Economic Integration and Bilateral FDI stocks: the impacts of NAFTA and the EU

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ABSTRACT

This paper examines the factors affecting bilateral Foreign Direct Investment (FDI) stocks from 14 high income countries to 31 OECD countries over the period 1995-2015. We specifically emphasise the effect of regional trade agreements such as the European Union (EU) and the North American Free Trade Area (NAFTA) along with membership of the Currency Union. Our empirical analysis applies the generalised method of moments (GMM) estimator to a gravity model of bilateral FDI stocks. The findings imply that EU membership is a significant determinant of FDI even when we condition on the variables that follow from the application of the gravity model. We look at the effects of the North American Free Trade Area on within block FDI and find no similar effect. Our results suggest that European Integration has a large effect on FDI stocks, raising intra Single Market FDI noticeably. We note that the UK's departure from the Single Market may reduce the stock of intra EU FDI by up to 30 per cent in the long run. In addition, the findings point that the UK has no labour market or competitive environment advantage above the rest of the EU in attracting FDI.

Keywords: Regional trade agreements; Multinational firms; Foreign direct investment; generalised method of moments; gravity equation; dynamic panel data model.

JEL classification: F14; F15; F21; C23

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1. Introduction

Global Foreign Direct Investment (FDI) flows have been large in the last two decades, and there is general agreement about the push and pull factors that influence them, and they are summarised in the Gravity model (see Head and Mayer 2014 for an excellent survey mainly focussed on trade). We know that economic integration may raise the connectedness of production and increase FDI in a market such as the European Union (EU). In addition, directing investment into overseas markets can be used to avoid direct and indirect barriers to trade such as regulatory standards, tariffs and other barriers associated with trade and competition policy as well as with those associated by the evolution of the trading blocks that are the focus of interest in this paper. In this paper we distinguish between the 'creating' and 'diverting' forces on FDI emanating from trade block arrangements.

Economic integration between countries has many forms, and they can integrate parts of their economies together through an economic union such as EU or through a free trade agreement such as the North American Free Trade Area (NAFTA). Economic integration is often thought to attract FDI from countries outside of the economic integration area. However, the effect on FDI from countries within the economic integration zone is ambiguous. The removal of trade barriers may well reduce foreign investment from countries within an economic integration area and is substituted by an increase in international trade. On the other hand, foreign investment could be increased within the area due to a lower cost of factor relocation or because barriers to operation have been reduced by the integration process. There are many studies on the impact of the two economic integration programmes we discuss on bilateral trade. How this integration affects FDI seems under-researched.

This article investigates bilateral FDI from the 14 largest high income OECD countries to all the high income countries in the OECD using annual stock data over the period 1995-2015. This is the country group where data quality is high, and concepts are sufficiently similar across countries that empirical work has a chance of uncovering underlying structures. Our time period is influenced by availability of data for some of our variables, such as the indicators of market freedom[1], and covers the period of intense Globalisation and European Integration that began after the WTO was set up and the Single Market Programme (SMP) in Europe completed. We use a Gravity model to determine the key factors that drive FDI and we take into account other economic and institutional factors, such as membership of trade arrangements that may affect the distribution of FDI stocks across the host countries. We estimate a dynamic panel using systems-GMM as it not only exploits the time series variation in the data, but accounts for unobserved country specific effects while controlling for possible correlation between the regressors and the error term. We focus on Europe, and show that the SMP has raised intra-EU FDI by around 40 per cent, reflecting greater integration in the last 25 years. The formation of the North American Free Trade Area (NAFTA) has not had a similar impact. Even within the OECD institutions and their quality matters, and we show that common languages and distance between countries affect FDI significantly.

The two areas we cover, NAFTA and the EU have had different approaches to integration, with NAFTA being focussed on trade integration and the facilitation of the movement of goods. It seems to have had little impact on FDI within the region, with the standard factors of size, distance and institutions appearing to provide a fully adequate description of the evolution of the stocks of FDI within NAFTA over our period. The EU has approached integration in a different way, with an international programme to reduce the barriers to competition within the

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market area. Integration has been much more extensive with significant coordination of regulations and standards. This programme has removed barriers to the movement of FDI within the region, and FDI stocks have risen significantly more than the standard factors of size, distance and institutions would suggest.

