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The impact of Brexit on the UK pharmaceutical industry

A case study of GlaxoSmithKline

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1. Introduction

In 2016, the UK voted to withdraw from the EU and, ever since then, scholars and professionals have investigated the effects of Brexit in the UK. Upon the finalised withdrawal process, the UK will regain full control of its borders and regulation system. Additionally, the country’s economy will no longer be interconnected with other EU member states, nor will it have access to the single market. All of these changes have caused markets to worry about the future of the UK market and relation with EU, turning this into a widely discussed matter.

The phenomenon of globalisation propelled the role of Foreign Direct Investment (FDI) in international business and economic development (OECD, 2007). Because of its ability to create a synergy, countries have fiercely competed to become attractive to FDI, in hopes of receiving more investment projects. In addition, FDI facilitates the transfer of technology and knowledge. In turn, this flow of capital, knowledge and technology positively affect a country’s economic development (UNCTAD, 2011). The developed countries benefit more from all of the above. Developed countries are more attractive recipients of FDI. Being economically developed translates to more knowledge of the market; less risky investments as economic development provides stability to investors and access to technology which increases productivity performances (UNCTAD, 2011).

The UK is the second most attractive recipient of FDI inflows, after the US. In 2016, UK inward FDI reached £196 billion; this amount is bigger than some countries’ gross domestic product. Europe is the UK’s biggest trade partner, accounting for over £25 billion of inward FDI (Appendix 6).

This research topic will analyse the impact of Brexit on foreign direct investment activity. Due to the novelty and uniqueness of this event, the author recognises this topic to be of great contemporaneous importance and interest. Brexit will reshape global market dynamics and restructure international relationships.

The current academic literature discusses Brexit in an economic context and analyses FDI on the same basis. The author recognised an absence of FDI analysis in the context of FDI theories. This research project aims at: (1) to show the importance of the pharmaceutical industry to the UK economy; (2) to analyse the impact of Brexit on the industry’s ability to attract foreign direct investment, using FDI theories; (3) to pinpoint future of FDI inflows in the pharmaceutical industry, with focus on GSK. To achieve this, the author uses three theories of FDI, namely, Aliber’s Theorem; Dunning’s Eclectic (or OLI) paradigm and Institutional theory. The literature review on these FDI theories scrutinizes and critically analyses the contribution each theory has made to the field of
International Business. Through a case study of GlaxoSmithKline (GSK), the author will assess the impact of Brexit on the firm and wider industry-level.

Chapter 2 in this research demonstrates the UK’s FDI position over the years and in comparison with other developed countries. Chapter 3 is a review of the academic literature on FDI theories. The author starts this section with definitions of foreign direct investment and the purpose of the theories to contextualise the contribution of the theories to the research topic. Further, Chapter 4 is an outline of the methodology followed in the development of this research project. The author discusses research philosophy, methods and limitations. Additionally, Chapter 5 the author examines the UK pharmaceutical industry and its importance to the UK economy. A case study of GSK follows, which analyses the impact of Brexit on attractiveness factors for FDI. Furthermore, using FDI theories in chapter 2, the author pinpoints the effects on future FDI activity into the industry. Chapter 6 is a conclusion of the research project. The author reflects upon research objectives, weaknesses and strengths of this study and limitations.

The next chapter is an overview of FDI activity in the UK overtime. The author identifies trends of inflows and outflows of foreign direct investment in the country.

2. Foreign Direct Investment activity in the UK

The UK has been very successful at attracting FDI over the last 15 years. Using policy to encourage foreign firms has been paramount to becoming more attractive than other EU countries, like Germany, Belgium and the Netherlands, to Japanese and US corporations (Appendix 4). Moreover, the country’s labour laws and decreased bureaucracy motivate foreign enterprises to settle. The World Bank ranked the UK as one of the easiest places to do business in. This included the stage of setting up a business and conducting subsequent business operations.

Appendices 1 and 2 illustrate the UK’s foreign direct investment as a percentage of the country’s GDP. Overall, FDI inflows and outflows have increased over the years. This is a guide of how confident firms are in the UK’s economic outlook for the future. However, the financial crisis of 2008 caused inflows and outflows to fall. During this period, businesses retracted their investment amid worldwide market panic and insecurity. The UK shows a steady recovery of both FDI flows. Similarly, after the Brexit vote companies have become more cautious and many started to postpone carrying out investment projects in the country. Mainly because there is no clear plan to what relationship the UK will have with the EU countries once it withdraws from the EU. Appendix 4 shows a significant decline in inward FDI flows, from US$ 196 billion in 2016 to US$ 15 billion.
In 2017, the country received 69 projects in the financial sector which solidified the UK as the number one destination for FDI for the sector, ahead of France and Germany (Ernst & Young, 2017). Because of Brexit, investors are finding other European capitals more and more attractive as investment destinations as they provide them with access to the Single market. Germany and France show a growth of 17% and 20% respectively, in comparison to 5% growth for the UK.

The UK’s FDI position saw a rise in manufacturing and services sectors of £21.9 billion and £85.7 billion, correspondingly. Regarding its inward FDI position, the products and services sectors also increased in value. The former doubled in value to £128.2 billion from 2015 to 2016. The ‘petroleum, pharmaceutical, chemicals, rubber and plastic products’ value of outward FDI reached £76.7 billion in 2016 (Office for National Statistics, 2017). In 2016, the country’s outward FDI gains were highest in Europe and Ireland. In North America, the USA’s performance experiences a decline. The ‘petroleum, pharmaceuticals, chemicals, rubber and plastic products’ sector generated gains of £2.6 billion in 2016, a decline of £9 billion attained the previous year. Asia is becoming more important as a generator of Outward FDI earnings (Appendix 6).

The Department for International Trade stated the USA invested the highest number of projects in the UK, 557 over 2016. These investments from the USA also created the biggest amount of new jobs – 24,607 – and safeguarded 7,197. This constituted a rise in FDI projects into the UK last year. Whilst mergers & acquisitions and expansions decreased, the number of new investments rose 9% (Department for International Trade, 2017). The government issued a statement declaring the country was ‘open for business’, this initiative by the UK government aimed at encouraging foreign investment into the country in spite of withdrawal from European Union (Gov.UK, 2017).

