paradigm (Dunning, 1979, 1988), in other instances the main issue is knowledge interaction, which entails some kind of reciprocity (Cantwell, 1989;

Dunning, 1995; Cantwell and Smeets, 2013). This means that a mutual exchange of information, skills and expertise among different business actors may take place (Caraça and Simões, 1995). In many cases, as Brown and Duguid (2001) have argued, the process involves the capacity to de-contextualise and re-contextualise the knowledge concerned. Absorptive capacity and commitment emerge as important conditions for local partners to learn from interaction with multinational firms (Lane, Salk and Lyles, 2001; Lyles and Salk, 2007; Easterby-Smith, Lyles and Tsang, 2008; Blalock and Simon, 2009; Nam, 2011; Cano-Kollmann, Cantwell, Hannigan, Mudambi, and Song, 2016).

As mentioned in the introduction, there is a wide literature on FDI spillovers. Drawing on an historical perspective Wilkins (1970, 2009, 2010) and Jones (2005, 2013) have long studied the impact of FDI in host economies through knowledge spillovers, considering that they are greatly restricted by the nature of global capitalism at different time periods. In international business Smeets (2008) developed a framework suggesting that vertical linkages, worker mobility and demonstration effects are the main carriers for the spillover process. While drawing on these authors and on an interdisciplinary approach, our study to understand the specific types of FDI knowledge spillover is framed in a different way, to capture specific trends over the long-term. We consider that knowledge spillovers relate to investments in knowledge creation by one party (the foreign investor), which generate external benefits by facilitating entrepreneurship and innovation by other parties, namely local players. We develop a framework which takes into account the strategic considerations and behaviours of both foreign and domestic players, some internal, and others external to the firm, such as customers or suppliers of intermediate products. This terminology is applied to the analysis of a sample of relevant foreign investments in Portugal in different time settings.

Table 1 presented below draws from the above literature, especially from that on knowledge spillovers and on local partner learning. It provides a typology of knowledge spillovers, taking into account the behaviour of the foreign investors and local partners. It is also the result of the historical research and empirical evidence collected and documented in section three. This typology has the potential to be applied to different time and industry conditions, and also distinct countries, assuming the existence of a gap in the levels of economic and technological development between the source and the recipient countries.

Table 1 – Framework on the Patterns of Knowledge Spillovers

Local Player **Foreign Player**	**Implementing**	**Learning**
Closed Approach	Knowledge Application	Knowledge Replication
Interactive Approach	Knowledge Adaptation	Knowledge Sharing

Source: the authors

As illustrated in Table 1, the spillover process is considered to involve two kinds of players: a foreign firm (and its managers), and local economic agents (either individuals or firms). Though recognizing the relevance of the criticism raised by Hennart (2009), regarding the focus put by extant literature on MNE's perspectives, we assume that the process is initiated by the foreign player, either a firm or an entrepreneur/individual. This may follow one of two basic stances to the running of the business abroad: a closed or an interactive approach. The first means that the knowledge needed to establish and manage the business abroad is held by the investing firm, and is conveyed to the subsidiary mainly through highly-skilled individuals who have the experience and the tacit knowledge needed to set up and manage the business[3]. The interactive approach, while also starting from the existence of a foreign investor's "ownership advantage" (Dunning, 1988), assumes the existence of interactions with local players (joint venture partners, suppliers, skilled human resources).

Local players, which can be internal or external to the firm, may adopt two kinds of responses: 'implementing' or 'learning'. The distinction between the two arises from the local players' approaches to learning. Implementing means that local players (individuals or firms) are chiefly concerned with replicating the routines defined by foreign firms' management to achieve static efficiency; they have operational capabilities only and do not endeavour (or are not able) to go further in the knowledge-acquisition process. For the learning approach, there is a commitment by local players

[3] This approach has some similarities with Driffield et al. (2010). However, differently from these authors, our concern is exclusively focused on the relationship of the foreign subsidiary with local players, assigning less relevance to the relationship between the parent firm and the subsidiary. Our approach therefore enables further analysis than the mere identification of knowledge spillovers in general.

not just to access operational capabilities but to reach duplicative or even innovative capabilities (Baranson and Roark, 1985).

Based on this combination of foreign and domestic players' approaches, this study has identified four archetypes of knowledge spillovers: knowledge application, knowledge replication, knowledge adaptation, and knowledge sharing. These will be used next to assess the knowledge spillover behaviour of a set of foreign investments carried out in different historical periods as mentioned above.

The term knowledge application is used to capture the situation in which business knowledge is mostly embodied in the people expatriated to launch and manage the investment abroad. The main knowledge conveyers (individuals and information on administrative procedures, in this case) travel to another country to launch a new undertaking there. The level of relationships with local players is usually very limited. They chiefly correspond to employment contracts, and local employees tend to concentrate on operational activities. Core business processes are managed by expatriates, who embody the business knowledge, being thereby able to introduce adaptations if needed, and are trusted by headquarters' managers. Separation between managerial and operational knowledge is very sharp, with a view to minimize the opportunities for knowledge diffusion. Technology diffusion tends to be very limited, competitors and related industries getting little benefits from such investment.

Knowledge replication, while still assuming a closed approach by investing companies, corresponds to a situation in which local players (namely local subsidiaries, joint venture partners, suppliers and customers) may not restrict themselves to operational tasks. They have a bent towards learning. This may happen via two main instruments (Smeets, 2008): worker mobility, and demonstration effects. This is easier in industries with low barriers to entry, limited knowledge ambiguity (Reed and De Filippi, 1990; Simonin, 1999 and 2004) and tacitness.

The cell in which foreign investors adopt an interactive approach and local players have an implementation role was labelled 'knowledge adaptation'. Foreign investors introduce adjustments to the business, e.g. to respond to customers' needs or to train local suppliers. Subsidiaries' local staff may be instrumental in the process, playing a translating role. Knowledge spillovers may take place through vertical linkages within the value chain. However, they are bound to be limited due to domestic firms' low learning commitment and capabilities.

The fourth situation corresponds to 'knowledge sharing'. The foreign firm may play a tutorial role towards local partners and other players. A knowledge sharing process may develop, as a result of interaction and cooperation in ensuring higher efficiency and adaptation. Though enjoying at the start lower technological and managerial capabilities, local firms are committed to learn from their foreign counterparts. Recipients' commitment and efforts to upgrade managerial and technological capabilities may give rise to virtuous cycles (Cantwell, 1987; Simões, 2003). The open stance taken by foreign firms may stem from the characteristics of the industry, specific complementary assets held by local firms, and investment contracts with local authorities. While in several instances, knowledge sharing may be related to vertical linkages, in others it may happen in the context of joint ventures or wider business networks.

3. FDI spillovers in Portugal: A Historical Perspective

3.1 From Methuen in 1703 to 1860

This period is characterised by great dependence of Portugal on international trade with Britain. This reliance on one country, even if less significant afterwards, remains until World War I (Sideri, 1970: 150). The Methuen Treaty, signed in 1703, involved two countries and two main products: the trade of cloths by Britain, and the trade of wine by Portugal (Smith, 1776/1937; Black, 1987).[4] Portuguese wines benefitted from significant advantages in relation to French wines in the British market, as import duties were only two-thirds of those applied to French wines. In return, Portugal imported cloths, among other goods, from Britain (Fisher, 1971: 24-28; Azevedo, 1947: 395-96). In spite of some controversy on which country most benefited from this treaty,[5] there is a clear consensus that trade between the two countries increased exponentially. The industry that most benefitted, and which attracted most FDI was port wine (Azevedo,

[4] There were in fact three Methuen treaties signed in the same year. Shillington, Chapman and Wallis (1903); and 'Receitas Públicas no ano de 1716' in Azevedo (1947: 463, 468-69).

[5] On opinions considering that the Portuguese benefitted most see for example Adam Smith (1776/1937) book IV, chapter 6. For opinions defending the argument that the British benefitted most, see for example Azevedo (1947: 421) and Sideri (1970: 725).

1947: 402 -404; Francis, 1972). This category of Portuguese wine (greatly flavored and fortified with brandy) was very attractive to British taste. In the first half of the nineteenth century port wine exports reached levels close to 50 percent of Portuguese exports, remaining a key source of foreign income for Portugal well into the twentieth century (Lopes, 1969: 38-45, 97-99; Martins, 1990: 238-39; Lopes, 1999: 19-23). Some foreign wine merchants with established operations in Britain, such as Hunt Roope & Co., opened branches in Portugal. Others, such as George Sandeman & Co., formerly employees of British trading companies, also established their own wine trading businesses, in most cases specialising in the trade of wine (Duguid and Lopes, 1999). Even though Britain and its colonial Empire were the main destinations for the wine, other markets such as Brazil, and France also started to gain some significance (Martins, 1990: 217-221). These port wine businesses established in Portugal were born global, given that since their creation they only targeted foreign markets, in particular Great Britain and the Empire (Lopes, 1999, 2001). Many of these port firms established by foreign entrepreneurs, in particular British expatriates, cannot be considered to be foreign direct investments, or subsidiaries of foreign MNEs as in practice they were registered and headquartered in Portugal (Lopes, 1999). Nonetheless, many were strongly networked with firms in foreign markets, often through family ties.

In order to understand the level of knowledge spillovers that took place in the relationship between the British and the Portuguese players in the port wine industry before 1860, it is important to take into account two key agents in the value chain: wine traders and wine producers. Wine traders tended to be of foreign origin (Schneider, 1980; Bennett, 1995; Allen, 1952; Sandeman, 1955; Bradford, 1992; Lopes, 1999, 2005). Wine producers were Portuguese.[6] In terms of product development the relations between these two parties tended to work as fluid interactive networks. The British merchants provided information to wine producers about wine drinking habits and tastes of consumers in foreign markets, and the Portuguese adapted their production methods accordingly. Simultaneously, the Portuguese sent port wines with new flavours to Britain, which were often well received. There was therefore some learning and innovative behaviour on the part of Portuguese wine producers (Pereira and Barros, 2013). According to our framework in Table 1, the knowledge spillovers were characterised by sharing; there was an interactive approach by foreign players in

[6] The actual process of production of port where wine is mixed with brandy is known to have existed since Roman times (Cortez, 1951; Fonseca *et al*, 1981).

particular with regards to the development of new products. Portuguese wine producers were able to learn about British tastes and to adapt the products accordingly.

