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Biographical Statement

I am a principal lecturer at Sheffield Business School, Sheffield Hallam University, and subject group leader. My research interests are in the area of foreign direct investment, and the impacts of Brexit on international business activity.

Abstract : In June 2016, the UK voted to leave the EU, and the economic implications of "Brexit" are starting to take on a clearer focus. This paper seeks to outline the patterns of inward FDI to the UK. The paper analyses the possible impacts of different Brexit scenarios on inward FDI to the UK. The paper's key arguments include that "harder" forms of Brexit are likely to have worse outcomes in terms of inward FDI to the UK, with export platform FDI potentially significantly affected. The effects of Brexit could also be diverse in different industries, given the different motives for FDI, and also diverse in terms of the type of activity of the FDI. Moreover, given the patterns of FDI in the UK, the regional impacts of Brexit will not be evenly spread. The findings have clear policy implications surrounding the Brexit negotiation process.

Keywords : Foreign Direct Investment, FDI Policy, Inward FDI, Brexit, European Union, UK

1. Introduction

FDI has been seen as an important component of the UK economy. Inward FDI into the UK amounted to $39.6 bn in 2015 (Unctad 2016), and indeed, despite slow economic growth between 2010 and 2015, these flows have held steady between approximately $40bn and $60bn. Such flows have led to a stock of inward FDI in the UK of $1.5tn by 2015. This FDI has a range of well documented possible advantages for the UK economy.

Many studies, though not all, suggest that inward FDI boosts GDP. The positive link is seen by Beugelsdijk et al (2008) to be greater for richer countries such as the UK. The mechanisms for this link are beneficial effects that inward FDI may bring, such as more technological know-how, enhanced workforce skills, greater integration of local firms in the global economy and higher levels of competition (OECD, 2002).

Moreover, there is broad agreement that EU membership has offered the UK benefits in terms of inward FDI. For instance, it is estimated that as a result of FDI attracted due to EU membership, GDP increased by around 2.25% (Pain and Young 2004). More recently, Campos and Coricelli (2015) found that EU membership enhanced UK inward FDI by 25 - 30%. More generally, this pattern has been found to hold for other EU countries, with Straathof et al (2008) claiming that EU membership increases inward FDI stocks by 14% from non-EU countries, and by 28% from other EU members. Similarly Dhingra et al (2016) estimated that EU membership raised FDI in members by about 28%, and that this FDI came from both EU and non-EU countries.

However, there has also been research that suggests that EU membership does not necessarily bring about a positive impact for the UK in terms of FDI. For instance, Burrage (2012) noted that the importance of EU membership and the single market for inward FDI into the UK had been exaggerated by EU supporters, and that European countries outside the EU had increased their inward FDI significantly.

In terms of the motives for the inward FDI to the UK, it appears that market seeking motives, linked to access to the Single European Market (SEM), is the main incentive to invest in the UK (Slaughter 2013). Similarly, the "export platform effect", where international companies might invest in a region so as to allow their exports and imports to benefit from preferential market access to other countries within the host region, or indeed to regions beyond the host region, has also been posited as a significant motive (Ekholm et al, 2003; Hanson et al, 2005).

Investors, especially those from countries outside the EU, such as from Japan and the US, can decide to establish regional manufacturing hubs centred in the UK in order to access the EU single market (Booth and Howarth, 2012). Indeed, Springford and Tilford (2014) claimed that such FDI could be under threat in the event of the UK leaving the EU.

Linked to this, multinational companies (MNCs) also have complex supply chains in the EU. As such, leaving the EU could affect their ability to move materials, components, systems and people easily, and at minimal costs, between the UK and the EU, with possible negative impacts on inward UK FDI.

More generally, fears have been expressed about the effects of uncertainty regarding the UK's precise post Brexit trade and investment relationship with the EU on inward FDI to the UK. Given that the negotiations could take up to 2 years following article 50 being invoked, the timescale of which itself is uncertain, there is potential for a protracted period of uncertainty.

The factors that determine inward FDI are numerous and complex, such that the research into EU membership and inward FDI is not all consistent. While there is no general consensus as to the overall magnitude of the effect membership has, the overall balance suggests a positive effect. Despite these findings, there is still much uncertainty as to the actual effects of Brexit on inward FDI to the UK. One reason for this is due to the fact that there is no real comparable example of a developed economy leaving such a highly evolved form of regional integration, so historical comparisons are not possible. In addition, the precise agreement that emerges between the EU and the UK is uncertain, despite Government claims to the contrary, and it is increasingly suggested that a clear final agreement could take years to come to fruition (The Independent, 2016).