The next section is an account of the academic literature concerning the subject being explored. Firstly, definitions of foreign direct investment (FDI) are discussed, followed by an elucidation of the aim of FDI theories. Throughout the chapter, the author will look at FDI theories and the implications of Brexit on two elements, labour and trade. The author recognised these two elements to be widely discussed currently and to be of great importance as determining factors for foreign direct investment in the UK following the Brexit vote.
3. Literature Review

3.1. Definition of Foreign Direct Investment

The evolution of financial markets caused by regulatory liberalisation and access to new markets incited an acceleration of cross border investment flows. Investors engaging in cross border investment want to escape intense market competition pressures; high transaction costs and access to new markets. This originated *Foreign Direct Investment* (FDI), whereby a company in market A decides to start operating in market B (OECD, 2008). Markets where the investment originates from are designated as *home country* or economy; likewise markets where the investment is destined to, but where the investor does not reside in, are denominated *host country* or economy. Throughout this research project the term *FDI theories* will be used to designate theories of Multinational Enterprises or Corporations (MNEs or MNCs), since a theory of FDI is, in fact, a theory for MNEs.

Duce (2003) from the Bank of Spain states that direct investment refers to the desire of an organisation, individual or government to pursue an advantage in a firm residing in a different economy. A long-term relationship is implicit in this pursuit and the direct investor exudes a greater influential power on to the direct investment organisation. This type of investment includes initial capital transactions when relationship between investor and non-resident enterprise was setup and any other transactions to the enterprise and its subsidiaries over the course of this relationship.

Similarly, the non-residing investor seeks a benefit or control over a firm in another economy and, so it engages in cross-border investment. Foreign direct investment requires ownership of 10% or more of a resident enterprise by a non-resident investor and aggregate equity capital, reinvested earnings and other forms of capital make up an investor’s foreign direct investment (World Bank, n.d.).

Contrarily, Cantwell (2015) stated that firms engage in FDI from the moment they develop a transnational network of activities aimed at creating value. In this definition, physical presence is not required, and neither is ownership. Arguably, intermediary agent contracts to provide a determined good or service can be considered as foreign direct investment. Cantwell (2015) claimed that the investor exerts influence in this relationship.

In some circumstances, the difficulty with defining foreign direct investment comes from ascertaining the origin of investment flows and the entity. Direct investment is considered foreign if the company in
the home economy participates in capital transactions flowing to a host country. However, reinvestment of capital gains can also be considered foreign direct investment even though capital gains have been generated in the host economy. When reporting this, organisations might consider this investment was made by the enterprise or affiliate in the host country, whereby it would be labelled as direct investment instead of a foreign investment.

### 3.2. Purpose of FDI Theories

The increasingly significant role of foreign direct investment in globalisation and international economics prompted the research and development of theories to explain this phenomenon. FDI theorists attempted to explain FDI activity; however, no single theory can explain all FDI activities since firms have their own motive for engaging in foreign direct investment. When firms compete in a market they differ in capabilities, resources and competitive advantages, this is referred to as firm-specific advantages. Moreover, their objectives and strategies also diverge and, so does their reason to invest abroad. Additionally, origin and type of investment mean the same theory cannot explain every firm’s foreign investment activities.

Nonetheless, FDI theories form a theoretical framework to analyse FDI activity and to examine the determinants for organisations to invest abroad. These theories are useful for countries wanting to attract capital flows into their economies to achieve growth. Research of some developing countries concluded that FDI can drive economic growth through the transfer of knowledge and technology; these contribute positively to a country’s productivity (Borenszteina et al., 1998). Knowing an industry’s characteristics can assist in finding the most suitable theory to apply to a firm’s investment activities and ascertain the factors behind their strategy and choice of host country. For example, developing countries with high unemployment rates use cheap labour to attract production operations of products that do not require much expertise, such as clothing and other commodities requiring similar skill. Many companies from developed countries decided to invest abroad by using an intermediary agent to supply production services or by opening a manufacturing subsidiary to take advantage of the host economy’s labour conditions.
3.3. FDI Theories

3.3.1. Aliber’s Theory

Aliber (1970) theorized that firms invest abroad to take advantage of foreign exchange rates. Firms in countries with stronger currency have an advantage over firms in economies with weaker currencies as they are able to capitalise on this difference. Generally speaking, the more developed an economy is, the stronger a country’s currency will be valued vis-à-vis other currencies. Thus, one can deduce that a country’s economic development and growth evidences their currency valuation against other currencies and, therefore, macroeconomic outlooks can be an indicative of future valuations.

Being headquartered in an economy with a stronger currency, means that firms have higher purchasing power. In that sense, a firm will choose to move its manufacturing operations to a country with a currency that is worth less because it will drive costs down, thus enabling foreign firms to maximise their profits and strengthen their financial position. His argument revolved around financial markets providing an advantage for firms over host country enterprises with less valued currency because of economic development. Economic growth enables countries to improve their position in regard to other countries, whereby domestic firms would gain superiority over host economy’s firms in the form of purchasing power. Additionally, Aliber (1970) claimed that firms decide to engage in FDI depending on which currency they perceive to be better to have assets and liabilities in, meaning a company would prefer to have assets in economies with stronger and more stable currencies and debts in economies with a devalued currency. The theory overlooks the fact that borrowings are made in the host country’s currency, therefore this advantage would not exist.

Aliber’s work has amassed criticism relating to its applicability since it represents the perceived benefits to firms in developed economies. Ragazzi (1973) disputed that the theorem is useful to describe FDI flows from companies in developed economies into developing ones. Conversely, Kojima and Ozawa (1975, 1985) conducted research on the motives for Japanese firms to invest abroad. He deducted the motivations for Japanese firms to expand to developing countries were market-seeking fuelled by their inability to compete with more competent resident firms in Japanese markets and to exploit their superiority over weaker currency firms. However, this claim was not entirely plausible since leading domestic firms were also expanding abroad. According to
Aliber’s theorem, efficient firms expand abroad to benefit from weaker economies through purchasing power.

Despite influencing firms, currency advantages do not explain the phenomenon of FDI fully, especially concerning investments flowing from transitioning or developing economies into developed countries. This direction of flow can be justified by market-, resource-, efficiency- seeking motives, thus the incompleteness of this theory is evidenced.

For the purpose of this research, Aliber’s Theorem is relevant as it provides clear insight into how currency and economic development play a role in defining the direction of FDI flow. Furthermore, Cantwell (1991) pointed out this theory is able to elucidate on multinationals’ unrelated diversification investments and their decision of when to invest abroad.