3.2 First Globalisation Wave, 1860-1914

The globalization wave which started by around 1860, did not have the same impact on the Portuguese economy (Lopes, 2004; O'Rourke and Williamson, 1999). During the period the country expanded slowly and diverged from the European core (Lains, 2006). Until World War I British investment was dominant. Statistics show that by 1914 it accounted for around 45 per cent of total world stock of outward FDI (Jones, 2005: 22). These investments were either seeking new resources, or new markets, or both (Dunning, 1993: 154). In Portugal, where according to Mata (2002: 186) 40 per cent of the total of firms created between 1867 and 1876 were foreign owned, these investments were essentially market seeking.

Portfolio investments were predominant. They entailed the acquisition of Portuguese government bonds, reaching 40 percent of GDP in 1891. However, the financial crisis of 1891-1892 stopped this trend, resulting in large current account and government deficits and the inability of the Bank of Portugal to fully honour the interest returns on the national and foreign public debt (Reis, 2000). Having joined the Gold Standard, in 1854, Portugal abandoned it in 1890. Portugal was not able to borrow in international financial markets until an agreement with foreign bondholders was reached in 1902 (Lains, 2008).

During the second half of the nineteenth century a new legal form of business emerged in most western countries: the joint stock company, in which different stocks could be bought and sold by shareholders, without any effect on the continued existence of the company. In Britain, the Joint Stock Companies Act of 1844 started a boom in company foundations, which became the backbone of modern capitalism. These companies tended to be managed by family or professional experts who reported back to shareholders at annual meetings (Westall, 1991; Wilkins and Schroeter, 1998). In Portugal a similar law was passed in 1867, attracting a large number of limited liability foreign businesses into the country until World War I (Mata, 1993). Compared with the long-established business traditions of British families in port wine exports since the eighteenth century, association of capital with formalized joint-stock limited-liability companies represented a higher sophistication of foreign capital in Portuguese business.

There are no systematised statistics about flows of foreign investment into Portugal in the early twentieth century. However, railways were likely to attract most investment, in particular if we take into account the foreign investments in Portuguese colonies. By the number of foreign firms, existing statistics indicate, nonetheless, that it was the insurance industry, which was most recurrent. Portugal was a particularly attractive market for insurance companies in the area of maritime transportation, as there were a lot of vessels that carried goods between Portugal and the Portuguese African colonies (Mata, 2002: 203). From 1875 until 1914 the number of insurance companies decreased to 38 percent, in favour of other sectors such as public utilities (water, gas, and electricity), and also telecommunications (such as the telegraph, and telephone) (Mata, 2002: 188).

Investments in railways adopted organisational forms which, as highlighted by Wilkins (1988), do not fit conventional definitions of MNE. An illustration is the *Companhia Real dos Caminhos de Ferro Portugueses* (Vieira, 1988), where there was some learning by domestic parties, namely in investments in mainland Portugal. It was a private company with French majority investments (Vieira, 1988). During approximately the first twenty years of its operation strategic decision taking was centralized in Paris. Despite the late development of a railway network when compared to other countries in Europe, between 1856 and 1894 Portugal developed the world's tenth largest position in terms of railway density, measured in kms^2, being positioned ahead of countries such as Spain, Romania, Norway and other European nations (Marques, 1978: 15-16; Rodrigues and Mendes, 1999: 211-213). *Companhia Real dos Caminhos de Ferro Portugueses* was the first foreign successful venture in Portugal in the railway industry. It provided both the capital and the loans, and also the engineering skills, which led to more significant knowledge spillovers, in spite of an overall closed approach by foreign investors (Silva, 2014). There was substantial learning by Portuguese engineers many of whom developed their own businesses and built new railway lines (Matos and Diogo, 2003; Rodrigues, 2003; Saraiva, 2007). In terms of the framework presented on Table 1, this investment corresponds to a case of knowledge replication, characterised by a closed approach by the foreign player and learning by the local player. Another illustration is *Companhia do Caminho de Ferro de Benguela* established in Lisbon in 1902, which invested in Angola, then a Portuguese colony. During this period the management of all the Portuguese colonies was centralised in

Lisbon (Marçal, 2016). The Portuguese government awarded a concession for 99 years to the Scottish engineer Robert Williams, for the construction of the railway, which connected Lobito with Katanga in Congo. The investment was funded by Tanganyka Concessions, a British firm which also invested in Rhodesia in the exploration of mines (Benguela Railway Company, 1929; Silva, 2008). This type of investment was associated with a very closed approach by the investing party as it kept all the strategic, skilled and technical jobs in the hands of British expatriate engineers and technicians with expertise in railways. They were sent out to supervise the works on the railways, while the implementation and operational tasks were carried out by locals or immigrants who were generally unskilled (Esteves, 2000).

3.3 Nationalism, Protection and Isolationism, 1914-1959

The war 1914-1918 stopped foreign investment. Despite attempts in the 1920s, the interwar period did not see the return of a global economy. There were restrictions to the free movement of capital, goods and people, which disturbed international flows of capital, trade and investment, and led to import substitution mechanisms. Europe experienced some recovery during the 1920s, but there was high inflation, followed by the Great Depression of 1929-32 (Wilkins, 1970, 2009; Jones, 2005; Mata and Valério, 1993; Lains and Silva, 2005). Closed markets and nationalism became widespread, and Portugal was no exception. As in other countries, international trade and capital movements into Portugal decreased to very low levels. In 1926 Portugal suffered a military coup, which led to a change of political regime, and the establishment of a dictatorship led by Salazar. The new regime closed the economy to foreign competition through high tariffs to imports, and to domestic competition through the law of '*Condicionamento Industrial*' (Manufacturing Investment Control) of 1931. This law provided that any new business (foreign or domestic) was subject to governmental approval. The result was a restriction of entrepreneurship, and the control of the Portuguese industry by a few family businesses which formed large business groups comprised of unrelated activities, and became dominant in the industries where they operated (Brito, 1989; Confraria, 1992; Costa et al, 2010; Silva, 2016).

There were several foreign investments by multinationals which were granted permission to operate in Portugal, and exploited monopolistic or oligopolistic positions.

For example, Solvay, a Belgian firm founded in 1863, which becamee one of the world's largest multinationals in chemicals, acquired a Portuguese firm 'Soda Póvoa' in 1934 and started production of hydrochloric acid, and sodium carbonate. These were important innovations for Portugal at the time. The business remained a monopoly until Portugal entered the European Economic Community in the 1980s (Bertrams et al, 2013). This investment was managed by expatriate entrepreneurs who occupied the top positions, and for that reason is associated with a closed approach by the multinational. And yet, there were learning implications at the firm level and also in the development of related industries such as glass and plastics, and there was learning through knowledge replication.

In 1943 a new law, specifically directed towards foreign investors (Lei no.1994), was enacted: *Lei da Nacionalização de Capitais* (Capital Nationalisation Law). Under this law, only firms with at least 60 percent of Portuguese equity were allowed to provide public services and/or engage in activities deemed relevant from the military or economic standpoint. The fear of the political regime was that inward FDI might generate winds of change and challenge the economic status quo. This law was not applied to the foreign investors, such as Solvay, which had entered the country before 1943.

Portugal was not formally involved in World War II. During the war period several multinational companies with investments in Portugal moved their headquarters or transferred their managers to Portugal. An illustration is Sofina, a Belgian firm established in Portugal in the late nineteenth century through a majority investment and control over the company CRGE – *Companhias Reunidas de Gás e Electricidade*. This company which had, for a long time, the monopoly of production of electricity and gas in Portugal, transferred its headquarters to Lisbon during the War as a way to avoid expropriations and assure survival, and the managers moved to New York (Matos, 1973: 188). Once again knowledge spillovers took the form of replication, characterized by a closed approach by the foreign players with the top management comprised essentially of foreign expatriates, and by some learning by the local players. CRGE is one of the main predecessors of *Electricidade de Portugal* (EDP), a leading multinational in electricity with Portuguese origin.

Salazar was able to strike a balance between his political bent toward Germans and the continuation of the old tradition of alliance with the British, dating from the Windsor Treaty (a diplomatic alliance signed between Portugal and England in 1386). However, the defeat of the Germans left the Iberian dictatorships economically isolated within Europe. The regime adopted a closed and protectionist economic approach (Matos, 1973; Martins and Guimarães, 1982), while the winds of European reconstruction, benefiting from the Marshall Plan and from European integration (with the Treaty of Rome) were dominant in Western Europe (Lopes, 1964). Paradoxically, in contrast to the "honeymoon phase" (Dunning, 1982) of European reconstruction and liberalisation of international capital movements, Portugal kept and strengthened an inward-looking stance (Matos, 1973; Simões, 1985a and 1985b).

Just before the war was over Portugal created two laws - *Lei da Electrificação* (Electrification Law) in 1944, and *Lei do Fomento Industrial* (Industrial Promotion Law) in 1945, both with the aim of industrializing Portugal. They were the result of the initiative of a modernizing group inside the regime, led by Eng. Ferreira Dias. Their impact on the Portuguese economy was modest but these two laws were important to mark a change of mindset of the prevailing regime towards industrialization.

Faced with a restrictive legal environment and national policy-making, weak basic infra-structures, low purchasing power, and short domestic market, FDI throughout the 1950s was limited: the average FDI inflow in the decade corresponded to 0.023 percent of GDP in 1958 (Simões, 1993). Location conditions also impinged upon FDI characteristics. Some 40 percent of the firms established in Portugal during that period targeted the wholesale trade activities aimed at supplying the domestic market. In manufacturing, FDI was mostly geared towards the exploitation of natural resources, metal and machinery (exploring the opportunities offered by the development of investments in infra-structures) and chemicals (industrial chemicals, fertilizers, and rubber).

The legal restrictions imposed meant that many investments were carried out through joint ventures with Portuguese companies. The level of knowledge spillovers was restricted, foreign investors' closed approaches being predominant. The technological content of that knowledge was generally low, and the lack of domestic competition, did not spawn significant technological improvements and learning initiatives.