The article first looks at the literature on Gravity models of FDI with the data and methodology subsequently being discussed, followed by estimation results and robustness tests. Finally, conclusions are offered.

2. Multinational Corporations and a Gravity Model of FDI

2.1 Gravity Models and FDI

In this paper we study stocks of FDI as these reflect the level of involvement of foreign firms in the domestic economy, whilst flows only denote changes in involvement. Many other papers also use outward stocks of FDI (Egger and Merlo, 2007, Baltagi et al., 2007, Stein and Daude, 2007, Cardamone and Scoppola, 2015) for these reasons. Additionally, flows can be negative whilst trade flows cannot, and the gravity model we use here is almost always estimated in logs, as is discussed by Silva and Tenreyro (2006). Negative FDI flows will be common, and not just when a company, such as a bank, sells assets in a host and repatriates the funds, or when a large German multinational, such as Daimler, sells a US multinational it owns, Chrysler, to an Italian Multinational, Fiat[2]. However, such transactions have noticeable, but not excessive effects on stocks of FDI.

The framework for the analysis of multinationals developed in Antras and Yeaple (2014) demonstrates a strong case for taking in to account the relative size of countries as well as the frictions associated with moving between them. These features lead naturally to sort of framework discussed in the Head and Mayer (2014) paper on Gravity Models. The Gravity model was first adopted to analyse international trade flows and then subsequently applied to other applications such as bilateral FDI. Its advantages are the simplicity of structure and its compatibility with a wide range of theoretical frameworks (Head and Mayer, 2014). Microeconomic foundations were developed by Anderson and van Wincoop (2003) and Melitz and Ottaviano (2008) amongst others. The model's flexibility allows for both "push" factors originating in home countries and "pull" factors arising from host economies. It has been widely employed to study FDI as can be seen from the applications, among others, in Eaton and Kortum (2002) and Bevan and Estrin (2004). These papers provide evidence that bilateral FDI between any two economies is positively related to size and negatively to distance.

The Gravity variables adopted in this study are measures of market size, proximity and distance. Market size of home and host countries is commonly measured by real GDP in trade studies, and has been used in nearly all empirical studies of FDI. We do not impose common coefficients on home and host GDP, although this is common, as we wish to evaluate whether market oriented factors are more important than home size. Following the work at CEPII, transportation and information costs are normally measured by a bilateral variable that computes the metric distance between the economic central point of home and host countries[3].

[2] Repositioning of headquarters, as when Shell or Unilever move their domicile from the UK to the Netherlands (or back again) for tax purposes can lead to large FDI flows, and aggregate bilateral flows can be negative in these cases, and hence cannot be logged, but periods where this occurs should not be omitted.

[3] See Mayer and Zignano (2011) for details of the widely used measure of distance developed at CEPII. It generally reduces the impact of distance as compared to a capital city to capital city measure common in Gravity studies until around 2010.

Information costs may also arise in response to institutional and cultural distance. This may be based on language similarities between the home and host countries in the sample, or on other historical factors such as colonial ties. Trade patterns have had a significant effect on the size of FDI. Trade is commonly measured by a bilateral export variable, and this is intended to capture whether trade complements FDI activity. Trade relations are also affected by trade blocks and by common markets, and we emphasise them, but these are not commonly included in studies of FDI, especially those studies based on individual country firm level data.

Our focus in this paper is mainly on the impact of the SMP and other trade blocks on stocks of FDI in high income markets in the OECD. Early studies, such as that by Barrell and Pain (1997) demonstrated that the Single Market was having an impact on FDI from outside the Union as well as within it, and all recent research supports the conclusion that the SMP has stimulated FDI within the EU. This in part comes from the growth of complex supply chains within the Union, as is discussed by Cresenzi et al. (2014), as firms find that barriers have been removed and they can begin to utilise special skills and advantages in other countries within the Single Market. In addition to such vertical FDI firms can undertake horizontal FDI across countries in the Single Market and utilise central specialist production and technology in multiple remote plants, much as we see in the US Single Market.