3.3.2. The Eclectic (OLI) Paradigm

Dunning’s Eclectic (or OLI) paradigm represents one of the most comprehensive theories on the study of FDI. This theory has been elaborated from earlier FDI theories such as Hymer’s and Vernon’s theories. Dunning realised that previous theories attempted to explain FDI activity by firms, considering a limited view on businesses, however he recognized that organisations differ in their objectives, competences and these decisions were influenced, at times, by the market environment they were in. Thus, emphasizing that determinants for FDI were sometimes based on firm or industry characteristics, rather than solely host country features (Buckley and Casson, 1976). Following this, Dunning theorized the Eclectic Paradigm which was made up of 3 subparadigms designated (1) Ownership-specific advantages (OSAs), (2) Location-specific advantages (LSAs) and (3) Internalisation advantages.

(1) Relates to a firm’s assets and competitive advantage, in other words, the unique intangible possessions a company owns that grants them with market superiority over its competitors – these advantages can be exploited externally using licenses or selling patents. This is depicted in Hymer’s (1960) theory which states that to trade-off a company’s lack of knowledge regarding the host country, lack of experience of the market and cultural differences, an organisation must possess firm-specific advantages. Firm-specific advantages can be a well-known brand name, economies of
scale, superior patented technologies and expert management know-how, among others. To overcome liability of foreign firms it might be easier for certain firms to invest or buy out a company in the host economy, the rationale behind this decision is that it is easier to invest in a resident company, rather than introducing a foreign brand into a new host market.

(2) Addresses the question of how do firms decide where to expand to? Dunning’s work asserts that economic environment, regulations and abundance of resources constitute a few location benefits. Later, institutions were recognised as a decisive factor for a company when choosing a location to invest in or physically expand to (Dunning & Lundan, 2008).

(3) Refers to firms internalising operations and transaction costs because it is more cost-efficient to do so. Firms will invest in a foreign market they already cater to through intermediaries because by doing so the firm is able to take advantage of benefits.

It must be noted that the ownership, location and internalisation advantages are not independent from one another. Location characteristics of host economy might render internalisation advantages unlawful as government policy is capable of restricting this or, even, a company's ability to license out their products. When an enterprise is deciding where to expand, it needs to confirm it will be permitted to benefit from its Ownership and Internalisation advantages.

Empirical models have concluded that ownership or firm-specific advantages determine whether a firm is active abroad or not and how dynamic it can be in foreign markets. Location and internalisation advantages are responsible for determining the destination and market entry mode, in other words, a firm’s internationalisation strategy (König, 2003).

In his theoretical work, Dunning ascertains that organisations will engage in FDI if they do not possess all three advantages. If a company benefits from OSAs and internalisation advantages but it lacks an economic environment where it can thrive, this organisation might decide to expand to a foreign market.

On the course of his research three motivations for FDI were identified as market-seeking, resource-seeking and efficiency-seeking (Dunning, 1993; Kojima, 1978). To validate his theory Dunning conducted empirical tests and obtained results confirming his claims.

Scholars have argued that the Eclectic Paradigm fails to describe the flow of FDI from firms in emerging economies to developed economies. It is true that at the time Dunning
developed his theory, the common flow of FDI was from developed economies to developing countries as companies capitalized on weaker economies. Thus, benefitting from cheaper labour, abundance of resources and markets where they were superior to domestic firms.

Moreover, Dunning (1981) addresses this issue using the Investment Development Path theory. The theory suggests a connection between the level of economic development and its position in relation to its outward FDI (OFDI) stocks. The logic behind this being, when a country’s economy grows stronger it affects the active relationship between foreign and domestic companies, thus altering the flows of FDI to and from the country (Dunning, 1986, 1997; Narula, 1996; Durán & Úbeda, 2005). Furthermore, research found that large companies, from BRIC countries, were in pursuit of a bigger market to explore, more advanced technology and/or more efficient management know-how (Holtbrügge & Kreppel, 2012). Additionally, Deeds et al. (2008) conducted research on drivers of new ventures expanding to developed countries. Research concluded that according to industry-based view the motives for this strategic decision are marketseeking opportunities; institutional advantages and market know-how. From resource-based perspective, start-ups from Emerging economies internationalise to gain management knowledge; to transcend resource and aptitude insufficiencies (ET&P, 2008).

Despite widespread acceptance by scholars of Dunning’s contribution to the field of FDI theories, the OLI paradigm is considered to include a lot of factors affecting a company’s FDI activity. This renders the theory less capable of being applied more accurately. Dunning agrees with the somewhat impracticality of his theory; however, this is an imminent consequence of combining several distinct theories under one comprehensive framework.

Throughout the years, Dunning has revised and adjusted the Eclectic Paradigm to incorporate new explanations and components due to constant changes in International Business. This made scholars lose confidence in his theory and created debates regarding the usefulness of his paradigm to explain FDI (Rugman, 1980; Buckley & Casson, 1976, 1985).

In their discussion, Rugman, Buckley and Casson claimed Internalisation theory as the main theory for MNE activity since other theoretical frameworks focus on one aspect of market imperfection. Contrarily, Internalisation theory addressed these imperfections and, therefore
it can integrate other works such as Vernon’s (1966) and Aliber’s (1970). Regarding Dunning’s work, Rugman insisted that his approach confirmed that Internalisation theory is a complete framework in this field. One can argue that the OLI paradigm is based upon the dynamics of a country or industry and markets.

Because markets are non-static and are heavily influenced by a country’s economic state and policies, one cannot expect that a theory of FDI that applied to the UK pre-European Union to remain a suitable framework for describing the UK’s FDI position today. Thus, Dunning’s revision on the Eclectic Paradigm gives us a more current account of the motive of firms to engage in foreign direct investment.

Arguably, nonstop adjustments made to respond to new gaps in the field risk dispossessing the theory of its utility. Attempts to encompass every element influencing a firm’s decision under a general theory will constrain its ability to befittingly pinpoint determinants for foreign expansion. Narula (2010) reasoned the paradigm should go back to basics and regain its simplicity. To address the change in International Business environment, he proposed the OLI paradigm should be accompanied by other separate theories to ensure clarity.

### 3.3.3. Institutional theory

Institutions set the rules of International Business (North, 1990) and are capable of determining how attractive a country may be in capturing inward FDI from foreign companies, conversely they are also capable of dissuading firms from doing business there. Institutions can be formal – such as political, financial, legal and educational – or informal – such as societal norms, organisational culture, corporate governance and codes of conduct. Despite the different levels of commitment to comply, all of these factors influence a firm’s decision to invest abroad. The presence of respectable institutions in a country is expected to attract more FDI due to higher skilled labour and economic growth (Mauro, 1995; La Porta et al., 1998).