A very successful and long-lasting joint venture which still persists, was formed in 1949 by the Anglo-Dutch multinational in consumer goods Unilever, and *Fábrica Imperial de Margarina Ltda*., later renamed *Jerónimo Martins*. It brought important technological and managerial developments from Unilever into *Jerónimo Martins*. A lot of products such as shortenings and products for industry, which had been imported until then, started to be produced locally (Unilever/*Jerónimo Martins*, 2014: 10). The spillovers took the form of knowledge sharing, as Unilever followed the general strategy of having an interactive approach with local players, introducing adjustments to fit demand preferences.[7] Local staff played an instrumental role in the process as they learned and shared knowledge through the alliance. Despite all the restrictions during this period, the 1950s created, nonetheless, the basic conditions for a process of sustained growth which took off from the 1960s (Lopes, 2004).

3.4 The 'Opening-up' phase, 1960-1974

Though this non-democratic stance of the regime was not subject to major changes, the period going from the early 1960s to 1974 is characterised, in economic terms, by increased growth rates and internationalisation of the Portuguese economy. The new phase was heralded by three decisions which provided an improved environment for FDI: (1) Portugal was one of the countries signing the Stockholm Convention, which created the European Free Trade Association (EFTA) in 1960, originally envisaged as an initiative, led by Great Britain, to countervail the creation of the Common Market; (2) the signing of the OECD Code of Liberalisation of Capital Movements, leading to a significant easing of foreign exchange controls; and (3) the launching of a new law (Decree Law 46312, of April 1965), which abolished the Capital Nationalisation Law and provided for a more favourable regime for FDI in Portugal (Lopes, 1993).

The EFTA Convention forced the Portuguese economy to become substantially more open to international transactions (Lopes, 1993: 2). Between 1961 and 1973, the average compounded annual growth rate of FDI inflows (at current prices, expressed in national currency) was around 20 percent. This is above the corresponding indicator for international FDI during the same period, which reached 12 percent (OECD, 1981). FDI growth was particularly strong in the early 1970s, a move that is related to the

[7] Interview with Alexandre Soares dos Santos, CEO, Jerónimo Martins (Lisbon, 9 August 2016).

establishment of the 1972 free trade agreement with the EEC. In general terms, the internationalisation of the Portuguese economy increased swiftly, through both trade and investment flows.

One of the biggest investments in the early 1960s was *Lisnave*. The company was created in 1961 with two Swedish partners (Eriksberg Mekaniska Verkstad and Kockums Mekaniska Verkstad), two Dutch partners (Rhine Schelde Verolme and Wilton Fejenoord) and the Portuguese business group CUF (*Companhia União Fabril*), for the construction and repair of ships used in the maritime transportation of raw materials and energy to Northern Europe, the Mediterranean, and North America. While the chair of the board was Portuguese other top management was foreign. There was knowledge sharing between the parties as a result of both an interactive approach by the foreign investors and a learning behaviour by the local partner. The initiatives carried out involved mentoring courses for professional staff, as well as discussions on management and technical know-how on ship construction and repair (Faria, 2002). However, with the re-opening of the Suez Canal after the 6-days war in the early 1970s, the increasing international competition and the nationalisation of the biggest Portuguese groups (including CUF in 1975), *Lisnave* entered into an irreversible decline.

Portugal's EFTA membership, in 1960, entailed a significant change in FDI patterns. It led to three interrelated moves (Rodrigues, Ribeiro and Fernandes, 1982; Simões, 1983): (1) the creation of export-oriented foreign firms; (2) the transfer of low-skill, labour-intensive activities in clothing industries, whose output was exported back to the home countries; (3) and the setting up of skill-intensive subsidiaries of US and EEC firms to manufacture products for the British market. This pattern was to a large extent replicated as a result of the 1972 agreement with the EEC, leading namely to a wave of German investments in clothing, footwear and assembling industries to profit from lower wages in Portugal (Rodrigues et al., 1982). An increasing number of multinational firms invested in Portugal as part of their strategies to disintegrate the value chains and re-locate the more labour-intensive parts of their production processes to low wage locations (Santos, 1977: 74; Rodrigues et al., 1982).

Portugal's presence in EFTA and the EEC agreement also attracted US investments to explore wage differentials in the context of European-wide production networks. As a result, the FDI pattern experienced deep changes, and manufacturing industries took the lead. The geography of FDI sources is interesting: although around 75 percent of FDI originated in European countries, the US (with 18 percent) was the main investor country (Simões, 1985b).

The creation of Melka provides an illustration of the foreign investments brought about by EFTA membership. This Gothenburg-based firm set up in 1961 Melka -Confecções, Ltda., at Cacém, near Lisbon, to manufacture menswear (Martins, 1976; Simões, 2004). The main purpose was to profit from lower wages. Labour was almost exclusively female, and the bulk of the output was exported to Sweden. The success of the Cacém plant led Melka to build two further plants, employing about 1100 people in 1973 (Martins, 1976). In 2003, Melka announced the closing of its manufacturing operations in Portugal which were relocated to China, East Asia and Poland (Avante, 2003). Although Melka Cacém has been able to gradually get limited sourcing autonomy, about 80 percent of the inputs were imported, mostly from headquarters (Simões, 2004). Local linkages were weak both in terms of sourcing and learning (Simões, 2004). Melka left without leaving roots in the country. This investment corresponded to a case of application (cell 1) in terms of knowledge spillovers. While the original subsidiary achieved some operational learning as time went by (Simões, 2004), an isolated, closed stance was followed, providing limited learning opportunities for domestic players due to the weakness of business and operational interactions.

Among those foreign investments addressed to the Portuguese market, *Fisipe - Fibras Sintéticas S.A.* provides an interesting case. The company was established in 1964 through a partnership between the Portuguese family firm *Francisco Fino Ltda*. (an old established worsted manufacturer) and the British chemical firm ICI - Imperial Chemical Industries, to produce synthetic fibres (polyester). A new factory was set up to produce textiles for the domestic market. ICI contribution was with technological know-how. But in spite of the involvement of Portuguese partners, available evidence (Textile Institute & Industry, 1964: 63) indicates that the type and the dynamics of the partnership led to adaptation in terms of the pattern of knowledge spillovers. There was an interactive approach followed by the foreign players, but the learning commitment of Portuguese partners was very weak, being their activities concentrated essentially on the implementation of operational issues. In terms of our framework in Table 1, this is a case of knowledge adaptation .

3.5 The ‘Post-April Revolution’ phase, 1974-1983

The fall of the dictatorship with the revolution of the 25 April 1974 led to a period of political and economic instability and a decline in FDI. The so-called Renault project, in 1980, was the main foreign investment in this phase. While inward orientated, it heralded an increased trust by international investors in the potential of Portugal as a FDI location. Interestingly, the Renault project also involved relationships between the company’s plants in Portugal and Spain (Féria, 1999).

FDI decline in the 1970s was the consequence of a combination of factors on both the international and the domestic fronts. The first increase in oil prices in the 1970s led to a crisis in Western economies, which was translated into the shrinking of international FDI flows (OECD, 1981). The problems were sharpened by the international atmosphere of mistrust between governments and MNEs, leading to a “confrontation stage” (Dunning, 1982) and to “multinationals in retreat” (Hood and Young, 1982). On the domestic front, the turmoil stemming from political change, the struggle for power that followed and the nationalisation of the main Portuguese economic groups in 1975 entailed a worsening of the investment climate. Although FDI was not affected by nationalisations, foreign investors’ perceptions about Portugal as an investment location worsened (Simões, 1985a).

Large Portuguese economic groups which had partnerships with foreign firms were nationalised, affecting the governance of the investments in Portugal. An example is *Sitenor*, created in 1962 as a joint venture between Ludlow Corporation (USA) and the business group CUF, to produce jute and sisal. The characteristics of the venture favoured adaptation through knowledge spillovers, with an interactive approach by the foreign multinational and implementation by the local partner. With the nationalisation of *CUF* in 1977, the shares were passed to *Quimigal E.P.*, a newly created firm, resulting from the nationalisation of several Portuguese firms (part of the economic group *CUF*, *Amoníaco Português e Nitratos de Portugal*). This generated significant tensions between the new and old shareholders in this joint venture. In 1982 Ludlow abandoned the board of *Sitenor*, after having unsuccessfully attempted to sell its shares (*Diário da Assembleia da República*, 1986).

In 1976 legislation was published to establish a new legal regime for inward FDI or a Foreign Investment Code (Decree-Law 236/76). This was short-lived, since it was still very much influenced by the leftist and anti-business mood of 1975. In the following year a new Code was issued (Decree-Law 348/77). Though still influenced by the *zeitgeist*, the new Code took a more pro-business stance, and established a new organisation (called Foreign Investment Institute) in charge of, somewhat paradoxically, promoting and controlling FDI inflows. In practice, however, promotion became dominant (Simões, 1993; Silva, 2016). It was recognized that FDI might play an important role in leveraging the Portuguese economy.

The Renault project, initiated in 1980, aimed at setting up new manufacturing automotive facilities in Portugal, including the production of castings (Funfrap), engines and gear boxes and car assembling with a capacity of 80 thousand cars per year (Guerra, 1990; Simões, 2003). The Portuguese government intended to modernise the automotive industry, replacing the low value-added assembly lines by a policy of manufacturing automotive components and car parts (Guerra, 1990; Féria, 1999) and approached Renault and Peugeot-Citröen. The Renault proposal was chosen, since it had a higher industrialisation content (Guerra, 1990). Renault was attracted by the privileged access to the Portuguese market and generous investment incentives (Simões, 2000 and 2003). Furthermore, the operations in Portugal might be combined with those in Spain, where the company had since 1964 a manufacturing subsidiary (Fernández-de-Sevilla, 2016). For instance, Renault had no stamping presses in Portugal, and stamping work was carried out in Valladolid, at the FASA plant (Féria, 1999).[8] Portuguese authorities expected the investment to establish a modern automotive system, directly as a result of the investments by Renault and indirectly, through the automotive components industry, since the investment contract defined local value-added objectives. Though involving an export component, the project was only possible in a context of domestic market protection (MIE, 1991).[9]

This project was a key step in enabling the development of a modern automotive components manufacturing industry in Portugal (Schmidt and Almeida, 1987). In terms

[8] It is interesting to remark, in this context, that the main stockholder of Indústrias Lusitanas Renault, the former Renault assembly line in Portugal, was FASA, which held the production licences for the Renault 4CV (Fernández-de-Sevilla, 2016).

[9] Interview with Vístulo de Abreu, Chairman of the Board of Directors of Renault Portugal (Lisbon, 10 January 2000).

of our framework illustrated in Table 1, Renault's approach was interactive, and open to support the development of Portuguese firms' capabilities. Those which adopted a learning approach were able to significantly upgrade their capabilities, some of which became international suppliers to Renault; in contrast, those which followed an implementation perspective did not meet the increasing requirements from Renault over time, entering a declining path.