The Single Market has changed the patterns of FDI stocks within Europe noticeably over the last two decades, with stocks of FDI in Europe growing more rapidly than in other advanced economies whilst becoming more European in origin. If we compare the start and the end of the decade from 2003 to 2012[4], we can see a clear increase in internal European stocks relative to home and host GDP, and a fall in the share of inward stocks originating from the US. The major external investor remained the US, with about 50 percent of outward FDI stocks from the US located in Europe, with around a third of that located in the UK at the start of the period, and about a quarter in of it in 2012. Over the decade the outward stock of US FDI rose from 24 to 32 percent of its GDP. Over the same period the stock of inward FDI in the UK rose from 28 percent of GDP to 48 percent, with much of the increase coming from the rest of Europe, with the European share of the inward stock rising from 47 to 58 percent, which the US share fell from 38 percent to 29 percent. The increasing Europeanisation or the stock of inward FDI reflects increasing integration in the region. This is also shown by trends in both the level and location of outward stocks of FDI from Germany where the European share rose from 65 to 69 percent over the period, whilst that from France rose from 63 to 67 percent. In both cases the outward stock of FDI as a percent of GDP rose over the decade by 50 percent or more from around 30 percent of GDP in 2003, and hence the scale of foreign investment within Europe rose rapidly as complex supply chains were constructed within the Single Market. These changes reduced the role of distance by exploiting commonalities in the Market

We can draw a distinction between NAFTA, which is primarily a free trade area with common trade regulations and the EU which is an attempt to create a Single Market with common standards of regulation and competition. The differences exist for political reasons as much as for simple economic ones. In Europe there are a number of relatively small countries, and it is easier for political and economic groups to take control of competition and trade policy and operate it for sectorial advantage. The US already has only one market, and one political structure to control interest groups in a similar sized economy to the EU.

[4] This is the period covered by the OECD BM3 data, and hence it is comparable across years without splicing. It also avoids end point problems associated with the rise of the probability of the UK leaving the Single Market. Stocks of outward FDI relative to GDP from European countries probably reached their peak just before the financial crisis, and there was then some retrenchment.

2.2 Trade Agreements, Integration and FDI

There has been an upsurge of interest in the effects of the EU on FDI in the recent past because of the UK's decision to leave the Union, and potentially the Single Market. Bruno et al. (2016) use a synthetic counterfactual analysis of a large number of countries over the period since 1970 to create a synthetic UK outside the EU, embodying all the characteristics of similar countries. They suggest this synthetic country would have noticeably less FDI than we actually see in the UK. They back this analysis up with econometric work on flows of FDI, taking in to account a number of the factors we use, undertaking their analysis with a two step estimator. There have been a number of previous studies of the impacts of integration on FDI, and Bruno et.al. (2016) also undertake a meta-analysis of them, and draw similar conclusions. Overall, they suggest that the SMP may have raised FDI flows within Europe by between 14 and 38 per cent.

Free trade areas and common markets have been tools for encouraging regional integration for some time, and they have been widely used for political as well as economic reasons. Kreinin and Plummer (2008) used an augmented gravity model to examine the effect of regional economic integration on FDI flows in the cases of the EU, NAFTA, ASEAN, and MERCOSUR. Their findings indicate that regional integration has had a significant and positive effect on FDI, which is a combination of investment creation and diversion; and there is evidence that FDI acts as a substitute for trade in a significant number of cases, although in some cases, it complements trade.

Much of the empirical work on the impacts of trade agreements has involved investigations of the impact of Europe Agreements on FDI within the EU and to other European economies. These Agreements were designed to liberalise trade between the EU countries and the Central and Eastern European countries that had applied for EU membership. Baltagi et al. (2008) study the effects of these Agreements on bilateral outbound FDI stocks within Europe and find strong evidence for their impact. Their findings point to increased FDI from Western European home countries to Eastern European host countries flowing from the Europe Agreements.