The UK has a close relationship with the EU in terms of FDI. The EU as a whole is the largest source of inward FDI to the UK, with just under half of the total inflows (ONS 2014). It has been asserted by the Brexit side that the UK could reduce its reliance on the EU as a source of inward FDI, and seek to re-orient itself towards the rest of the world, especially emerging markets. Indeed, UKTI (2015) observed that the UK has indeed been widening its base of source countries, with FDI from 70 countries, as the UK tries to target FDI from emerging markets. However, some of this FDI could be seeking access to EU markets. Such FDI could be jeopardised by some Brexit scenarios.

Despite such challenges in establishing the impact of Brexit on inward FDI to the UK, this paper will seek to consider the possible impact of different Brexit scenarios on inward FDI. In order to do this, firstly some recent trends in inward FDI to the UK are examined. This is then followed by discussion of different possible exit settlements and whether these would be in the UK's inward FDI interest, given the profile and pattern of the UK's recent inward FDI flows. In addition, the policy implications of these exit settlements are considered.

As such, this paper seeks to build on quantitative analyses and other literature to provide a qualitative assessment of some of the potential impacts of different Brexit outcomes on UK inward FDI. To do this, there is focus on patterns of FDI into the UK, and how these link to possible Brexit scenarios. This allows for a fine-grained analysis, with for instance coverage of issues such as how differently motivated investments might be affected. More specifically, do firms invest in the UK in order to try and gain benefits to better compete in global markets, known as efficiency seeking FDI. Or, are firms more motivated by market seeking motives, either in the UK or regionally. Or finally, do firms invest more in acquiring strategic assets such as human skills, brands or physical assets. It is considered that investment for natural resource seeking reasons is less significant in the UK than the other motives, except in a narrow range of industries. (Dunning 2000).

There is also focus on possible impacts in different sectors, and different types of activity with respect to inward FDI, and regional impacts on FDI into the UK. These issues are also related specifically to the different Brexit scenarios. Lastly, this paper also includes some early post Brexit vote indications of foreign investor interest in key inward FDI sectors of the UK economy. The paper can only offer tentative conclusions as to potential impacts, given the high degree of uncertainty, and the lack of hard data involved.

2. UK inward FDI patterns

The UK has had a strong track record in terms of attracting inward FDI. Some reasons for this are summarised in box 1 below :

A means to export tariff free to the rest of the EU. Ernst and Young (2016) survey showed 78% of respondents noted the importance of access to the European market.

Highly educated workforce.

A labour market with a high degree of flexibility, combined with a strong rule of law (FDI, 2016).

Quality of life, diversity and culture, quality of telecoms and the stability of the social climate (Ernst and Young, 2016).

These advantages of the UK economy have led to high levels of inward FDI flows over recent years, with some achievements as outlined in box 2 below :

$ 39.5bn in 2015, equivalent to 8% of all fixed capital formation in the UK, and 9% of all inward EU FDI (World Investment Report, 2016).

2015 was reported as a record year for greenfield inward investment projects in the UK, with 1065 projects, a 20% increase on 2014, creating 42000 jobs (Ernst and Young, 2016). [i]

An even larger increase of 38% in inward Mergers and Acquisitions (M&A's). Department for International Trade (2016).

In terms of the types of projects that were invested in by foreign investors coming to the UK, a mixed picture emerged from Ernst and Young (2016), as outlined in box 3 below :

Large increases in FDI in HQs in the UK, with 155 projects, representing 53% of European market share in 2015 (Ernst and Young, 2016), with similar increases noted by UKTI (2015).

A large increase in R&D projects into the UK, representing 26% of the European market share.

Manufacturing FDI was up 11%, but this was only 12% of the European market share, as the UK has been less of a destination in this sector, with investors here preferring areas such as the CEECs.

An increase in FDI of 11% in advanced manufacturing in 2015-16, but even larger increases in electronics and telecommunications, creative industries and IT (UKTI 2016).

Inward FDI to the UK in logistics, sales and marketing were down slightly in 2015.

The UK is a leading investment destination for software, business services and financial intermediation, and also significant investments in car assembly, machinery and equipment, scientific research, construction and retail (Ernst and Young, 2016).

With respect to sources of inward FDI, EU countries comprised a little less than half of the stock in the UK in 2014, compared to just under a quarter from the US (Miller, 2016). However, despite the clear importance of the EU as a source of FDI, UKTI (2015) contend that the UK's source of FDI has broadened, in part due to its strategy of attracting FDI from emerging markets, borne out by figures from Department for International Trade (2016) showing non EU sources to represent more than two thirds of the number of inward UK FDI projects in 2015-16.