As a result of the gradual improvement in investment climate, the levels of FDI inflows recovered in 1978-80, exceeding the average recorded for 1972-74: 64 versus 51 million USD per year. The FDI pattern in this phase was substantially different before and after 1978. Between 1974 and 1977, FDI was dominated by wholesale trade and trading activities, to take profit from the significant increases in domestic demand. From 1978 onwards, there was a return to investments in labour-intensive activities. However, there has been a change in the type of activities carried out, with the automotive sector taking the lead, instead of electronics. Other significant investments took place in natural resource exploitation, namely paper pulp and copper mining (Simões, 1992 and 1993).

3.6 From the prospects for European Economic Community entry to the Euro, 1984 – 1999

While Portugal's entry into the European Economic Community (EEC) in 1986 was an important move for FDI in Portugal, this date is the beginning of a new phase. In fact, entry prospects influenced investors' behaviour, especially after the decision to conclude the negotiation regarding Portugal's (and Spain's) accession by September 1984. The entry of the two countries together in the EEC, and the use of European funds to promote investments, created further conditions for MNEs to invest, especially by integrating their Portuguese operations in the context of both Iberian and European supply chains (Simões, 1992; Fernández-de-Sevilla, 2016). Therefore, we take this year as the initial reference; the end of this phase is 1999, when Portugal adopted the Euro.

The Portuguese economy witnessed during this period, the strongest expansion since 1974 (Lopes, 1992: 129), partly spurred by the infrastructural investments and the new business opportunities opened by the availability of EEC structural funds. But the profile of FDI in Portugal in the late 1980s was also shaped by external forces, related to the following aspects: reduction in internationally mobile investments, leading to increased inter-country competition to attract investments; growing relevance of technology considerations in the design of MNEs' strategies; and surge in mergers and acquisitions in the context of oligopolistic competition (Simões, 1992; Cantwell and Sanna-Randaccio, 1992).

FDI was mainly addressed to the financial sector, followed by manufacturing industries, such as transportation equipment, machinery, chemical products, food industry, non-metallic minerals, and clothing and footwear (Saraiva, 1993). Portugal's EEC entry influenced FDI moves both *ex-ante* and *ex-post*. *Ex-ante*, many firms, namely in the automotive components industry, selected Portugal as an investment location for labour-intensive activities in the context of automotive industry's Iberian and European networks. *Ex-post*, these movements were strengthened, namely with investments by Ford (car radios) and General Motors (ignition systems). Between 1986 and 1989, more than 40 percent of manufacturing FDI in Portugal was undertaken in affiliates playing an 'integrated manufacturer' role (Simões, 1992). Therefore, Portugal's entry into the EEC led to an upsurge in manufacturing FDI, export-orientated investments dominating the scene.[10] Regional integration has also encouraged investments in resource-based industries such as the purchase by Wiggins Teape of a share in Soporcel, a Portuguese pulp and paper firm (Simões, 1992). Simultaneously, there were investments addressed to exploit the growth in domestic demand (for instance by Italian white goods firms such as Indesit) and in services (banking, tourism and real estate operations). The decline in perceived risk and the opportunities for corporate networking at European level also led to the replacement of earlier licensing relationships by FDIs, as was the case of the acquisition of *Vulcano*, a Portuguese water heaters manufacturer, by Robert Bosch.

In terms of the knowledge spillovers framework, this provides a very interesting example of knowledge sharing. During the licensing relationship with Robert Bosch, *Vulcano* showed a strong commitment to learning, expressed namely in the setting up of

---

[10] Gonçalves and Guimarães (1997), while acknowledging the growth in FDI inflow, have not identified a corresponding effect on foreign investments' employment share. According to their findings, such share has remained relatively stable, around 11 to 13 percent, between 1982 and 1991, with a decline in 1992. This is a surprising finding. However, Simões (1993) who used the same employment database suggests that it suffered from several discrepancies and inappropriate responses to the question about the presence of foreign capital, thereby leading to an undervaluation of the weight of foreign subsidiaries.

a product development unit and in a sophisticated cost based strategy (Monitor Company, 1994), following the adoption of the Toyota management style in the process of water heaters production (Sousa, 1997; Simões and Santos, 2015). The acquisition by Robert Bosch further contributed to foster *Vulcano's* capabilities. In fact, Robert Bosch closed the water heaters plant in Germany, and concentrated the manufacturing of these products in Portugal. The interaction between operational efficiency, German organisation and Portuguese creativity enabled *Vulcano* (meanwhile renamed *Bosch Termotecnologia*) to become the Domestic Water Heating Worldwide Centre of Competence of the Robert Bosch group (Simões and Santos, 2015).

The most relevant expression of these developments is the establishment of *AutoEuropa* in 1991. Created as a joint venture between Ford and Volkswagen, it was aimed at manufacturing and exporting multi-purpose vehicles, a new type of car pioneered by Chrysler and Renault. The cars were produced under three different brands, in line with the partners' interests (Féria, 1999; Simões, 2003; Vale, 1999). While being significantly financed by European funds, it corresponded to a quantum leap in the technological content and sophistication of Portugal's automotive industry. *AutoEuropa*, now fully owned by Volkswagen, enabled the establishment of a set of suppliers (mainly foreign-owned, including joint ventures with Portuguese firms) close to the plant. Being fully export-orientated, it provided a boost to Portugal's exports,[11] and has been consistently in the top-three Portuguese exporters (*Diário Económico*, 2012, 2013).

In terms of the knowledge spillovers framework developed as a result of this study (Table 1), *AutoEuropa* is an example of knowledge sharing. In spite of being *prima facie* a manufacturing plant, with limited R&D functions (these are concentrated in Germany) and no marketing responsibility, *AutoEuropa* follows an interactive approach, with close interactions with suppliers. There is a common learning concern, especially regarding operational efficiency. The extent of the supply by Portuguese firms has been limited, due to three main factors: the significant size of orders (especially in the initial phase); the limited autonomy of *AutoEuropa*; and some distrust of Volkswagen towards the product engineering and development capabilities of Portuguese suppliers (Veloso et al., 2000). The most successful suppliers are those

[11] It should be acknowledged that the level of imports is also high.

which have set up engineering facilities in Germany. As a supplier put it: "is not so much development capabilities, but rather being close to headquarters and speaking the German language".[12]

Paradoxically, the *AutoEuropa* investment also corresponds to the zenith of FDI in Portugal. In fact, 1990 records the highest level of FDI since the existence of reliable FDI statistics. Since then, FDI inflows experienced a continuous declining trend until 1999 (Mateus, 2001; Silva, 2006). The reasons for this decline stem from a host of factors, both internal and external. Internally, there was an increase in labour costs which to some extent offset increased investment incentives based on European funds. External factors are related to the changes that occurred in Europe. As a result of the fall of the Berlin Wall, improved investment prospects were opened in several countries of the former Soviet bloc. In particular, German firms became increasingly East-bound in terms of market exploitation and supply chain location. For Portugal, the consequence was a drying up of inward FDI including even the divestment from more labour-intensive and wage-sensitive activities, such as cables and wires, clothing or footwear (Freitas, 1998; Mata and Portugal, 2000; Simões, 2004; Thiel, Pires and Dudleston, 2000).

3.7 Inside the Eurozone , 1999- 2016

Portugal's presence in the Eurozone did not lead to a significant revival of FDI inflow. After an increase in FDI inflow in 2000 and 2001, Portugal's attractiveness declined. Throughout the 2000s, inward FDI was characterised by a volatile behaviour, with clear signs of stagnation; consistently below the 3 billion Euros level, with the exceptions of 2003 and 2006 (Simões and Cartaxo, 2013).

The 2010s where characterised by an upsurge in FDI, due to a privatisation wave. In the context of the Memorandum of Understanding, signed in 2011with the European Commission, the European Central Bank and the International Monetary Fund, to respond to Portugal's financing difficulties, the Portuguese government privatised several companies (in energy, insurance, and airports management). While leading to an increase in FDI, this was a one-off initiative, which has not generated a significant

[12] Interview with the CEO of Gametal, a supplier company of Renault (Cucujãens, 10 March 2000).

change in Portugal's attractiveness for greenfield investments. Two of the most important investors were from China. In fact, China Three Gorges took a share of 21.4 per cent of *Electricidade de Portugal* (EDP), the main electrical power company in Portugal, while State Grid acquired 25 per cent of *Redes Energéticas Nacionais* (REN), the owner of the power grid infrastructure. According to recent research on Chinese investments in Europe, Portugal is ranked fifth in the attraction of Chinese investments, with 5,527 million Euros during the 2000-2015 period (Hanemann and Huotari, 2016).

Portugal's relatively weak attractiveness during the first fifteen years of the twenty first century cannot be disentangled from the general problems faced by the European economy. In fact, the European Union (EU) as a whole has exhibited low economic growth rates, being unable to keep its share in World FDI flows (UNCTAD, 2015). Low demand and an ageing population as well as the sovereign debt crisis have seriously constrained European growth. Furthermore, FDI has turned more towards services, and less towards manufacturing.[13] Other areas, especially East and South East Asia, have shown a stronger dynamics thereby attracting increasing FDI flows. Between 2012 and 2014, East and South East Asia increased its share in total FDI flows from 23 to 31 per cent, while Europe's declined from 29 to 24 per cent (UNCTAD, 2015). International investment prospects for 2014-2016 suggest that the Asian bound trend will be pursued, China, Indonesia and India being among the top-5 prospective locations (UNCTAD, 2014).

FDI in Portugal during this period was mostly concentrated in services. Available information indicates that between 2000 and 2009 manufacturing corresponded to just 3 percent of total FDI. Real estate and finance concentrated around 70 and 22 percent of total FDI in 2000-9, respectively (Simões and Cartaxo, 2013). The main investment in manufacturing was undertaken by Embraer, the Brazilian aircraft company. Embraer entered Portugal through the partial acquisition of OGMA (a public aircraft maintenance company), and later built two aircraft components plants in Évora, in the South of the country, as well an R&D centre in Northern Portugal. One of the plants is focused on metal parts while the other has to do with composite materials. Production was launched in 2012 (AICEP, 2016).