There have been a number of studies looking at the impacts of NAFTA on FDI. For instance, MacDermott (2007) investigated the impact of NAFTA on FDI using a fixed-effects gravity model. There was evidence in these studies that trade integration increased FDI over the period 1982–1997. Feils and Rahman (2011) examined the impact of NAFTA on FDI into the region and the individual member countries. They find that the NAFTA implementation had a generally positive effect on inward FDI into the entire region, with the benefits accruing only to Canada and the United States. We test for NAFTA effects on FDI patterns below.

2.3 Financial and macroeconomic impacts on multinationals

The determinants of FDI can be considered in terms of primary characteristics like factor-price differences, market size, and trade costs (Eaton and Tamura, 1994). There is a considerable literature on the determinants of FDI that augments the more traditional models by further factors: exchange rate regimes, political and economic stability, factor proportions, openness, product-market regulation and labour market arrangements. Here the focus is on those variables that are driven by policy or relate to the broader economic environment, and it is common to look at the openness of the economy as a core indicator of policy stance. This can be measured in a number of ways, and we address these below.

Recent empirical research on the impact of exchange rate regimes on FDI has focused mostly on the effect of the Euro. Schiavo (2007) analysed the effects of the Euro on FDI flows from 1980 to 2001, and argued that the elimination of volatility stemming from the Euro 'gives a non-negative impulse to cross border investment' both with the rest of the world and inside the Euro-zone. However, only a brief part of their sample covers the relevant period. The Gravity model has also been used in this context by De Sousa and Lochard (2011), and Brouwer et al. (2008), who found a positive, significant effect of the Euro on FDI. Once again their coverage of the existence of the Euro is limited, and we can extend the analysis to 2015 in this paper.

Political and economic instability are expected to drive FDI since they create uncertainty. It is expected that FDI will be more likely to flow into host economies that are politically stable with good access to large regional markets. It can be expected that investment is encouraged by a predictable policy environment that enhances macroeconomic stability, guarantees the rule of law and the enforcement of contracts, supports competitiveness, minimises distortions, and spurs private sector development. Pourshahabi et al. (2011) analysed the relation between FDI, economic freedom and growth in OECD economies and it was indicated that market size, inflation, political stability and economic freedom positively affected FDI inflows, though in the latter case the effect was insignificant. Additional cultural and proximity factors such as language have also been shown to have an impact by Buch et al. (2003), amongst others.

The question of whether labour costs affect the investment decision in relation to the OECD countries is the subject of some debate. Bevan et al. (2004), as has been common in the literature, found a negative effect for labour cost on FDI, whilst Javorcik and Spearman (2005) found a positive and statistically significant impact, which may suggest that when labour costs rose in response to aggregate wage increases, investment also rose to reduce labour input. These effects may be genuine, or may come from neglected simultaneity, or more probably, the difficulty of using whole economy aggregate productivity measures when FDI often imports new techniques and structures that raise productivity of workers as compared to those outside the firm. However, Devereux and Griffith (1998) found unit labour costs differentials to be a non-significant driver of the location choices of US multinationals in the EU. They explain this result by their data not being disaggregated enough to measure productivity, so not reflecting firm heterogeneity within each industry. Their results may also indicate that foreign firms do not rely on domestic productivity levels, but rather bring their own techniques and skills to augment those of the host workforce.

3. Data and Methodology

To undertake the analysis, a panel has been collected that considers stock data on bilateral FDI from 14 high income OECD countries to 31 OECD countries (see Appendix) with annual data spanning the period 1995 to 2015. The dependent variable is the outward bilateral FDI stock divided by a GDP deflator[5], which is among the most used measures of FDI in the literature. These stocks are defined as outward FDI, where an investment from country *i* to country *j* ($FDI_{i,j}$) is seen as an outflow from the perspective of country *i*. We measure the size of home and host countries by real GDP in a common currency. We use a Gravity model as a framework to test hypotheses on the roles of EU membership, NAFTA and the Euro zone on bilateral FDI. As there is a good deal of inertia in investment stock data we estimate a dynamic

[5] Egger (2001), Baltagi et al. (2007), Egger and Merlo (2007), and Egger (2008) all specify the model in natural logarithms, as we do here, and the data set used here includes a number of observations where the FDI stock is zero. Here the dependent variable is $\log(1+(FDI/P_{GDP})$ which in our case closely approximates $\log(FDI/P_{GDP})$ and deals with our limited number of zeros.

model (Egger, 2001).[6] With fewer than 30 time series observations, the autoregressive coefficient is likely to be biased downwards (Nickell, 1981), implying that the model is best estimated using what has been termed a systems GMM method (Blundell and Bond, 1998).