The UK has typically been the top destination for inward FDI within Europe for a number of years. Data highlights that over the previous five years, the UK received more than one third of total greenfield FDI flows into western Europe, and nearly half in 2015 (Foreign Direct Investment 2016). Indeed, 2015 was also seen as a record year for FDI into Europe as a whole. Of this investment, the UK attracted 21% of projects, with Germany on 19% (Ernst and Young, 2016). There were though concerns that Germany might be catching up with the UK in terms of inward FDI, and indeed in terms of new FDI from first time investors, Germany performed best in Europe.

In terms of sectors, Loewendahl et al (2016) note that the UK’s share of inward EU FDI projects between 2011 and April 2016 was highest, at over 30%, in the Creative Industries and Financial Services, with Professionals Services and ICT & Electronics attracting over 25% of projects to the EU.

In terms of the destination of FDI, Loewendahl (2001) noted that efficiency seeking FDI can be drawn to both core and non core regions as TNC's desire to locate in cost efficient places, and FDI can also be market seeking in core and non core regions. However, Makino et al (2005) claimed that it might be harder for non core areas to attract strategic asset seeking FDI, given their lower levels of cluster development, R&D and labour skills. In fact, Fallon and Cook (2013) claim that strategic assets only seem to be a key determinant of FDI location in the core Southeast region of the UK. Moreover, the AT Kearney FDI confidence Index (2016) finds that respondents saw market seeking and efficiency seeking as of primary importance in terms of determinants of FDI location choice. However, Villaverde and Maza (2015) cite Capello et al. (2011) as claiming that agglomeration and human capital are key determinants of FDI location, with market access and labour costs less significant.

In addition, Basile et al (2008) note that countries eligible for EU regional policy funds were more attractive than other regions. Clearly this has potential significance for Brexit, given the potential loss of regional funds that could occur in the UK.

2.1 Geographical distribution of inward FDI to the UK

Historically, there was a mixed picture with respect to the regional destination of inward FDI. For instance, Dimitropoulou et al (2013) note that London is more likely to receive new investments compared to other regions, but that other regions tend to be more likely to receive expansions of existing activity, in all sectors of the economy. In addition, some regions, such as Yorkshire, Wales, the South West and the West Midlands are more likely to receive FDI relating to manufacturing and distribution as compared to London, while London was more likely to receive FDI associated with HQ activities (ibid).

Geographically, the picture of investments into the UK has changed recently, with much higher growth outside of London and the South East. Regions with high growth in 2015 were the North West, North East, Yorkshire and Scotland (Ernst and Young, 2016). This seems to confirm the view of Jones and Wren (2015) that service sector FDI has become more evenly dispersed according to where service activity is located. However, Dimitropoulou et al (2013) noted that inward FDI related to R&D and HQ activity tended to occur in the southern and eastern regions of the UK.

In terms of the destination of FDI, Dimitropoulou et al (2013) note that, with the exception of the South West, all regions are more likely to receive EU investments than London. As such, any threat to inward investments from the EU could jeopardise the performance of the English regions.

3. The potential impacts on UK inward FDI of different Brexit outcomes

Despite the economic benefits of EU membership noted above, it has been suggested by Crafts (2016) that Brexit does not necessarily mean that the UK would lose all of the economic benefits that have been accrued by EU membership, but that the "wrong sort of exit" could lead to costs.

A number of different post Brexit scenarios have been discussed in the run-up to, and in the aftermath of, the UK referendum. The main features of some of these scenarios are outlined below in Box 4, and this is followed by discussion of the implications of these scenarios for inward FDI to the UK, given the patterns in UK inward FDI noted above. The announcement of the Government's position on Brexit in January 2017 seems to make a "harder" form of Brexit more likely, given insistence on the control of migration from the EU, apparently at odds with some of the scenarios below. However, given the stated desire for the UK to have the "greatest possible access" to the single market, it perhaps remains unclear what outcome may emerge from the negotiations, especially given the lack of a decisive outcome to the June 2017 election. In addition, talk of possible transitional deals places further uncertainty over the outcome. As such, a range of possible scenarios are outlined below. It is conceivable that the negotiated outcome may not neatly fit into any one of these, but instead incorporate features of more than one.

Box 4 Potential Brexit Outcomes

Scenario 1 : Within the European Economic Area (EEA) - the "Norwegian option"

"Closest relationship with the EU" (Booth and Howarth 2012, p 30).

Access to EU SEM, and Includes "Four freedoms", including free movement of labour (Jongeneel et al 2016).

Members obliged to follow EU rules - e.g. competition policy, state aid.

Members can control external trade policies.

Adopt most EU laws, such as product regulations and employment laws, but does not have much influence over the shaping of those laws (Booth and Howarth 2012).