[13] This has generated concerns in public opinion, and has led the European Commission to launch efforts (so far unsuccessful) aimed at fostering investment in manufacturing.

A very interesting example of FDI in services is provided by Siemens, the well-known German multinational company. Although its first investment in Portugal dates from 1905 (*Companhia Portuguesa de Electricidade Siemens*), there has been since the late 1990s a significant change in Siemens Portugal, when a Portuguese chief executive was nominated to manage the subsidiary. By investing in specialised services and exploring partnership opportunities in Portugal, and also by creating its own "eco-system", Siemens Portugal developed new capabilities (Picoito, 2005). This approach was based on two main considerations: the lower labour costs in comparison to Germany; and Portuguese skilled labour capabilities, namely in terms of creativity and work commitment. The Shared Accounting Service Centre was the first worldwide centre of competence to be located in Portugal, in 2005. This was followed in 2008 by the centres on engineering services for command, control and protection of infrastructures for intelligent electric power grids and tools and on control of electrical power plants (*Siemens Portugal*, 2015; Guerreiro 2014; *Jornal de Negócios*, 2014). In 2015, four new centres of competence were assigned to the Portuguese subsidiary (Micro Grids and Energy Storage, Renewable Energy, E-Mobility (eBus) and Cyber Defense), totaling 18 such centres (*Siemens Portugal*, 2016).

Siemens Portugal's recent investment in the area of services may be classified as knowledge sharing, in terms of the knowledge and technology spillovers framework (see Table 1). In fact, especially in the last 20 years Siemens Portugal has adopted an interactive approach, developing multiple linkages with the domestic economic and educational fabric, including other firms, universities and research centres. The subsidiary participated in the creation of the ATEC-Training Centre (Guerreiro, 2014), and established partnerships with several universities in Portugal (*Canal Superior*, 2014; *Siemens Portugal*, 2016), such as the University of Aveiro (in which a Siemens chair was created) and the Leiria Polytechnic (specialised education in the fields of automation and software). It has attracted a host of highly skilled people, some of whom assimilated technological and organisational know-how, which has been used in the development of their careers and in the launching of new business initiatives. This case shows how a stronger embeddedness in the local context may enhance the subsidiary's influence (and recognition) in the corporate environment.

Investments related to privatisations, especially those undertaken by Chinese companies or funds, seem to have been mainly motivated by profiting from incumbent positions and managerial learning. Although evidence is still very limited, this suggests that the contribution towards structural change and interaction with domestic companies is likely to be limited. There were however positive developments, related to the attraction of R&D activities by MNEs and especially the innovation initiatives by Portuguese subsidiaries, leading to the setting up of centres of excellence in Portugal, of which the case of Siemens, reported above, is a key example.

3.8 Patterns of FDI Knowledge Spillovers

A summary of the cases studied above is presented on Table 2. This table enables the identification of patterns of evolution of FDI knowledge spillovers in Portugal over a period of three hundred years.

Table 2 – Examples of Patterns of FDI Spillovers in Portugal, 1707-2016

Local Player Foreign Player	Implementing	Learning
Closed approach	**I** 2a. Railways - Portuguese Colonies (eg. Benguela Railway Company) 4c. Clothing (eg. Melka) **Knowledge Application**	**II** 2b. Railways - Mainland (eg. Real Companhia dos Caminhos de Ferro Portugueses) 3a. Chemicals (eg. Solvay) 3c. Electricity (eg. Sofina) **Knowledge Replication**
Interactive approach	**III** 4b. Textiles (eg. Finicisa) **Knowledge Adaptation**	**IV** 1. Port wine (eg. Sandeman) 3b. Food (eg. Jerónimo Martins) 4a. Ship building and repair (eg. Lisnave) 5. Automotive (eg. Renault) 6a. Domestic Appliances (eg. Bosch/Vulcano) 6b. Automotive (eg. AutoEuropa) 7. Electronics (eg. Siemens) **Knowledge Sharing**

Source: The authors

Taking a long-term perspective, it may be argued that overall the relationship between FDI and Portuguese business and human resources has evolved in stages: from more close and implementation based approaches, to more interactive and learning approaches. Table 2 suggests that there was a progressive move from approaches associated with cell I (knowledge application), towards cell II (knowledge replication), followed by cell III (knowledge adaptation), and finally cell IV (knowledge sharing). The cases that are exceptions, seem to follow patterns ahead of their times in terms of knowledge spillovers (and cells in Table 2 where they fit). They tend to be associated with industries which develop national clusters and industries where Portugal gained international competitiveness. Examples include Sandeman & Co in port wine, and Jerónimo Martins in food and distribution.

4. FDI and Knowledge Spillovers in Portugal: Answering the Research Questions

This paper addresses two main questions connected with José da Silva Lopes' thinking about the contribution of FDI to the long-term upgrading and development of an economy: can historical evidence provide new insights about different patterns of knowledge spillovers in foreign direct investment? What is the impact of knowledge spillovers on the firms' long-term capabilities, industry competitiveness, and economic development in Portugal? Portugal provides an interesting case of a small, country in the periphery of Europe which has historically stayed outside the industrialization of Europe.

Taking a long-term historical perspective this study identifies the main FDI patterns into Portugal over a period of three hundred years - since the signing of the Methuen Treaty until the present day. This period was divided in several phases according, with start and end dates marked by important shifts in the macroeconomic environment. A sample with the most significant investments for each phase was then selected. Each case of inward foreign direct investment was analysed in detail with the use of archives, interviews when possible, and multiple secondary sources, and general patterns of knowledge spillovers towards the Portuguese economy were identified. Taking into account a criteria associated with ability by the foreign partner to create knowledge and to absorb that knowledge by the local players, a framework was developed.

Multinational firms that followed closed approaches tended to be opportunistic in their motivations to invest in Portugal and to follow short-term approaches, having a very limited impact on long-term economic development. For example, British investment in railways in the 1850s and 1860s played a very limited role in building the Portuguese productive capacity. It was also associated with high levels of speculation and corruption (Vieira, 1988; Reis, 1993: 129). In contrast, French investments in railways in mainland Portugal, provided both the capital and the loans, and also the engineering skills, leading to more significant knowledge spillovers. During this period, even Portuguese engineers, received their training in France (Matos and Diogo, 2003). Several large investments aimed at profiting from wage differences and were short-term orientated. In most cases, they contributed to significant knowledge spillovers.

Our historical analysis has made clear that FDI has, in general, played a positive role in contributing towards structural change in Portugal as well as to the enhancement of Portuguese firms' capabilities, and the development of industries. In spite of the fact that most subsidiaries' equity is majority-owned by foreign investors, FDI has generated positive effects in terms of the introduction of new activities, the skills of the labour force, and the learning by Portuguese businessmen, and Portuguese companies. The cases that were ahead of their times were mainly those the local players had an active role in the alliances or networks associated with alliance formation. These findings are particular relevant for economies such as Portugal which have stood in the periphery of Europe over most of the period of analysis, and therefore with higher possibilities of obtaining gains from knowledge spillovers associated with foreign investments. They also confirm the idea of a co-evolution between MNEs' operation characteristics and host country economic and institutional environment (Cantwell, Dunning and Lundan, 2010; Cano-Kollmann et al., 2016).

It is also possible to identify a strong influence of the European environment and of regulation in shaping the characteristics of FDI inflows in Portugal. The main sources of investment have historically been European countries. Portugal's attractiveness has been influenced by the trends in the overall European context. This is particularly clear during the years subsequent to the Methuen Treaty in 1703 and until the early twentieth century when Britain was a major investor in Portugal; during the 1960s and early 1970s with the policies that aimed at opening the economy for foreign investment which attracted European investors from several countries; and also as a result of Portugal's entry in the EEC. In contrast, the World Wars, which greatly impacted on most countries in Europe, and the opening up of the Eastern bloc also in the early 1990s had a negative effect on FDI inflow in Portugal.

Overall, the impact of FDI on the Portuguese economy was positive in the long-term. It helped to modernize the Portuguese society. It led to structural change, improved human resources skills, and developed clusters in industries such as wine and automotive, and shared software development services. Departing from José da Silva Lopes concerns and work (1964, 2001) on the impact on the Portuguese economic of knowledge spillovers associated with inward foreign direct investment, this study proposes a new framework, to help researchers to refine that analysis, and in particular identify precisely the impact of FDI knowledge spillovers in countries over the long-run. This stages approach shows that in countries such as Portugal, despite attracting foreign investments that follow closed approaches in their early stages of hosting foreign investments, these investments tend to enable and often evolve into more interactive approaches, increasing the learning by local players; and the ability to develop regional or national clusters, and international competitiveness.

References

Abreu, Vístulo de (2000), Personal Communications with one of the authors, March and May.

AICEP (2016), "Investir em Portugal – Casos de Sucesso: Embraer' (http://www.portugalglobal.pt/PT/InvestirPortugal/CasosSucesso/Paginas/Embraer.aspx, accessed on 9 October 2016).

Aitken, Brian J. and Ann E. Harrison (1999), 'Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela', *American Economic Review* 89: 605- 618.

Alcácer, Juan, John Cantwell, and Lucia Piscitello (2016). Internationalization in the information age: A new era for places, firms, and international business networks?. *Journal of International Business Studies*, 47 (5): 499-512.

Allen, H. Warner (1952), *Sherry and Port*. London: Constable.

Andersson, Ulf, Peter J. Buckley, and Henrik Dellestrand (2015). In the Right Place at the Right Time!: The Influence of Knowledge Governance Tools on Knowledge Transfer and Utilization in MNEs. *Global Strategy Journal*, 5 (1): 27-47.

Argote, Linda and Paul Ingram (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational behavior and human decision processes*, 82(1): 150-169.

Arrow, K.J. (1962), 'The Economic Implications of Learning by Doing', *Review of Economic Studies* 29: 155-73.

Avante (2003). Mais uma Deslocalização no Dector Têxtil: Melka Abandona Portugal. 13 November 2003 (available at http://www.avante.pt/pt/1563/trabalhadores/2961/, accessed 22 June 2016).

Azevedo, J. Lúcio de (1947), *Épocas de Portugal Económico - Esboços de História*. Lisboa: Livraria Classica.

Baranson, Jack, and Robin Roark (1985), 'Trends in North-South Transfer of Heigh Technology', *in* Nathan Rosenberg and Claudio Frischtak, eds., *International Technology Transfer: Concepts, Measures and Comparisons*, Nova Iorque: Praeger: 24-42.