We start by specifying a gravity equation used to estimate the determinants of bilateral FDI stocks along the lines followed by Stein and Daude (2007). A number of factors are used to capture aspects of common culture and stronger ties through language, as well as a number of other possible determinants of bilateral stock patterns:

$$y_{\mathrm{i,j,t}} = a_0 + \lambda y_{\mathrm{i,j,t-1}} + a_1 \log\left(EXP_{\mathrm{i,j,t}}\right) + a_2 \log\left(GDP_{\mathrm{i,t}}\right) + a_3 \log\left(GDP_{\mathrm{j,t}}\right) + a_4 \log\left(DIS_{\mathrm{i,j,t}}\right) + a_5 EcoFree_{\mathrm{i,t}} + a_6 EcoFree_{\mathrm{j,t}} + a_7 \log(UCL_{\mathrm{j,i,t}}) + a_8 Lang_{\mathrm{i,j}} + a_9 CU_{\mathrm{i,j,t}} + a_{10} EU_{\mathrm{i,j,t}} + a_{11} NAFTA_{\mathrm{i,j,t}} + a_{12} TimDiff_{\mathrm{i,j,t}} \quad (1)$$

Where $y_{i,j,t}$ in logarithms is the stock measure of bilateral outflow from the home country (i) to the host country (j) in year t, with FDI in current dollars deflated using the home country's GDP deflator, its lagged value is indicated by the subscript t-1, and λ is the adjustment coefficient in the dynamic form of the gravity model. $GDP_{i,t}$ is real GDP for the home country and $GDP_{j,t}$ real GDP for the host country, $EXP_{i,j,t}$ is bilateral exports from the home to host country. $EcoFree_{i,t}$ is the free economic index for the home country and $EcoFree_{j,t}$ for the host country. The 'Free Economy Index'[7] is a measure by which the quality of the economic environment is proxied. It takes values in the range 0 to 100, with 100 being the highest level of economic freedom. $DIS_{i,j,t}$ is the log of geographic distance. These distance costs are measured by the metric distance between the economic central point of home and host countries. $ULC_{j,i,t}$ is labour costs in the host country relative to the home country. These are the costs in common currency of the labour input that is needed to produce one unit of output in the host country as compared to the home. Unit labour costs are taken from the OECD and are derived as the natural logarithmic difference between labour cost in host country relative to home country. We also capture to capture further proximity factors using: $Lang_{i,j}$ which is defined as the use of a common official language, which reflects cultural similarities.

We also use a number of variables that are less common in other studies. Adoption of the single currency is measured by a dummy variable that changes from zero to one when both of the countries are members of the Euro zone, denoted $CU_{i,j,t}$ which is the country specific impact of the introduction of the Euro. $EU_{i.j.t}$ is the variable that captures EU membership by both parties is an indicator that takes the value one from the point the country receiving FDI from an EU member itself entered the EU, and is zero before then. This enables us to assess the effect of ongoing European integration on the FDI decision. We also look at similar dummies for NAFTA membership, $NAFTA_{i,j,t}$ which is a dummy that is one when the host and the home countries are both inside the NAFTA trade block. In our robustness section we also test for time zone differential between countries using the standard measures. $TimDiff_{i,j,}$ captures the time zone differential between countries measured in hours. In our empirical work below we also separate out extra effects from home and hosts both inside and outside the EU and NAFTA, but

[6] When the Gravity model is estimated using a random effects panel data model applied to real bilateral FDI stocks the Wooldridge test for first order serial correlation (Wooldridge, 2002) is found to be significant at the 1% level. This implies that these results cannot be relied on to provide a short-run explanation of bilateral FDI as there is inertia in the stock data; that at least requires a lagged dependent variable to capture this. Once a lagged dependent variable is included, then the requirement to control for endogeneity is best met by applying GMM to a dynamic panel model.