Possible extra administration costs, such as more complex Rules of Origin (ROO), as no longer in the EU Customs Union, and more stringent customs checks (HM Treasury 2016). Rules of origin are used to assess the national source of a product, and can be used to determine the level of duties and restrictions on imports. (WTO 2017).

Existing concerns in the EU over the working of the EEA (Piris 2016) and Norwegian concerns over UK joining EFTA (Wintour, 2016).

Continued UK financial contributions to the EU.

"Most favourable for the UK" (Ebell and Warren 2016) - access to the EEA and access to financial services markets, would reduce overall UK inward FDI by a mid point estimate of 9.7% by 2030. This is similar to the Findings of HM Treasury (2016) who saw EEA as causing a 10% reduction in UK inward FDI after 15 years.

Scenario 2 : The Swiss model

Based on sectoral agreements - Switzerland has 120 sectoral agreements with the EU.

Swiss relations with the EU are bilateral, as it is not a member of the EEA, although it is a member of EFTA. (Booth and Howarth 2012).

Swiss companies get tariff free access to the SEM in the areas covered

Free movement of people, and access to the EU's research programmes.

No influence over decisions made in the EU, without the presence in EU institutions that EEA countries enjoy.

Agreements are limited to goods trade, with no comprehensive provision for services trade, including trade in financial services where the UK has a comparative advantage.

As in Norwegian model above, outside of the EU Customs Union : more complex and costly EU ROO would be imposed on UK exports to the EU.

Existing EU concerns about Swiss relationship, given constant negotiations around equivalence of Swiss rules, and the issue of Swiss quotas on EU immigration (Piris 2016).

Ebell and Warren (2016) assert that a Swiss style agreement, with free trade in goods, but with no free trade in services, and no access to financial services markets, would reduce UK inward FDI by a mid-point estimate of 17.1% by 2030.

Scenario 3 : The UK negotiates a Free Trade Agreement (FTA) with the EU

FTAs come in different forms and they do not always eradicate tariffs completely, and do not always cover non-tariff barriers to trade, such as different standards, which are important in many sectors.

Recent EU FTAs, such as with Canada (Comprehensive Economic and Trade Agreement, CETA), are more wide-ranging in their scope than previous FTAs (Piris 2016).

In CETA, tariffs are to be removed in some sectors, phased out in others, but differences in regulations would remain. Financial services were not part of this agreement.

Seen by some, such as Piris (2016) as the most likely outcome, seemingly reinforced by the UK Government's stance on restricting inward migration that make the scenarios above appear unlikely.

HM Treasury (2016) claimed that such an outcome would reduce inward FDI to the UK by between 15-20% after 15 years.

Loewendahl et al (2016) claim that a lack of access to the SEM could render 41% of inward FDI into the UK at medium or high risk.

Scenario 4 : The WTO option

The fall-back position in the event of the above scenarios not proving practically or politically possible or desirable, would be to use WTO rules as a basis to trade with the EU.

This would be the loosest relationship with the EU, with a lack of free trade in both goods and services with the EU.

Such an outcome would place the UK in a similar position to countries lacking trade agreements with the EU such as China and India.

UK exporters to the EU would be faced with the Common External Tariff (CET).
It is anticipated that there would be a re-establishment of customs controls at borders with EU members.

There could be a wider range of both tariff and non-tariff barriers.

The UK could try to either, keep zero tariffs with the EU and reduce tariffs with other (non preferential) WTO members, or seek to raise tariffs with EU members: either position could have negative implications for the UK (HM Treasury 2016).

Ebell and Warren (2016) assert that a WTO style agreement, with no membership of free trade agreements for goods or services with the EU, would reduce UK inward FDI by a mid-point estimate of 23.7%, the worst outcome for the UK. Similarly, HM Treasury (2016) claimed that such an outcome would reduce inward FDI to the UK by between 18-26% after 15 years, also the worst outcome for the UK.

3.1 Brexit Scenarios and Motives for inward FDI to the UK

This section considers a number of themes relevant to inward FDI flows to the UK, with respect to the different Brexit scenarios outlined above. This takes the form of qualitative analysis of likely impacts on inward FDI to the UK in the light of the UK FDI patterns identified in section 2. The themes considered are the motives for the FDI, the type of activity the FDI covers, the sector the FDI covers, the regional effects in the UK and the source of the FDI.

It has been noted by Loewendahl et al (2016) that (UK) market seeking FDI, in industries such as retail, construction, transport and electricity is less likely to be affected by Brexit than FDI with other motives, as the external arrangements of the UK are often less significant here. This lower potential effect on market seeking FDI could also potentially occur due to exchange rate effects, if the depreciated rate of sterling is sustained over the period of Brexit. Moreover, if the UK is indeed to broaden the source of its inward FDI away from the EU, as noted in section 2, then much of this potential FDI will be market seeking, and thus less vulnerable to Brexit.