Bartlett, Christopher A., and Sumantra Ghoshal (1989). *Managing Across Borders: The Transnational Solution*. Harvard Business School Press,:Boston, MA.

Benguela Railway Company (1929), *A Brief History of the Benguela Railway*, Princes House: Hudson & Kearns Litho

Bennett, Norman R. (1995), 'Port Wine Merchants: Sandeman in Port, 1813-1831", *Journal of European Economic History* 24 (2, Fall): 239-269.

Bertrams, Kenneth, Nicolas Coupainm and Ernst Homburg (2013), *Solvay – History of a Multinational Family Firm*. Cambridge: Cambridge University Press.

Black, Jeremy (1987), 'British Foreign Policy in the Eighteenth Century: A Survey", *Journal of British Studies* 26 (1): 26-53.

Blalock, Garrick, and Daniel H. Simon (2009). Do all firms benefit equally from downstream FDI? The moderating effect of local suppliers' capabilities on productivity gains. *Journal of International Business Studies*, 40 (7): 1095-1112.

Blomström, M., and F. Sjoholm (1999), 'Technology Transfer and Spillover Efficiency in an Underdeveloped Economy: Evidence from the Mexican Manufacturing Industry', *World Development* 11: 493-501.

Bradford, Sarah (1992), *The Birth of Port – In A Celebration of Taylor's Port: Published to mark the 300th Anniversary of the Foundation of the House of Taylor, Fladgate & Yeatman*, in Christopher Foulkes (ed.). London Michell Beazley.

Brito, José Maria Brandão de (1989), *Industrialização Portuguesa no Pós-Guerra (1948-1965): O Condicionamento Industrial*. Lisboa: Dom Quixote.

Brown, John Seely, and Paul Duguid (2001), 'Knowledge and Organization: A Social-Practice Perspective', *Organization Science*, 12 (2): 198 – 213.

Buckley, Peter J., and Mark Casson (1976), *The Future of Multinational Enterprise*, London: Macmillan.

Bukowitz, Wendy R. and Ruth L. Williams (1999), *The Knowledge Management Fieldbook*, Upper Saddle River, NJ: Financial Times, Prentice Hall.

Canal Superior (2014), 'Siemens Vai Criar Academias de Formação em Parceria com IP Leiria, 2 May (available at http://informacao.canalsuperior.pt/noticia/17740, accessed on 29 June 2016).

Cano-Kollmann, Marcelo, Cantwell, John, Hannigan, Thomas J., Mudambi, Ram, and Song, Jaeyong (2016). Knowledge connectivity: An agenda for innovation research in international business. *Journal of International Business Studies*, 47(3), 255–262.

Cantwell, John (1987), 'The Reorganization of European Industries after Integration: Select Evidence on the Role of Multinational Enterprise Activities', *Journal of Common Market Studies*, 26(2): 127-52.

Cantwell, John (1989), *Technological Innovation and Multinational Corporations*, Oxford: Basil Blackwell.

Cantwell, John, and Francesca Sanna-Randaccio (1992), 'Intra-Industry Direct Investment in the European Community: Oligopolistic Rivalry and Technological Competition', in John

Cantwell, ed., *Multinational Investment in Modern Europe: Strategic Interaction in the Integrated Community*, Aldershot: Edward Elgar: 71-106.

Cantwell, John and Ram Mudambi (2005). MNE competence□creating subsidiary mandates. *Strategic Management Journal*, 26(12): 1109-1128.

Cantwell, John, John H. Dunning and Sarianna M. Lundan (2010), 'An Evolutionary Approach to Understanding International Business Activity: The co-evolution of MNEs and the Institutional Environment', *Journal of International Business Studies*, (41) 4: 567–586.

Cantwell, John, and Roger Smeets (2013), 'FDI motives and host country productivity effects of US MNEs', in Filip De Beule and Ysabel Nauwelaerts, eds., *Innovation and creativity: Pillars of the Future Global Economy*, Cheltenham: Edward Elgar: 173-195.

Cantwell, John, and Lucia Piscitello (2015). New competence creation in multinational company subunits: The role of international knowledge. *The World Economy*, 38 (2): 231-254.

Caraça, João M. G. and Vítor Corado Simões (1995), 'The New Economy and Its Implications for International Organizations', in Roberto Schiattarella, ed., New Challenges for European and International Business, Urbino: Confindustria: 257-282.

Carlile, Paul R. (2004). Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organization Science*, 15(5: 555-568.

Confraria, João (1992), *Condicionamento Industrial: Uma Análise Económica*. Lisboa: Direcção Geral da Indústria.

Cortez, Fernando Russel (1951), As Escavações Arqueológicas do Castellum da Fonte do Milho. Porto: Instituto do Vinho do Porto.

Costa, Jorge, Luis Fazenda, Cecília Honorio, Francisco Louça, and Fernando Rosas, *Os Donos de Portugal – Cem Anos de Poder Económico* (1910-2010). Porto: Edições Afrontamento.

Crespo, N., and M. P. Fontoura (2007) 'Determinant Factors of FDI Spillovers – What Do We Really Know?', *World Development*, 35(3): 410-425.

Crespo, N., M. P. Fontoura and I. Proença (2009), 'FDI Spillovers at Regional Level: Evidence from Portugal', *Papers in Regional Science*, 88(3): 591-607.

Dellestrand, Henrik, and Philip Kappen (2012). The effects of spatial and contextual factors on headquarters resource allocation to MNE subsidiaries. *Journal of International Business Studies*, 43 (3): 219-243.

Dhanaraj, Charles, Marjorie A. Lyles, H. Kevin Steensma and Laszlo Tihanyi, L. (2004). Managing tacit and explicit knowledge transfer in IJVs: the role of relational embeddedness and the impact on performance. *Journal of International Business Studies*, 35(5): 428-442.

Diário Económico (2012), 'As Dez Empresas que mais Vendem para fora de Portugal', *Diário Económico*, 26 August.

Diário Económico (2013), *As Maiores Exportadoras: As 100 líderes na Exportação*, *Diário Económico*, 18 December.

Driffield, N., J. H. Love and S. Menghinello (2010), 'The Multinational Enterprise as a Source of International Knowledge Flows: Direct Evidence from Italy', *Journal of International Business Studies*, 41 (2): 350-359.

Duguid, Paul, and Teresa da Silva Lopes (1999), 'Ambiguous Company: Institutions and Organizations in the Port Wine Trade, 1814-1834', *Scandinavian Economic History Review*, 47 (1): 84-102.

Dunning, John H. (1979), 'Explaining Changing Patterns of International Prodution: In defense of the Eclectic Theory.' *Oxford Bulletin of Economics and Statistics*, 41 (4), pp. 269-295.

Dunning, John H. (1982), 'International Business in a Changing World Climate', *Banca Nazionale del Lavoro Quarterly Review*, 143.

Dunning, John H. (1988), 'The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions', *Journal of International Business Studies*, 19 (1): 1-31.

Dunning, John H. (1993), *Multinational Enterprises and the Global Economy*, Wokingham: Addison-Wesley.

John H. Dunning (1995), Reappraising the eclectic paradigm in an age of alliance capitalism. *Journal of International Business Studies*, 26 (3): 461-491.

Easterby□Smith, Mark, Lyles, Marjorie A., & Tsang, Eric W. (2008). Inter□organizational knowledge transfer: Current themes and future prospects. *Journal of Management Studies*, 45(4): 677-690.

Grossman, Gene M., and Elhanan Helpman (1990), 'Trade, Knowledge Spillovers, and Growth', *European Economic Review* 35 (2-3): 517-526.

Esteves, Emmanuel (2000), 'O Caminho de Ferro de Benguela e o Impacto Economico, Social e Cultural na sua Zona de Influencia, 1902-1952', *Africana Studia* 3: 49-72.

Faria, M. F. de (2001), Lisnave – Contributos para a História da Indústria Naval em Portugal. Lisboa: Edições Inapa.

Féria, Luís Palma (1999), A História do Sector Automóvel em Portugal (1895-1995), Lisboa: GEPE, Working Paper DT19-99.

Fernández-de-Sevilla, Tomàs (2016). International Business in Southern Europe: Renault in Italy, Portugal and Spain (1908-2007). *Journal of Evolutionary Studies in Business*, 2 (1): 129-155.

Fisher, H.E.S. (1971), *The Portugal Trade*. London: Methuen & Co. Ltd.

Fonseca, Álvaro Baltasar Moreira da; Fernando Galhano, e E. Serpa Pimentel e J. António Rosas (1981), *O Vinho do Porto. Notas sobre a sua História, Produção e Tecnologia*. Porto: Instituto do Vinho do Porto.

Francis, A. D. (1972), *The Methuen's and Portugal 1691-1708*. Cambridge: Cambridge University Press.

Freitas, João Abel (1998), *Determinantes do Desinvestimento em Portugal*, Working Papers, Lisboa: GEPE/Ministério da Economia.

Gonçalves, Octávio M. D. F., , and Paulo de Freitas Guimarães (1997), 'O Investimento Directo Estrangeiro na indústria Transformadora Portuguesa: Uma abordagem sectorial e regional através do Emprego para o período 1982-1992, *Estudos de Economia*, XVI-XVII (3): 333-358.

Görg, H., and D. Greenaway (2004), 'Much Ado About Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?', *World Bank Research Observer*, 19 (2): 171-97.

Guerra, António Castro (1990), *Formas e Determinantes do Envolvimento Externo das Empresas: Internacionalização da Indústria Automóvel e Integração da Indústria Portuguesa na Indústria Automóvel Mundial*, Doctoral dissertation, Lisboa: ISEG.

Guerreiro, Miguel (2014), 'Estudo de Caso: Desenvolvimento de centros de Competências em Portugal- A experiência Siemens', *Ingenium*, Set.-Out.: 52-54

Gupta, Anil K., and Vijay Govindarajan (1994). Organizing for knowledge flows within MNCs. *International Business Review*, 3 (4): 443-457.

Gupta, Anil K., and Vijay Govindarajan (2000) Knowledge flows within multinational corporations. Strategic Management Journal, 21: 473-496.

Hanemann, Thilo and Mikko Huotari (2016), A New Record Year for Chinese Outbound Investment in Europe, Berlin: Mercator Institute for China Studies/ Rhodium Group.