Scott (1995) identified cognitive, normative and regulative components of institutions. Although theorists disagree on which element is more important, Barnett and Carroll (1993) argue that regulations and policies have a more prominent role in shaping the market and organisations. Normative approach accentuates the role of informal institutions over formal systems and the social duty firms have in that country (Selznick, 1948). Culture, shared
societal belief and customs are said to dictate a firm’s internal behavioural conduct (DiMaggio & Powell, 1991). A foreign firm would struggle to circumvent these cognitive features since they are enforced by employees and are deep rooted in their manners, this is called normative isomorphism. This shows that a firm’s success depends on their ability to adapt to foreign institutions through coercive and mimetic isomorphism also. Each component serves as a foundation for legitimacy, which Scott (1995) states is a reflection of a firm’s compliance with legal systems, correspondence with social values and morals and its cultural compatibility. Obtaining legitimate status is crucial for the success of a firm in a foreign market as it represents how the organisation’s reputation is perceived by the market (Suchman, 1995). Similarly, the reputation of a country as a good investment destination can also be evidenced by their level of legitimacy.

Arguably, this applies to firms from developing investing into developed economies more than to enterprises from developed countries investing into weaker economies. Developed economies are able to attract more FDI because of the quality of their institutions, international presence through participation in supranational organisations and pro-business policies. Contrarily, less developed countries suffer from higher levels of corruption which Wei (1997, 2000) identified as a factor that negatively affects a country’s ability to attract FDI. This theory identifies corruption as a source of volatility as a result of overcoming bribery and unproductive market systems. Firms in developing economies engage in FDI in developed economies to escape this and to gain international recognition. For firms, participating in a corrupt market would cap their ability to strive and grow, thus emphasizing the necessity for good corporate governance (Globerman & Shapiro, 2003). Fortunately, developed economies possess strong institutional frameworks so they are wellpositioned to receive and retain higher flows of FDI (Peng et al., 2008).

Through the shaping of national and international institutional frameworks, developed countries have been able to achieve economic growth. Creation and development of supranational institutions granted them with a comparative advantage to heavily influence the regulatory framework firms need to adapt to when engaging in international business. To facilitate crossborder business activities among developed countries, they created similar market policies (Balassa, 1961). Evidently, this degree of institutional integration compelled foreign investors to invest in other developed economies with analogous market structure because volatility and transaction costs were reduced whilst success rate grew.
Institutional theory states that governments act as regulatory agents responsible for the industry and market environment (Buchholz, 1986). Chen & Funke (2011) claim that institutional uncertainty arises from the government’s inability to “credibly commit to a future course of action”, thus negatively affecting FDI decisions. In the context of this research, institutional theory will be useful to address the effect of Brexit on the UK market dynamics and their relationship with businesses.

3.4. Implications of Brexit

3.4.1. Labour

Economics scholars have investigated the effect of Brexit on Brexit and its importance to economic productivity and, consequent growth. The United Kingdom’s labour market is highly deregulated in comparison to other EU countries. In an attempt to achieve social inclusion, the government designed flexible labour regulations which enabled the UK to record lower levels of unemployment rates. Since Brexit, the UK’s flexible labour market might be threatened by economic uncertainty. Considering that many laws come from the EU itself, the UK government might decide to change these after Brexit and seek a competitive advantage through “regulatory competition” (Clegg, 2017). This in turn might result in the labour market becoming less attractive for skilled labour which will affect one of the country’s attractive factors that foreign investors seek to exploit – its highly skilled labour force and knowledge-intensive market (OECD, 2016). Furthermore, a decrease in migration might result in a reversal in productivity levels. Boubtane et al. (2015) found that until 2006 the UK gained a competitive advantage by allowing entry of skilled EU migrants into their economy resulting in an increase in productivity levels which placed the UK ahead of other developed economies.

Free movement of EU nationals across member states has resulted in 3 million people immigrating to the UK over the last 10 years (Forte & Portes, 2017) of which 19% of those working are skilled and educated (Vargas-Silva, 2016). Forte and Portes (2017) conducted research on the impact of Brexit on migration flows from the EU to the UK. Results showed that EU migration is forecasted to decline between 91,000 and 150,000 by 2020. Notably a
fall in EU migration has been recorded prior to UK withdrawal (Wright, 2018) which can be attributed to uncertainty and deceleration in growth of employment rate (Portes, 2016). Arguably, these assumptions are conditioned upon the model the UK adopts once Brexit is completed; these range from the Norway, Switzerland, Canada models or the ‘No Deal’ scenario. All of which provide a different outcome for the future outlook of the workforce in the UK.

Dickerson and Damon (2017) analysed the change in labour demand in the UK and ascertained there has been an increased requisite for employees with analytical and social skills, with a decreased necessity for low-skilled physical labour. The Centre for Economics and Business Research (2013) advocated that stricter EU immigration laws would result in a GDP decrease (Dhingra et al., 2016) of 2% in 30 years. The report evidences the economic benefits EU immigration brings to the UK through higher-skilled labour and economic activity which stimulates growth in the UK. The report states that EU immigrants help balance out costs associated with an ageing population since they are more likely to work and positively contribute to the economy through payment of taxes. However, the report refers only to immigrants coming from EU-14\(^1\) countries, therefore a partial account of the effects of EU immigration in the UK is given.

### 3.4.2. Trade

Independence from EU will grant the UK with the opportunity to reshape its international trade relations with other countries and organisations. Despite a generally shared pessimistic view on the effects of Brexit on trade, the UK will have the chance to seek trade deals that benefit them and emancipate itself from adverse EU policies. However, this will be very time-consuming and the UK might not see immediate benefits (Holmes et al., 2016). Prospects of unrestrained relationship with the UK might drive investors to advance with FDI projects. Contrarily, businesses have showed mixed reactions to Brexit, most of which resulted in firms withholding making any investment decisions in the UK due to speculative uncertainty.

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\(^{1}\) Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Sweden
Depending on the deal the UK forges with the EU, the UK might lose access to the Single Market upon which sectors of great importance – such as the financial industry – depend. Many industries are expected to suffer due to absence of ‘frictionless’ trade and many firms are hesitant regarding making further investments in the UK (OECD, 2016) before negotiations and withdrawal process are finalised. Not being a part of EU means that the UK will regain its sovereignty, but it might also be deprived from participation in the Common Market. Considering the EU is the UK’s biggest trade partner, UK-based firms are expected to incur extra costs when doing business with Continental Europe, in the form of tariff and non-tariff barriers.