However, in terms of the UK as a destination for export platform FDI, all the Brexit outcomes outlined in section 3 could adversely affect investors' perceptions of the UK. One reason for this is the greater complexity of ROO making cross border trade more complex and costly. The UK economy has many industries which are regionally and globally integrated in the form of regional and global production networks. Given that companies in such industries rely on the easy and low cost transfer of goods, inward FDI in these industries might be negatively impacted by such changes to the ROO. Indeed, Stewart-Brown and Bungay (2012) note that adapting to ROO based trade could impinge upon the free movement of goods to an extent that would be unacceptable to foreign owned companies in sectors such as cars, chemicals and processed foods.

Beyond ROO, either an FTA or a WTO outcome is perhaps more likely than a Norwegian or Swiss style outcome to adversely affect export platform FDI. This is due to the lack of certainty over market access in different sectors, higher costs of access that this outcome would entail, and possible differences in product regulations between the UK and the EU. Indeed, in the Ernst and Young survey, more than half of respondents were of the opinion that a significant deterioration in access to the Single European market would adversely affect their perception of the UK as an FDI destination (Ernst and Young, 2016).

This would particularly be the case in industries with integrated supply chains, such as the car industry. For instance, according to the Society of Motor Manufacturers and Traders figures, about 78% of cars produced in UK factories in the first half of 2016 were exported, and about 60% of parts supplied to UK factories were imported, mainly from the EU, leading to surveyed SMMT members' concerns about the adverse effects of tariffs and other barriers between the UK and the EU (The Guardian 2016a).

Indeed, such fears were encapsulated in the letter from Tokyo to the EU and the UK representing Japanese companies with significant investments in the UK, warning of the need to ensure continuation of current tariff rates and customs procedures between the UK and the EU (The Guardian 2016b). Subsequently Nissan, after voicing such concerns, appeared to receive promises from the UK Government of no extra tariffs or other bureaucratic burdens, benefits of the SEM and Customs Union. These promises have been viewed as hard to deliver, given the UK's stance on inward migration, or as proving very costly to the taxpayer across the economy if they involve compensating foreign investors in some way for extra trade burdens caused by Brexit (The Guardian 2016c).

Such fears of investors explains the assertion by Loewendahl et al (2016) that a lack of access to the SEM could render 41% of inward FDI into the UK at medium or high risk.

The WTO outcome (not ruled out by Theresa May in her January 2017 statement) could be the worst outcome due to concerns noted above for an FTA outcome, plus concerns regarding customs controls that a WTO agreement would entail for firms selling across the EU. Export seeking FDI might be significantly at risk in the WTO scenario, given the higher costs and complexity of investing in the UK and selling across the EU. Firms exporting from the UK may have to pay the EU CET, which could be a threat to FDI in some sectors. Piris (2016) notes that this tariff is 10% on car engines, and that such tariffs could mean producers relocating such production from the UK to the EU. Set against these risks, though, there is the possibility that some companies might invest more in the UK in the advent of external tariffs with the EU, a process referred to as "tariff jumping" (Blonigen et al 2004). Indeed, in this context, Peugeot vowed to increase the company's UK presence in the advent of a hard Brexit, since imposed tariffs could lead to more sourcing of components in the UK (Financial Times 2017).

However, efficiency seeking FDI into the UK could also be at threat, particularly where such FDI also involves exports (and imports). This would especially be the case in terms of an outcome outside of the SEM, where extra trade related costs could undermine any efficiency benefits that foreign investors may enjoy in the UK. In this context, FDI could be at risk in sectors where the UK has a strong recent record of inward FDI, such as the automotive, clothing, footwear and fashion sectors (UKTI 2015).

The above implies a negative post Brexit outcome for inward UK FDI if the AT Kearney survey (2016) is correct about market and efficiency seeking motives for FDI being paramount. However there could potentially be a less negative impact if as Capello (2011) asserts, FDI into the UK is more attracted for reasons such as agglomeration and human capital. However, the post Brexit prospects regarding such strategic asset seeking FDI are perhaps even more uncertain. On the one hand intuitively one might expect that foreign investors that seek strategic assets in the UK might be less deterred by higher trade costs noted above, and more committed to the UK as a long term FDI location. However, any outcome (i.e. potentially all outcomes other than a Norwegian or Swiss style outcome) that threatened the free movement of labour could undermine strategic asset seeking FDI to the UK, as often such FDI relies in no small part on EU labour. This could impact on a range of sectors, as noted below in section 3.3 below. Strategic asset seeking FDI is also considered in section 3.2 below.