Hennart, Jean-François (2009), 'Down with MNE-Centric Theories! Market entry and Expansion as the Bundling of MNE and Local Assets', *Journal of International Business Studies*, 40: 1432–1454.

Hood, Neil and Stephen Young (1982), *Multinationals in retreat: The Scottish experience*, Edinburgh: Edinburgh University Press.

Hymer, Stephen (1960/1976), *The International Operations of National Firms*. Cambridge MA: MIT Press.

Inkpen, Andrew C., and Mary M. Crossan. Believing is seeing: Joint ventures and organization learning. *Journal of Management Studies*, 32(5): 595-618.

Javorcik, B. S., and Spatareanu, M. (2005). Disentangling FDI spillover effects: what do firm perceptions tell us?. In T. H. Moran, E. M. Graham and M. Blomströmeds., *Does foreign direct investment promote development*?, Washington D.C.: Institute for International Economics, Center for Global Development, 45-72.

Jones, Geoffrey (2005), *Multinationals and Global Capitalism*. Oxford: Oxford University Press.

Jones, Geoffrey (2013), *Entrepreneurship and Multinationals* – Global Business and the Making of the Modern World. Cheltenham: Edward Elgar.

Jones, Geoffrey (2014), 'Firms and Global Capitalism', in Larry Neal and Jeffrey G. Williamson (eds), *The Cambridge History of Capitalism*. Cambridge Mass.: Cambridge University Press.

Jones, Geoffrey (2015), 'Editor's Introduction', Special Issue of Global Business. Business History Review 89 (3): 403-403.

Jornal de Negócios (2014). 'Portugal já é um Centro de Serviços Tecnológicos?', (available at http://www.jornaldenegocios.pt/empresas/tecnologias/detalhe/portugal_ganha_terreno_para_captar_mais_investimento_estrangeiro.html, accessed on 29 June 2016).

Khan, Zaheer, Yong Kyu Lew, and Rudolf R. Sinkovics (2015). International joint ventures as boundary spanners: technological knowledge transfer in an emerging economy. *Global Strategy Journal* 5 (1): 48-68.

Kogut, Bruce, and Udo Zander (1992), 'Knowledge of the Firm, Combinative Capabilities and the Replication of Knowledge', *Organization Science*, 3(3): 383-397.

Krugman, Paul R. (1991), *Geography and Trade*, Cambridge MA: MIT Press.

Lains, Pedro (2008), The Power of Peripheral Governments: Coping with the 1891 Financial Crisis in Portugal, *Historical Research* 81 (213): 485-506.

Lains, Pedro, and Alvaro Ferreira da Silva (eds.) (2005), *História Económica de Portugal, 1700-2000*. Lisboa: Imprensa de Ciências Sociais.

Lane, Peter J., Jane Salk, and Marjorie Lyles (2001). Absorptive capacity, learning, and performance in international joint ventures. *Strategic Management Journal*, 22(12): 1139-1161.

Lopes, José da Silva (1964), 'A Integração Europeia" Implicações em Portugal', *Análise Social* 2 (7/8): 780-801.

Lopes, José da Silva (1969), *Tendências e Perspectivas de Exportação Portuguesa para o Estrangeiro*. Lisboa: Fundo de Fomento de Exportação.

Lopes, José da Silva (1992), 'A Política Económica Portuguesa: Evolução Recente e Perspectivas', in E. de Sousa Ferreira and M. Villaverde Cabral (eds.), *Portuguese Studies in International Perspective*. Lisboa: CEDEP.

Lopes, José da Silva (2000), 'A Economia Portuguesa no Século XX', in Fernando Pernes (ed.), *Século XX: Panorama da Cultura Portuguesa*, Porto: Afrontamento e Fundação Serralves: 269-323.

Lopes, José da Silva (2001), 'A União Económica e Monetária e os Salários. Trabalho e Relações Laborais', *Cadernos Sociedade e Trabalho* no.1.

Lopes, José da Silva (ed.) (1993), Portugal and EC Membership Evaluated.Pinter Publishers: London.Lopes, José da Silva (1996), *A Economia Portuguesa desde 1960*, Lisboa: Gradiva.

Lopes, José da Silva (1969), 'Tendências e Perspectivas da Exportação Portuguesa para o Estrangeiro", in Colóquio - Ao Serviço da Exportação, Lisboa: Fundo Fomento de Exportação, no. 44.

Lopes, Teresa da Silva (1999), *Internacionalização e Concentração no Vinho do Porto, 1945-1995*. Lisboa: ICEP/GEHVID.

Lopes, Teresa da Silva (2001), 'A Evolução das Estruturas Internacionais de Comercialização de Vinho do Porto no Século XX', *Revista de História Económica e Social*, 2(1): 91-132.

Lopes, Teresa da Silva (2005), 'Competing with Multinationals: Strategies of the Portuguese Alcohol Industry', *Business History Review*, 79 (Autumn): 559-585.

Lopes, Teresa da Silva (2007), *Global Brands: The Evolution of Multinationals in Alcoholic Beverages*. New York: Cambridge da University Press.

Lopes, Teresa da Silva and Paul Duguid (eds.) (2010), *Trademarks, Brands and Competitiveness*, London: Routledge.

Lourenço, Sónia M. (2006), 'José da Silva Lopes', in Filipe Fernandes *et al* (eds.), *Memórias de Economistas*, Paço de Arcos: Edimpresa.

Lyles, Marjorie A., and Jane E. Salk (2007). Knowledge Acquisition from Foreign Parents in International Joint Ventures: An Empirical Examination in the Hungarian Context. *Journal of International Business Studies*, 38(1): 3-18.

Maddison, Angus (2010), Historical Statistics of the World Economy: 1-2008 AD. Geneve: OECD

Mahnke, Volker, Torben Pedersen, and Markus Venzin (2005). The impact of knowledge management on MNC subsidiary performance: the role of absorptive capacity. *Management International Review*.45 (2): 101-120.

Mamede, Ricardo Paes, Manuel Mira Godinho, and Vítor Corado Simões (2014), 'Industrial Policy in Portugal: History, results and future challenges', in Aurora A. C. Teixeira, Ester Silva and Ricardo Mamede (eds.), *Structural Change, Competitiveness and Industrial Policy. Painful Lessons from the European Periphery*. Oxon: Routledge.

Marçal, Bruno José Navarro (2016), 'Um Império Projectado pelo 'Silvo da Locomotiva'. O Papel da Engenharia Portuguesa na Apropriação do Espaço Colonial Africano: Angola e Moçambique (1869-1930)'. PhD Dissertation – Universidade Nova de Lisboa.

Marques, A. H. de Oliveira (1978), *História de Portugal. Desde os Tempos Mais Antigos até ao Governo do Sr. Marcelo Caetano*, Vol.II. Lisboa: Palas Editores.

Marshall, Alfred (1890), *Principles of Economics*. London: Macmillan.

Martins, Maria Belmira (1976), *As Multinacionais em Portugal*, Lisboa: Editorial Estampa.

Martins, Conceição Andrade (1990), *Memória do Vinho do Porto. Lisboa: Instituto de Ciências Sociais.*

Martins, Maximiano, and Rui Guimarães (1982), *A Política Industrial Portuguesa face ao Futuro*, Paper presented at the First Conference of Portuguese Economists, Lisboa.

Mata, José, and Pedro Portugal (2000), 'Closure and Divestiture by Foreign entrants: the impact of entry and post-entry strategies', *Strategic Management Journal*, 21: 549-562.

Mata, Maria Eugenia (1993), *As Finanças Públicas Portuguesas da Regeneração a Primeira Guerra Mundial.* Lisboa: Banco de Portugal.

Mata, Maria Eugénia (2002), 'A Forgotten Country in Globalisation? The Role of Foreign Capital in Nineteenth-Century Portugal' in Magrit Muller and Timo Myllyntaus (eds.), *Pathbreakers – Small European Countries Responding to Globalisation and Deglobalisation*, Bern: Peter Lang: 177-208.

Mata, Maria Eugénia, and Nuno Valério (1994), *História Económica de Portugal – Uma Perspective Global*. Lisboa: Editorial Presença.

Mateus, Abel (2001), *Economia Portuguesa*, 1st edition, Lisboa: Verbo.

Matos, Ana Cardoso, and Ana Paula Diogo (2003), 'A Afirmação da Engenharia em Portugal ao Longo do Século XX', in José Maria Brandão de Brito, Manuel Heitor, and Maria Fernanda Rollo (eds.), *Engenho e Obra – Uma Abordagem à História da Engenharia em Portugal*. Lisboa: Don Quixote.

Matos, Luís Salgado (1973), *Investimentos Estrangeiros em Portugal*. Lisbon: Seara Nova.

MIE (1999), *The Automobile Industry and Foreign Investment*. Lisboa: Ministério da Indústria e Energia.

Nam, K.M. Learning through the International Joint Venture: Lessons from the Experience of China's Automotive Sector. *Industrial and Corporate Change*. 20 (3): 855–907.

Narula, Rajneesh (2014). Exploring the paradox of competence-creating subsidiaries: Balancing bandwidth and dispersion in MNEs. *Long Range Planning*, 47(1): 4-15.

Nelson, Richard, and Sidney G. Winter (1982), *An Evolutionary Theory of Economic Change*. Cambridge: Belknap Press/Harvard University Press.

Nonaka, Ikujiro, Ryoko Toyama and Noboru Konno (2000), 'SECI, *Ba* and leadership: a unified model of dynamic knowledge creation', *Long Range Planning*, 33 (1): 5–34.

Noorderhaven, Niels and Anne-Wil Harzing (2009). Knowledge-sharing and social interaction within MNEs. *Journal of International Business Studies*, 40 (5): 719-741.

OECD (1981), *Investissement International et Entreprises Multinationales: Tendences Recentes des Investissements Directs Internationaux*. Paris: OECD.

O'Rourke, Kevin H., and Jeffrey G. Williamson (1999), *Globalization and History: The Evolution of a Nineteenth-Century Atlantic Economy*. Cambridge Mass: MIT Press.

Patriotta, Gerardo, Anna Castellano, and Mike Wright (2013), 'Coordinating knowledge transfer: Global managers as higher-level intermediaries'. *Journal of World Business*, 48 (4): 515-526.

Pereira, Gaspar Martins, and Amândio Barros (2013), 'Wine Trade in the Early Modern Period: A Comparative Perspective from Porto', in Sebastian Celestino Perez and Juan Blanquez Perez (eds.), *Vine and Wine Cultural Heritage*. Madrid: UAM Ediciones.