The future of international trade in the UK is conditioned upon the deal both parties agree to. Academic research on the prospects of future trade considered mainly the following scenarios: Norway, Switzerland, Turkey and Canada models and Hard Brexit (or ‘No Deal’). Each scenario represents different levels of integration and borderless trade. Dhingra et al. (2016) extrapolate that the UK will be worse off because of higher costs of trading with EU members, caused by the inability to participate and benefit from reductions in trade expenditure within EU (Méjean & Schwellnus, 2009), driving income and living standards down.

The next section is an account of the Author’s methodology throughout the research project. A justification of research methods; philosophy and limitations are given to show the approach of the project and the appropriateness of the research strategy.

4. Methodology

4.1. Research Philosophy

The author has decided to conduct this research study under the philosophical ideology of Pragmatism. According to James (2002) and Peirce (1878), this philosophical approach accepts diversity in arguments since one’s interpretation of accounts might differ from someone else’s. Pragmatic research philosophy attributes this to the possibility of associating features of both positivism and interpretivism depending on the purpose of the research study. Considering this, the author decided to assess the impact of Brexit on the pharmaceutical industry using different theories of FDI in an attempt to give a more realistic account of events. This decision goes in line with pragmatic belief that one interpretation of
what motivates firms to engage in FDI cannot explain the determinants for every firm as they are not the same.

Epistemology relates to origins of knowledge and type of knowledge. In this research, the author employed (a) Authoritarian knowledge, (b) logical knowledge and (c) empirical knowledge.

(a) Includes books, reports and other research studies. The author based arguments on FDI theories and other academic research.

(b) This relates to the rational interpretation of data. The author interpreted data on FDI activity according to theories of FDI.

(c) Addresses objective findings that can be tested and proven. Again, the author argued points in regard to established FDI theories.

4.2. Research Method

Methodology refers to the guideline one follows to complete a set of tasks. During this project, the author decided on approaches to gather, validate and interpret research data and theoretical studies in regard to a practical setting. The methodology allows researchers to carry out their project following a meticulous procedural routine.

Throughout this research project, the author has used a wide range of both physical and online academic resources such as books, journals and reports. The extensive variety of sources provided the author with more knowledge of the research topic. In addition, it also granted the researcher with cognitive foundation to make reflective criticism. In 1933, John Dewey advocated that learning is achieved through reflection on past events and that this is a driver of better performance (Di Stefano et al., 2014). Due to highly broadcasted topic, the author’s views were tainted and resembled the pessimistic public sentiment regarding Brexit. This posed a risk of subjectively conducting research and interpreting data. However, through reflective criticism one is capable of changing conceived ideas and evaluating the topic objectively. Objectivity incites free thinking and neutrality which heightens value and insight to the issue being explored. Accepting other views supplements people’s knowledge
on a determined topic, thus adding quality, credibility and validity to one’s work interpretations, assumptions and conclusions (Kember et al., 2008).

This research project used secondary research to collect data that is already available. Data has been gathered from highly respected and trusted organisations, such as OECD; World Bank; government reports and other reliable sources. The benefits of using secondary data research method are its prompt availability; cost-efficiency and extensive data range which gives a panoramic view on the current situation of affairs. The professional expertise with which data collection is handled, adds value to secondary data sources.

Disadvantages of secondary research involve different term definitions leading to data gathered being distinct across sources. Primary data collection methods used might have been unethical which raises the question of data accuracy. Being reliant on other work of other researchers, negatively impacts the author’s research efforts and aims. Time also poses a constraint to this research study since there is a possibility that research reports and data relate to a time frame irrelevant to secondary researchers. Moreover, an extensive data range might indicate the presence of insignificant data that does not address research question; this deficiency becomes more pertinent depending on the level of specificity of the issue being addressed. Likewise, Clow and James (2014) suggested issues with secondary data gathering. They pointed out that data interpretation, analysis, appropriateness of source and collection frameworks were all subject to the primary researcher’s own philosophical beliefs and subjectivity. The author understands this poses a risk to the quality and veracity of the research study and the author’s claims. However, given monetary, time and competences constraints, the author concluded that using secondary research would be the most suitable and feasible method of tackling the research topic.

The author opted to do a case study analysis of the pharmaceutical industry because it represented the historical events within the sector, thus giving a comprehensive account of how the industry works. Arguably, doing a case study on the industry at this moment would not give an accurate representation of the industry and its stance on FDI activity. This will allow the author to discuss how Brexit might impact its business activity and assess possible effects on FDI according to theoretical frameworks.

Scholars have worked incessantly on the field of Foreign Direct Investment in attempts to decrypt what motivates firms to invest abroad. With the increasing importance of FDI in international business and suggestions that it stimulates economic growth, countries grew
an interest for the determinants behind MNE (or FDI) activity. Despite vast academic research, theorists have been unable to describe this phenomenon under one theory. To accurately diagnose the effects of Brexit on the pharmaceutical industry, I will be using three FDI theories. The Eclectic Paradigm is considered the most comprehensive FDI theory by scholars and, for that reason, the author chose to include this in the research project. It is crucial that different views are taken into consideration so that a significant contribution can be made to the topic being discussed. Because Brexit poses a significant institutional disintegration in the UK, the author thought it was pertinent to include Institutional Theory to, once again, argue changes to FDI activity. This unprecedented event will reshape the UK’s relationship with other countries and powerful supranational organisations. Likewise, Aliber’s theorem is suitable to address the issue of economic disintegration that will arise from the UK’s withdrawal from the EU.

Prior to commencing this project, the author viewed Brexit as a mistake of major proportions because the UK’s economy would suffer greatly from not being able to participate in the Single Market and reap the benefits of regional economic integration. More so because of timing, rather than the ability to sustain itself economically. Considering that the UK was still recovering from the financial crisis, the author thought Brexit was an irresponsible decision. However, it might have also been the trigger to public discontentment which led to the referendum vote to leave the EU. Over the course of this research project, the author has changed opinions regarding this matter. Research study has shown that industries will not respond in the same way to withdrawal from Common Market and, therefore previous assumptions were disproved.

4.3. Limitations

There are several factors that have impacted the results of the research hence causing some limitations to the study. Firstly, by using only secondary data gathered by others meant that the data would be objective, general and appropriateness of data would not always fulfil the purpose of the research. This incites gaps in the research which limits the author’s interpretations on the impact of Brexit, thus rendering the research conclusions incomplete and less accurate.
According to United Nations Conference on Trade and Development (2018), “The components of FDI are equity capital, reinvested earnings and other capital. As countries do not always collect data for each of those components, reported data on FDI are not fully comparable across countries. In particular, data on reinvested earnings, the collection of which depends on company surveys, are often unreported by many countries.” This shows that there is bound to be cross-border data discrepancies evidenced by trustworthy organisations.