3.2 Impacts of Brexit Scenarios on the type of activity of FDI

In terms of the type of activity of the inward UK FDI, section 2 noted a recent upsurge in R&D related FDI. Arguably, the EEA, and to a lesser extent the Swiss model, would seem to be the most likely outcome to preserve this type of FDI, in part due to the retained free movement of labour in these outcomes. Free movement of labour can often play a key role in R&D projects, which can be international and collaborative in nature (Royal Society 2016).

In addition, there have been concerns about Brexit leading to substantially less funding for R&D in the UK, threatening FDI. However, Norway, within the EEA, has received substantial research funding (Bansel-Branch and Welsh 2016), a finding that questions this outcome. Such funding would appear to be unlikely in other scenarios, although Switzerland has partial access to Horizon 2020. This is a concern given low levels of state and private R&D expenditure in the UK, a concern perhaps shared by the UK Government in its 2016 Autumn Statement, promising an extra £2bn to be spent on science and technology research and development (The Telegraph, 2016a). The counter view has though been put forward that Brexit could impact positively on companies' ability to attract non-EU scientific talent, such as expressed by Dyson (Daily Telegraph, 2016b).

Similarly, the UK performs well with respect to FDI in HQ activity. Here again, it appears that an EEA outcome would be most advantageous for continued FDI. The free movement of labour in the EEA is likely to remain attractive to investors in this type of activity. Indeed, Loewendahl et al (2016) note the importance of EU talent as a locational determinant of R&D, HQ and outsourcing projects within FDI in the UK.

3.3 FDI Sectoral Impacts of Brexit Scenarios

As noted in section 2, two important sectors for inward FDI in the UK are the car and financial sectors. Dinghra et al (2016) noted that Brexit could have an adverse impact on these two sectors. They envisaged UK car production cuts of up to 12%, depending on the Brexit outcome, implying negative implications for FDI in this sector. Under an FTA outcome, there could also be potential challenges for the UK in terms of different product standards. For example, Piris (2016) notes that under the CETA agreement, cars made to Canadian standards can not be sold in the EU.

Such an uncertain situation facing the UK in terms of divergent product standards could have adverse implications for FDI into the UK. It is unclear whether the UK would be willing to accept the obligations the EU would wish to place on the UK in order for it to achieve satisfactory access to EU markets. The obligations could include the UK adopting EU legislation on the SEM. Potentially the EEA appears the best option for the car sector given the integrated nature of supply chains, and the retained market access here, a point discussed above in section 3.1. Nissan for instance appears to be now less certain of its UK future, with a stated review of the competitiveness of the UK plant after the EU outcome is clear, a position echoed by Toyota (Guardian 2017a). Overall, the Society of Motor manufacturers and traders claimed that investment in the UK industry fell in 2016 after years of growth, claiming that some investment decisions were on hold amid the lack of clarity around Brexit (BBC, 2017).

In terms of the impact on the financial services industry, a study by PWC (2016b) asserted there would be a negative impact, with gross value added reduced by 5.7% by 2020 under a FTA Brexit outcome, and 9.5% under a WTO outcome. There are concerns that the loss of free movement would have negative consequences for the City of London's position. Dinghra et al (2016) also foresaw negative repercussions for the financial services industry, if there were to be restrictions on companies in the sector being able to access markets in the rest of the EU. Indeed, it has been noted that the ability of firms to continue being able to do this in a post Brexit scenario is far from certain (Jenkins 2016). For instance, Begg and Featherstone (2016) note such market access is threatened by the fact that the UK has a large trade surplus with the EU in this industry, and business services more generally, which could constrain the ability of the UK to negotiate good access here.

In terms of Brexit, an EEA outcome might be the only outcome to guarantee EU market access for financial firms based in the UK. Indeed, a recent PWC report suggests that the UK would need to be in the EEA in order to benefit from "passporting" rights to access the SEM. Passporting gives banks, including those from outside the European Economic Area (EEA), the right to open branches or provide cross border services in any other EEA country without seeking further authorisation. As such, the loss of these rights could see London's pre-eminent position as an EU financial centre compromised, as activity is leaked to other cities, such as Dublin, Paris, Luxembourg and Frankfurt (PWC, 2016a). In FDI terms, the threat to the industry seems pronounced from non EU firms, especially those investing for market seeking motives within the EU market. Indeed, Russia's VTB Bank became the first big bank to claim it would move its investment banking headquarters out of the UK in the light of Brexit uncertainty (The Independent 2016b). Prudential has also warned that it could relocate its fund management division to another EU financial centre (Times 2016a). More specifically, there are threats from Brexit to London's position as the centre of euro-clearing for derivatives, causing Japanese financial institutions for instance to consider their location in London (Guardian 2016d). The fear for the UK is that the fragmentation of the EU's financial rules will make it harder for companies from outside the EU to operate in the EU (Financial Times 2016a). At the time of writing, the situation in the industry is unclear, though several banks have discussed re-locating activity from London. For instance, HSBC and UBS have each stated they will move up to 1000 jobs, while, depending on the outcome of Brexit, Goldman Sachs are considering moving 3000 jobs, and JP Morgan 4000, though this can be set against the 360000 jobs in financial services in greater London (BBC 2017b).