Picoito, João (2005), Speech delivered at the opening session of the First Iberian International Business Conference, Porto.

Polanyi, Michael (1966). *The Tacit Dimension*. London: Routledge and Kegan Paul.

Público (2004), 'A preocupação de Silva Lopes com a Educação', 11 November 2004.

Reed, Richard, and Robert J. DeFillippi (1990), 'Causal Ambiguity, Barriers to Imitation and Sustainable Competitive Advantage', *Academy Management Review*, 15 (1): 88-102.

Reis, Jaime (1993), 'The Historical Roots of the Modern Portuguese Economy, The First Century of Growth 1850s to 1950s', in Richard Herr, *The New Portugal: Democracy and Europe*. Berkeley: University of California.

Reis, Jaime (2000), 'The Gold Standard in Portugal, 1854-91', in P. Martin Acena and J. Reis (eds.), *Monetary Standards in the Periphery: Papers Silver and Gold, 1854-1993*. London: St. Martin's Press.

Rodrigues, Eduardo Ferro, J. Félix Ribeiro, and Lino Fernandes (1982), 'Ascensão e crise das exportações portuguesas (1965-73; 1973-79)', *Estudos de Economia*, 2(4).

Rodrigues, Manuel Ferreira, and José M. Amado Mendes (1999), *História da Indústria Portuguesa – Da Idade Média aos Nossos Dias.* Mem Martins: Publicações Europa-América.

Rodrigues, Maria de Lurdes (2003), 'Engenharia e Sociedade: A Profissão de Engenheiro em Portugal', in José Maria Brandão de Brito, Manuel Heitor, and Maria Fernanda Rollo (eds.), *Engenho e Obra – Uma Abordagem à História de Portugal no Século XX*. Lisboa: Don Quixote.

Romer, P.S. (1986) Increasing Returns and Long-Run Growth, *Journal of Political Economy* 94 (1): 2-37.

Romer, P. M. (1990). Endogenous technological change. *The Journal of Political Economy, 98*, 71–102.

Sandeman, Patrick W. (1955), *Port and Sherry – The Story of two Fine Wines*. London: Geo. G. Sandeman Sons & Co.

Santos, Américo Ramos dos (1977), 'Desenvolvimento Monopolista em Portugal: Fase 1968-1973, Estruturas Fundamentais', *Análise Social* 13 (49): 69-95.

Saraiva, Ana Margarida (1993), 'Investimento Directo Estrangeiro em Portugal no Período de 1986 a 1992', *Boletim Trimestral Banco de Portugal*, December.

Saraiva, Tiago (2007), 'Inventing de Technological Nation: The Example of Portugal, 1851-1898', *History and Technology* 23, 3: 263-273.

Schmidt, Ana, and J. Carreira de Almeida (1987), *Fabricação Automóvel e Produção de Componentes*. Lisboa: Banco de Fomento Nacional.

Schneider, Susan (1980), *O Marquês de Pombal e o Vinho do Porto – Dependência e Subdesenvolvimento em Portugal no Século XVIII*. Lisboa: A Regra do Jogo.

Shillington, V. M., A. B. Chapman, and A. B. Wallis (1903), *The Commercial Relations of England and Portugal.* London: George Routledge & Sons.

Sideri, S. (1970), *Trade and Power – Informal Colonialism in Anglo-Portuguese Relations*. Rotterdam: Rotterdam University Press.

Siemens Portugal (2015), *Historial Siemens*. Lisboa: Siemens Portugal (available at http://w5.siemens.com/portugal/web_nwa/pt/PortalInternet/QuemSomos/historia/Pages/Historia.aspx. accessed on 29 June 2016)

Siemens Portugal (2016), *Celebrating the past, ensuring the future – Company report Siemens Portugal 2015.* Lisboa: Siemens Portugal (available at https://w5.siemens.com/portugal/web_nwa/pt/PortalInternet/SalaImprensa/relatorioecontas2015/Documents/Relatorio_gestao_DF2015_ING.pdf, accessed on 29 june 2016).

Silva, Álvaro (2014), 'Organizational Innovation in Nineteenth- Century Railway Investment: Peripheral Countries in a Global Economy', *Business History Review* (Winter): 709-736.

Silva, Elísio Romariz Santos (2008), 'Companhia do Caminho de Ferro de Benguela: Uma História Sucinta da sua Formação e Desenvolvimento' (Lisboa: mimeo).

Silva, Joaquim Ramos (2006), *A Economia Portuguesa e o Investimento Estrangeiro*, Lisboa: ISEG (mimeo).

Simões, Vítor Corado (1983), 'Origem do Capital e Vocação Exportadora do Investimento Estrangeiro na Indústria Portuguesa', *Investimento e Tecnologia*, 2: 11-27.

Simões, Vítor Corado (1985a), 'Portugal', in John H. Dunning ed., *Multinational Enterprises, Economic Structure and International Competitiveness*. Chichester: John Wiley & Sons.

Simões, Vítor Corado (1985b), 'O Envolvimento Internacional da Economia Portuguesa: Uma Análise dos Fluxos de Investimento', *Estudos de Economia*, VI (1).

Simões, Vítor Corado (1992), 'European Integration and the Pattern of FDI Inflow in Portugal', in John Cantwell, ed., *Multinational Investment in Modern Europe: Strategic Interaction in the Integrated Community*. Cheltenham: Edward Elgar.

Simões, Vítor Corado (1993), *Impacto do Investimento Estrangeiro na Estrutura Industrial Portuguesa*. Lisboa: Ceso I&D.

Simões, Vítor Corado (2000), *Efeitos do Investimento Estrangeiro sobre a Modernização do Tecido Produtivo Nacional: O Caso da Indústria Automóvel*. Lisboa: Associação Industrial Portuguesa.

Simões, Vítor Corado (2003), 'Networks and learning processes: A case study on the automotive industry in Portugal', *in* John Cantwell e José Molero Zayas, eds. *Multinational Enterprises, Innovative Strategies and Systems of Innovation*. Cheltenham: Edward Elgar.

Simões, Vítor Corado (2004), *Divestment by Foreign-Based Companies: Founding Conditions, Sourcing and Firm Boundaries*, Paper presented to the 30th Annual Conference of EIBA, Ljubljana, December.

Simões, Vítor Corado, and Rui Manuel Cartaxo (2013), 'Portugal: Inward FDI and its Policy Context, 2011', in Karl Sauvant, Padma Mallampally and Geraldine McAllister, eds., *Inward and Outward FDI Country Profiles*. New York: Vale Columbia Center.

Simões, Vítor Corado and Maria João Santos (2015). *Bosch Termotecnologia*. Lisboa: COTEC Portugal (Case Studies series)

Simonin, Bernard L. (1999), 'Transfer of Marketing Know-how in International Strategic Alliances: An Empirical Investigation on the Role and Antecedents of Knowledge Ambiguity', *Journal of International Business Studies*, 30 (3): 463-490.

Simonin, Bernard L. (2004), 'An Empirical Investigation of the Process of Knowledge Transfer in International Strategic Alliances', *Journal of International Business Studies*, 35 (5): 407-427.

Smeets, Roger (2008), 'Collecting the Pieces of the FDI Spillovers Puzzle', *World Bank Research Observer*, 23: 107-38.

Smith, Adam (1776/1937), *An Inquiry into the Nature and Causes of The Wealth of Nations*, New York: Random House, Book IV, chapter 6.

Sousa, Mário Pais de (1997), 'O processo de internacionalização da Vulcano', *Economia & Prospectiva*, 1(2):105-112.

Teece, David (1977), 'Technology Transfer by the Multinational Corporation: The Resource Cost of Transferring Technological Know-How', *Economical Journal* 87: 242-261.

Textile Institute & Industry (1964), 'Terylene' Staple Fibre to be Made in Portugal', March 2 (3): 63

Thiel, Joachim, Iva Pires, and Anna Dudleston (2000), 'Globalisation and the Portuguese textile and clothing filière in the post GATT climate', in A. Giunta, A. Lagendijk and A. Pyke, eds., *Restructuring Industry and Territory: The Experience of Europe's Regions*, London: The Stationary Office.

UNCTAD (2014), *World Investments Prospects Survey*, New York and Geneva: United Nations.

UNCTAD (2015), *World Investment Report 2015: Reforming International Investment Governance*, New York and Geneva: United Nations.

Unilever/Jerónimo Martins (2014) *Fábrica de Santa Iria*. Lisboa: Unilever.

Vale, Mário (1999), *Geografia da Indústria Automóvel num contexto de globalização – Imbricação espacial do sistema AutoEuropa*, Doctoral Dissertation in Geography. Lisboa: Universidade de Lisboa.

Vieira, António Lopes (1988), 'A Política da Especulação – Uma Introdução aos Investimentos Britânicos e Franceses nos Caminhos-de-Ferro Portugueses', *Análise Social* 24 (101-102): 723-744.

Wang, Cassandra C., and Aiqi Wu (2016), 'Geographic FDI knowledge spillover and innovation in indigenous firms in China, International Business Review, 25(4): 895-906.

Westall, O. M. (1991), 'Entrepreneurship and Product Innovation in British General Insurance, 1840-1914' in J. Brown and M. B. Rose (eds.), *Entrepreneurship, Networks and Modern Business*. Manchester: Manchester University Press.

Wilkins, Mira (1970), *The Emergence of Multinational Enterprise – American Business Abroad from the Colonia Era to 1914*. Cambridge Mass: Harvard University Press.

Wilkins, Mira (1988), 'The Free-Standing Company, 1870-1914: An Important Type of British Foreign Direct Investment', *Economic History Review* 41 (2): 259-282.

Wilkins, Mira (2009), *The History of Foreign Investment in the United States, 1914-1945*, Cambridge Mass: Harvard University Press.

Wilkins, Mira (2010), 'Multinational Enterprises ad the Varieties of Capitalism', *Business History Review* 84 (4): 638-645.

Wilkins, Mira, and Harm Schroeter (eds.) (1998), *The Free Standing Company in the World Economy*. Oxford: Oxford University Press.

Winter, Sidney G. (1987), 'Knowledge and Competence as Strategic Assets', *in* D. J. Teece, ed., *The Competitive Challenge*. New York: Harper & Row.

WDI – *World Development Indicators* (2010). Washington DC: World Bank.