Further, multiple theories are needed to explain the whole FDI activity, as the use of a single theory does not always give accurate measures. For instance, the Aliber’s Theorem focuses on strength of currencies and transaction costs to explain FDI. Similarly, Institutional Theory concentrates on the attractiveness of institutions to foreign investors. Meanwhile the OLI paradigm offers the most comprehensive theory for FDI. However, critiques argue it is too broad to accurately pinpoint the determinants for FDI.

In the next section, the author researched the pharmaceutical industry to ascertain the importance of the pharmaceutical industry in the UK economy. The case study on GSK analyses the impact of withdrawing from the EU on the company and pinpoints factors at risk of hindering the company’s ability to attract foreign investment. To ascertain the effect of Brexit on future FDI activity, in relation to factors identified in the case study. To do this, the author uses FDI theories in the literature review.

5. Case study: GlaxoSmithKline

5.1. Pharmaceutical industry in UK: Overview

The pharmaceutical industry has contributed £30.4 billion to the UK economy in 2015 (PwC, 2017). It contributes 10% of the UK’s GDP and it runs a trade surplus of approximately £3 billion (Xu, 2017) which has been growing over the last decade (PwC, 2017). Figure 1 shows the growth of trade within this industry and evidences the steady upward move of imports and exports. The UK’s market value is £26.1 billion and Novartis, GSK and AstraZeneca hold the biggest market share of 4.5%, 4.2% and 2.2% respectively.
The UK has the third highest market value in Europe, 12.5%, lower than Germany and France.

Additionally, the UK market is expected to grow at a compound annual rate of 6.5% until 2021. Conversely, the French market is expected to decelerate and Germany is forecasted to grow a further 3.6%. Overall, the UK expenditure on healthcare represented 9.9% of the country's GDP.

And with concerns of an ageing population, this amount is expected to rise (MarketLine, 2017).
Pharmaceutical companies employ 73,000 people in the UK. However, PwC (2017) estimates that for every 1 job created in pharmaceutical companies, 3.4 jobs are generated indirectly in the supply chain which suggests the employment figure for this sector is in actuality around 312,000 in the UK. Furthermore, the report shows a highly productive sector whose output is equivalent to that of 2.5 jobs, this can be attributed to the knowledge-intensive features of this industry. Appendix 8 shows the GVA level of the Life Sciences sector, of which pharmaceuticals is a part of, indicates this is the second most productive industry in the UK. In comparison to 4 other EU countries – namely Italy, France, Spain and Germany – the sectoral productivity per employee in the UK is 40% higher than GVA in Italy and Germany (appendix 9).

5.2. Impact of Brexit

The UK’s labour force is constituted of UK nationals; EU and non-EU immigrants. In a knowledge-intensive sector, labour is a vital source of innovation and competitive advantage (Royal Pharmaceutical Society, 2017), which is why 42% of labour in this industry works in the Research & Development department (PwC, 2017). A UK pharmaceutical company acknowledged that it targeted potential employees through a global scheme to recruit the most talented applicants. Research attributes labour force to be one of the reasons for growth over the years in this industry (Royal Pharmaceutical Society, 2017). At the moment “17% of Science, Technology, Engineering and Mathematics (STEM) academics in UK research institutions are non-UK EU nationals” (Ayuso-Garcia et al., 2017). Moreover, the company suggested that since non-EU candidates undergo immigration process of obtaining visa and permanent residency status at the moment, one can expect EU immigrants to go through the same process and pointed out that this might delay the recruitment process and cause immigration levels to resemble the flow of Non-EU workers coming into the UK (Royal Pharmaceutical Society, 2017). This will change the landscape of labour competences within this industry, possibly resulting in loss of market knowledge leadership.

The country has achieved global leadership status thanks to its emphasis on research and development which is supported by highly expert labour; partnerships with universities and other European organisations; access to EU research programs and funding granted by the
Between 2007 and 2013 the UK received €8.8 billion in funding from the EU (Ayuso-Garcia et al., 2017). Exiting the European Union will result in loss of funding which is fundamental to companies, for research and development of scientific breakthroughs and maintenance of competitive advantage.

After the vote to withdraw from the EU, firms postponed investments and pipeline projects. Tommy Fanning noted that companies using the UK as a bridge to Continental Europe might move operations to Europe to avoid extra costs and/or trade restrictions, in case the UK does not reach an agreement with the EU to safeguard the industry (The Economist, 2017). Congruently, big pharmaceutical firms are setting up a European facility to mitigate supply chain disruptions, regulations restricting access to market and delays affecting consumer necessities.

After the referendum vote, the industry was very uncertain about their presence in the UK and so companies became more cautious regarding future strategies. Though, the Government has reassured the industry of their efforts to prioritise and protect the pharmaceutical industry. GSK responded positively to this and plans to invest £140m in a manufacturing facility until 2020; however, the company also adjourned investing £350 million at Ulverston. Pharmaceutical companies show varied attitudes towards Brexit, with some companies reaffirming their commitment to the UK by investing in market, whilst others remain hesitant to engage in further projects prior to the finalised withdrawal process (Protel Projects, 2017). The landscape for 2018 is for pharmaceutical firms to continue investing in R&D and further investment in the UK. The government plans to increase funding to life sciences research and to push partnership between firms and universities (Protel Projects, 2018).

### 5.3. GlaxoSmithKline plc.

GlaxoSmithKline is one of the biggest UK pharmaceutical companies with a market share of 4.2% (MarketLine, 2017). Last year the firm reported sales of £11.2 million in US, £7.9 million in Europe and £10.98 million in other regions. Additionally, in 2017 the firm invested in new laboratories in the UK and Singapore (GSK, 2017). After acquiring programmes from BristolMeyers Squibb, the company solidified the Viiv portfolio which they own in partnership with Pfizer. This makes GSK a market leader in HIV treatment and other areas.
After the referendum vote, GSK’s share price increased which shows the strength of the industry. Despite this, pharmaceutical companies, including GSK, have shown concern for changes in the regulatory system post-Brexit. Recently, the European Medicines Agency (EMA) has abandoned its headquarters in London and relocated to Amsterdam (Politico, 2017). Notwithstanding, the UK is known for facilitating cooperation among different organisations and for its legal framework which decreases transaction costs (Heritage Foundation, 2017). Moreover, the impact of Brexit on immigration is expected to negatively affect the firm’s ability to hire the best talent. Arguably the firm’s global presence might offset this since GSK has facilities in many EU countries. As mentioned above, the Royal Pharmaceutical Society (2017) acknowledged that the recruitment process might become slower and as a result the UK market will become less attractive to potential candidates in the future. For EU immigrants already working in the UK pharmaceutical industry, the organisation advocates they will remain in the UK due to highly respected job and high remuneration also. In response to Brexit, the firm is building a drug testing facility in continental Europe (Reuters, 2017) to counteract possible business disruptions. This will grant access to the European market.