In short, then, the outlook for FDI in the sector is very uncertain depending on the Brexit outcome. This uncertainty is exemplified by CityUK's (2016) assertion that Brexit could cost 4000 jobs if the UK were outside the EEA, but with passporting and equivalence meaning similar access to the SEM, but a possible 35000 lost jobs if the UK had a WTO outcome, without regulatory equivalence.

Fears about such "passporting" rights have also been expressed in terms of another of the UK industries identified in section 2 as a large recipient of inward FDI. A lack of such rights in the software industry may constrain the ability of UK based companies to launch their products in the EU (Times, 2016b). In terms of the software industry, it has also been claimed that UK based start-ups could encounter issues recruiting software engineers from overseas, a source of talent seen as vital to the sector (ibid). In fact since the referendum, any relocations of tech start-ups appears to be relatively modest so far, with for instance only 5 small firms having relocated to Berlin by early November 2016, but a further 39 considering relocation (Financial Times 2016b). Fears around a possible lack of access to skilled employees have still been voiced by industry experts, despite the large investments confirmed by both Google and Facebook in London in November 2016 (Guardian 2016e).

Another key sector for the UK inward FDI is the technology sector. In fact immediately post Brexit, there was a huge foreign investment in this sector, with Japan's Softbank acquiring ARM Holdings for £24bn in July 2016. It could be argued that this shows that foreign investors will not be deterred by Brexit. Conversely, it has been pointed out that the devalued price of sterling made the deal cheaper for Softbank, and more pertinently that ARM is a global company with most of its business in dollars, such that the Brexit risk is minimised in this case (Daily Edition 2016).

Fears have been voiced in a survey of professionals in the construction sector around possible skills shortages, given the high number of EU nationals employed in the sector, and an ageing workforce, which could serve to reduce FDI (Farah 2016). Any possible effects around access to professionals are likely to emerge in the longer term. Early performance in the industry suggests a recovery after a post referendum dip (Times, 2016c).

Overall then, there are a number of key industries for UK inward FDI that could be adversely affected by Brexit. The potential effects are complex, as they depend on the characteristics of the industry concerned in terms of factors such as the motives for FDI in the sector, the degree of market access required by investors and issues such as product standards.

3.4 Regional FDI impacts in the UK of Brexit Scenarios

Issues such as the quality of human capital, the level of innovation and the infrastructural provision can affect regional competitiveness, and can also be important factors in the locational choice of firms (Huggins et al, 2014). If, as noted above, market seeking and efficiency seeking FDI into the UK are adversely affected, this could perhaps have more pronounced negative implications for regions outside of London in the UK, given their inferior regional competitiveness. In particular, a lack of cluster development and lack of depth of a skilled workforce constrain their ability to attract strategic asset seeking FDI. Indeed, Wren and Jones (2012) note the importance of agglomeration economies as a locational determinant of investment. In addition, perhaps these reductions in market and efficiency seeking FDI could be more pronounced in manufacturing, an area of growth in 2015 in the UK, as compared to FDI in areas such as R&D and HQ activity. This finding is consistent with Springford and Tilford (2014) who claim that manufacturing FDI is at risk with Brexit due to it being easier to relocate, and the fact that market access is very important here.

However, Loewendahl et al (2016) conclude that a FTA outcome would lead to a lower impact in areas such as West / East Midlands, North West and Yorkshire & Humberside, given their higher FDI in domestic market seeking FDI and manufacturing based FDI. Conversely, they see more adverse effects in Northern Ireland, Scotland and the South East, including London, given the high levels of FDI in knowledge intensive sectors in these regions. In fact, one potential positive impact of Brexit could surround a geographical re-balancing of the UK economy, with proximity to the SEM becoming less significant, and hence less potential dominance of London and the South East as an FDI location.

The regional impacts in terms of inward FDI are complex and depend in part on the assumptions made about which types of FDI would be most under threat in different Brexit scenarios. Furthermore, the regional effects could be compounded as Di Cataldo (2016) claims that the loss of EU Structural Funds could have a significant adverse impact on the labour markets of affected regions. Thus potentially this may serve to threaten inward flows of FDI to regions such as Cornwall and West Wales and the Valley, current recipients of these funds.

4. Concluding Remarks

The Brexit vote has led to a complex and uncertain situation regarding the future of UK inward FDI. The range of different possible outcomes are numerous and uncertain. The possible outcomes will have different impacts on UK FDI, with different industries being impacted diversely.

It appears that market and efficiency seeking FDI might be affected by issues such as lack of market access in outcomes other than the EEA. All outcomes would incur extra costs for exporters such as ROO costs, but some outcomes could lead to different product regulations. A WTO outcome would additionally lead to exporters being faced with the CET of the EU. There could also be adverse regional FDI effects, with non-core UK regions potentially receiving less inward efficiency and market seeking FDI, and core regions threatened in terms of strategic asset seeking FDI.

In terms of export platform FDI, the WTO and FTA outcomes seem more likely than the other scenarios to adversely affect investors' perceptions of the UK. In addition, for strategic asset seeking FDI, such as in terms of FDI in R&D and HQ activity, a strong area for the UK, the EEA outcome appears to be the least damaging of the options, given the maintained free movement of labour in the EEA.

Key FDI recipient industries in the UK will also be affected in diverse ways by the different outcomes. FDI in the financial services sector could be compromised by a lack of "passporting" rights, unless the UK was to be in the EEA. Meanwhile, FDI in the car industry could be threatened by ROO in all outcomes, different product standards in an FTA, and a CET in a WTO outcome.

Clearly, then the outcome negotiated by the UK and the EU has profound implications for the inward FDI climate in the UK. The negotiated outcome will doubtless be affected by the politics of the Brexit negotiation process, with the possibility of changes of direction, given the lack of a clear negotiating position either from the UK Government or from the EU in the period after the Brexit vote. At the time of writing the writing the UK Government appear to be suggesting that an EEA option is politically untenable due to the migration issue, meaning an FTA arrangement is more likely, while at the same time talking about possibly paying for access to the SEM. In addition, there has been talk of a bespoke deal for the UK, though Piris (2016) has noted the challenges that trying to secure such an outcome would entail. Whatever the negotiating position of the UK Government, the stance of the other EU members appears to have hardened against the UK. Given the recent tumultuous political events, and the likely complexity of the negotiation process, it is impossible to say which outcome will come to fruition.

This paper suggests, though that "harder" forms of Brexit, are likely to have more significant adverse impacts on FDI into the UK. An assessment of the magnitude of the effects of Brexit on inward FDI to the UK is complicated by the potential positive and negative factors at play. On the one hand investment for export seeking motives, or investments involving complex supply chains, or investments relying on inflows of labour are threatened. On the other hand, some tariff jumping FDI could be attracted to the UK if external tariffs are imposed. In addition, the UK might continue to attract more investments from outside the EU. This paper assesses that the negative impact of a hard Brexit with a WTO outcome would outweigh the positive, but that the negative impact on FDI will be at the lower range of previous studies, in the range of 15-20% less FDI into the UK over the 15 year time frame. Similarly, the negative impact of a softer Brexit would be at the lower end of previous studies, in the range of 5-10% for an EEA outcome, and 10-15% in a Swiss style or FTA outcome. Whatever the outcome, the negative effects are likely to be stronger in industries more exposed to Brexit, as noted above. Regional impacts are likely to be more adverse in London and the South East, and more positive in strong regions outside of this. Indeed, the Northern Powerhouse and Midlands Engine have continued their strong records in attracting inward FDI after the referendum result in 2016 (Ernst and Young 2017).

However, the possible impacts on FDI traced above could be altered by factors such as economic performance, productivity changes, exchange rate changes and UK government attempts to actively attract FDI, such as by reducing corporate tax. Moreover, the June 2017 election result complicates the situation as the political momentum towards a hard Brexit seems to have been reduced by the lack of a clear majority for the Conservative Party. Whatever the political developments to come, the findings from this research have clear implications for policy in terms of the negotiating position surrounding Brexit.

Future research on inward FDI to the UK can build on this as trends in FDI from the post-Brexit referendum foreign investment climate start to emerge. In addition, in time the actual negotiating positions of both sides will start to take on clearer form, and of course ultimately the post Brexit outcome will emerge. This could lead to research which will provide more in depth empirical evidence regarding the themes covered in this paper. Such future research could focus on issues such as the impacts of Brexit on aspects such as FDI in different sectors of the economy, or the FDI in different types of activity, or on FDI with different motives, or on FDI in different regions.

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Notes

1. It should be noted that the Ernst and Young Report is based on FDI projects that create new facilities and jobs, and excludes M&A activity. As such, its findings are likely to differ from other reports such as the World Investment Report, where M&As are included.