Despite the sentiment of uncertainty throughout the industry, GSK invested £140 million in a manufacturing facility in the UK. The pharmaceutical industry is strategically important to the UK government and, so the Government has engaged in talks with the firms regarding Brexit and the future of the UK market and ability to trade. This relationship might benefit hugely the sector as companies exert more influence regarding regulatory changes and in other areas affecting the business.

5.4. Discussion in relation to FDI theories

The UK will undergo institutional disintegration from the European Union which will reshape its regulative components. For the pharmaceutical industry, regulations are of the utmost importance in granting firms with the right to participate in other markets. Acting as a regulatory agent, the UK government will be responsible for deciding whether to adopt EU regulation concerning the pharmaceutical industry or not. If the government decides to implement EU regulation, British firms will benefit from reduced non-tariff barriers and
access to the EU market will be granted at no extra expenses. Furthermore, the firms will maintain its legitimacy as a respectful organisation. The more the British legislation resembles the EU’s regulatory framework, the easier it will be for firms to do business in the European market. Foreign investors look favourably upon common policies as it decreases investment volatility and transaction costs. A weak or detrimental regulatory system would cause inward FDI to decrease in the UK, according to institutional theory. Moreover, the UK is the main European destination for FDI originating in the US because it grants US investors with access to the Single Market and market expertise in many sectors. Evidently, the government should move toward adopting EU regulations to guarantee access to continental Europe, upon which their investment is conditioned.

The relocation of the European Medicines Agency from London signals the rupture of ties with the EU. This might suggest that the UK will be segregated from European cooperation, causing the UK to lose its status of global leader. Ownership-specific advantages might gradually deteriorate, thus causing the market to become less attractive to foreign investors looking to strengthen their firm-specific advantages. Moreover, lack of access to EU funding and collaboration projects threatens the industry of becoming less attractive to FDI. To reduce this risk, GSK is setting up a drug testing facility which will ensure access to the European market. According to institutional theory, the government must decide on the future of the regulatory system in the UK to end uncertainty within the industry and to regain investors’ confidence to invest in the UK pharmaceutical industry.

Being a member of the EU was a location-specific advantage the UK possessed and a factor for foreign firms seeking to exploit market accessibility and reduction in trading costs. Despite no longer being able to provide these advantages to investors, the pharmaceutical industry has a great reputation among many other countries. The British pharmaceutical firms are experts in the industry and have global leadership in many areas.

Labour will also be a determining factor for engaging in foreign direct investment. Much of the UK’s success in attracting FDI is attributed to its highly educated and skilled labour force. Brexit will bring changes to the market dynamic and weaken workforce productivity. In the short-term, trade and labour might be affected negatively due to restrictions in the movement of people and goods. However, the firm’s knowledge and management benefits are determining factors for FDI flows in this industry.
The UK economy grew after the referendum which firms believe is important for their own progress. The devaluation of the sterling pound posed an opportunity for investors to capitalise on their higher purchasing power. The country’s economic strength and attractiveness is evident from the £196 billion inward flow it received in 2016 (Appendix 4), the same year it voted to leave the European Union.

GSK could still receive investment driven by market-seeking motives as the UK’s market is valued at £26.1 billion and is forecasted to grow in the next few years, unlike the French market. Moreover, competing foreign firms would be drawn to exploiting this growing market and to prevent GSK and other British pharmaceutical firms from dominating the market. Notably, the Eclectic paradigm recognizes that ownership-specific advantages dictate a firm’s decision to engage in FDI and location and internalisation advantages dictate destination of investment and entry mode.

The future of the pharmaceutical industry is dependent on the government’s Brexit strategy. Labour, regulations and access to research cooperation present the most pertinent aspects of the industry’s attractiveness to foreign investment which are being threatened by Brexit. The government should work towards providing GSK and other pharmaceutical firms the most sustainable market conditions and regulations that will secure the industry’s position as a global leader in research and innovation.

The next chapter is an account of the main concerns about the topic. The author will discuss the strong points and flaws of the research project and limitations of the study. Suggestions on areas that require further study will be given, followed by an introspection on how the research project impacted individual opinion on the topic and a summary of the research project.

6. Conclusion

In this chapter the author will conclude the results to research question and project aims. As stated in Chapter 1, the research objectives are: (1) to show the importance of the pharmaceutical industry to the UK economy; (2) to analyse the impact of Brexit on the industry’s ability to attract foreign direct investment, using FDI theories; (3) to pinpoint future
of FDI inflows in the pharmaceutical industry, with focus on GSK. The author believes the research accomplished objectives (2) and (3) thanks to the appropriate use of FDI theories as the most suitable tool to explain and predict FDI activity. Research into the industry with regard to the UK economy fulfilled objective (1). However, the author feels that more research is necessary for a more accurate forecast. Data unavailability and ambiguous government negotiation strategy posed an obstacle to this research. As such, the author accepts that research question has been answered on some levels. Given the current situation, the author’s analysis could not reach deeper levels due to various unknown variables.

The UK’s decision to leave the European Union came as a surprise. This unprecedented event fomented uncertainty among society, investors, organisations and countries because the future of the UK outside of the EU is unclear. Less than a year remains until the UK officially withdraws from the alliance and both parties have reached no consensus regarding their future relationship. The pharmaceutical industry runs a trade surplus of £3 billion and employs 73,000 workers directly and creates even more jobs indirectly. The industry is a global leader in research and innovation and very attractive to foreign investors. This industry caters the domestic market worth £26.1 billion which is projected to grow further in the coming years. The importance of this industry to the UK suggests the government should be working towards providing sustainable market conditions under a regulatory framework that will effectively assist business activity.

Brexit has threatened to hinder the industry’s competitive advantage. This competitive advantage has been achieved through highly skilled labour, research cooperation leading to scientific breakthroughs, access to information and participation in the Single Market. This institutional disintegration will affect the regulatory framework which dictates the firm’s ability to participate in other markets. Moreover, the UK’s strong position in banning the free movement of people will negatively affect the industry’s ability to recruit the best talent. At the moment, 17% of STEM students are EU nationals. Imposing bans on immigration will have adverse effects on the country’s quality of labour. A highly skilled and educated workforce is essential for GlaxoSmithKline to strive in the knowledge-intensive market they operate in. Furthermore, UK firms will be excluded from projects funded by the EU where countries collaborate in the research of scientific breakthroughs.
Institutional theory explains MNEs attitudes toward formal and informal institutions; as such the UK disintegration is a novelty. This theory pinpoints factors such as economic growth and societal values to be a determinant factor for MNE investment. In 2016, the UK economy grew despite the referendum vote which signals their economic strength. Moreover, Aliber’s Theorem illustrates the benefits companies try to exploit regarding currency value. The theory suggests companies in stronger economies will engage in FDI in firms with weaker economies to capitalize on their high purchasing power. Likewise, the UK economy saw a surge in investment, totalling FDI inflows to £196 billion. As the sterling pound dropped in value, other economies took advantage of this to benefit from cheaper transaction costs. Furthermore, Dunning highlights firms will engage in FDI to complement missing O, L or I advantages in markets where these advantages are present. Despite potential loss of access to the single market, the UK remains the global leader in the pharmaceutical industry and these intangible Ownership-specific advantages are vital in this knowledge-intensive market.

To develop a theoretical framework, the author read important contributions made by scholars to the field of FDI theories. Using theoretical frameworks to determine how Brexit will affect the attractiveness of pharmaceutical industry provided the author with academic knowledge of FDI activity. These theories provided guidance for structuring and interpreting the findings. Thus, eliminating any possible bias from the author and granting credibility to assumptions and suggestions as these were based on the works and empirical studies from scholars in the field of International Business and foreign direct investment. During research of relevant literature, the author recognised a lack of analysis of FDI activity using relevant theories. Instead, analyses on the impact of Brexit were based on economic reasoning.

The ambiguity of the government’s negotiation strategy and objectives makes it difficult to accurately determine the future of inward FDI in the pharmaceutical industry. The author believes that if the position of the government was clearer and if there was transparency of Brexit plans, the analysis could have benefited greatly and the author could have examine the response of investors to Brexit more accurately. The author believes that timing of the research project was not the best. Furthermore, the author would like to have tackled the project at a later stage of negotiations as this would have resulted in superior contribution to the topic. This way, the author fears the assumptions to be of speculative nature, considering the stage of the withdrawal process.
Having said this, the author concludes that the government is demonstrating an apparent lack of direction in Brexit negotiations which amplifies market uncertainty and investment stagnation into the UK. It also makes it extremely hard for specialists to forecast MNE activity. This limitation results in speculative assumptions which diminish the accuracy of the results of the research project. Consequently, this limits the study’s credibility. Until the government hands in their negotiation proposal in October or the withdrawal process is finalised, investment into the UK will suffer greatly.

The author suggests scholars to explore the topic of economic disintegration and the effects of this reversal. After the UK’s vote to leave the EU other countries experienced public discontentment for the economic integration of Europe, such as France and the Netherlands. Given the possibility of other countries undergoing institutional disintegration, this is an area worth exploring.

The author’s opinion on this matter was decidedly affected by this research project. The author now approaches FDI activity and industries response to market changes under a pragmatic philosophy. Throughout the course of this project, the author realised that industries should be analysed separately, as they all react differently given their diverse specifications. Additionally, analysing and comparing two firms would have contrasted this difference in industries more clearly. Furthermore, the use of theoretical frameworks was essential in appropriately determining attractiveness factors for firms to engage in FDI.

In summary, this research project tackles the effects of the unique process of withdrawal from the EU in regard to one the UK’s most important industries, the Pharmaceutical industry. The author used FDI theories to correctly analyse investors’ attitudes to Brexit. The pharmaceutical industry and many other UK sectors are suffering from the governments’ inability to fulfil a strategic course of action for the future of the relationship between the UK and the EU. Therefore, the general sentiment is that firms have stagnated investments until further developments.
7. Appendices

Appendix 1

UK FDI Outward stocks, as a % of GDP

Source: OECD data.

Appendix 2

UK FDI Inward stocks, as a % of GDP

Source: OECD data.
Appendix 3

UK Investment (GFCF), as a % of GDP

Source: OECD data.
## Appendix 4

**FDI inward flows of G7 countries, in millions of US dollars**

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</thead>
<tbody>
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<td>4 888</td>
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<td>2 728</td>
<td>10 820</td>
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<td>78 129</td>
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<td>38 300</td>
<td>801</td>
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<td>28 399</td>
<td>39 647</td>
<td>43 118</td>
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<td>59 008</td>
<td>45 631</td>
<td>37 297</td>
<td>24 237</td>
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<td>25 340</td>
<td>63 511</td>
<td>37 521</td>
<td>30 735</td>
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<td>-3 005</td>
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<td>476 684</td>
<td>468 330</td>
<td>286 854</td>
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Source: OECD data.
Appendix 5

FDI Restrictiveness of the UK in comparison with OECD countries

Source: OECD data.

Appendix 6

UK outward and inward earnings by continent between 2012 to 2016, £ billion

Source: ONS.gov.uk
Appendix 7

FDI Projects in the UK, 2016-2017

<table>
<thead>
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<th>Foreign direct investment (FDI)</th>
<th>United Kingdom</th>
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<td></td>
<td>2015-16</td>
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<tr>
<td>Total projects</td>
<td>2,213</td>
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<tr>
<td>- Involved projects</td>
<td>1,731</td>
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<tr>
<td>Total jobs</td>
<td>115,974</td>
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<tr>
<td>- New jobs</td>
<td>82,650</td>
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<tr>
<td>- Safe jobs</td>
<td>33,324</td>
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</table>

Source: Department for International Trade.

Appendix 8

Direct GVA of selected sectors, current prices, 2015, £ billion

Sources: PwC, sector-related Annual Business Survey.
Appendix 9

Direct GVA per employee of manufacture of pharmaceutical products, current prices, 2014, £'000

Fig 3.3: Direct GVA per employee of manufacture of pharmaceutical products, current prices, 2014, £'000

<table>
<thead>
<tr>
<th>Country</th>
<th>GVA (£'000)</th>
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<td>United Kingdom</td>
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<tr>
<td>Italy</td>
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<td>Germany</td>
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<td>Spain</td>
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<td>France</td>
<td>86</td>
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Sources: PwC analysis, Eurostat.
8. References