[7] Economic freedom has been defined as 'the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself'. This index is an indicator of the quality of the economic environment. It not only captures the economic policy of the government, but also the legal soundness of the economy and macroeconomic stability.

for brevity we do not spell out these dummies here.

There are of course missing observations in the matrix, and this can cause problems for estimation and for interpretation when many observations are missing. There is a significant debate on missing variables in trade flows models, and this is summarised in Head and Mayer (2014) and Baltagi et al. (2015). In our sample, some 1985 observations, or about a quarter of the possible observations are absent, with a quarter of these being zero. Of the rest almost half come from non-reporting of data. For instance, there are no disaggregated data for Belgium from 1995 to 2007, and none for Spain from 1995 to 2002, despite the fact that aggregate FDI stocks of considerable size are reported. In addition, the FDI data contain a considerable number of cells that are 'not available' due to reporting and confidentiality restrictions, as publication can reveal market sensitive information[8]. In both cases we have a problem where missing cells should not bias coefficients, as there is no reason to presume they differ from filled cells. These two statistical problems leave us with a an unbalanced panel with around seven percent of observed data points being zero, and these may be different from other cells, in that absence may have difference causes from the scale of presence. The largest set of zero cells is for Japan, where there are no stocks recorded for 13 of the 30 hosts, (around half of all zero cells), but our results are not particularly affected by omitting Japan, as we see below[9].

To summarise the discussion of the variables, Table (1) below displays the variables that are considered here and their definitions.

Insert Table (1) here

4. Empirical findings for models estimated by GMM

The preferred results from the two-step system GMM estimator are presented in Table (2). Several model specifications are developed. First of all, we add our European Currency Union and European Single Market variables to a traditional Gravity model and this is presented in column (1), and then to that model the trade block dummy variables for home non-EU host EU and home EU host non-EU are added in column (2). In column (3) a NAFTA dummy is added to the traditional gravity model, and in (4) non –NAFTA dummies similar to those in column 2 for the EU are added. In columns (5) and (6) first individual EU and NAFTA dummies are added to test whether there is similar within block effect on FDI stocks, and then the set of non-EU and non-NAFTA dummies are also included. In general, the EU dummy remains significant whilst the NAFTA indicator is not significant, and we may regard column (1) as our preferred result.

The dynamic specification seems to be well defined from the diagnostic test for the definition of the instruments (Hansen, 1982).[10] Across all specifications in Table 2, the results for the tests of serial correlation are as expected. Although it is not possible to accept the null hypothesis that there is no first order serial correlation, higher order serial correlation does not

[8] Reporting based restrictions on data availability depend on country specific disclosure rules, and these differ significantly. The UK, France and Germany are similar large countries with considerable outward FDI stocks. They do have different disclosure rules, and as a result of these differences France has less than one per cent of cells absent, whilst the UK Germany have almost ten per cent absent for this reason.

[9] There are nine other completely empty pairs, involving the small hosts, Estonia (4), Slovenia (3) Israel and New Zealand. Given the scale of the zero observations problem, especially when we exclude Japan, we would argue that we do not need to use any of the missing observation techniques discussed by Silva and Tenreyro (2006) and Head and Mayer (2014).

[10] The J-statistic, which is the minimized value of the two-step GMM criterion function, has an asymptotic $\chi 2$ distribution (Arellano and Bond, 1991) where the number of degrees of freedom equals the number of over-identifying restrictions. If there are as many moment conditions as endogenous variables then the IV/GMM criterion is zero and the coefficients of the model are exactly identified, but the validity of the instruments is not then tested in this context.

appear to be a problem as it is not possible to reject the null of no second or third order serial correlation. Therefore, important criterion related to the moment conditions are met as further serial correlation in the first-differenced disturbances at an order greater than one would render the GMM estimator inconsistent (Arellano and Bond, 1991, and Roodman, 2009).

Insert Table (2) here

The adjustment coefficient on lagged FDI is positive and statistically significant suggesting significant inertia in the stock adjustment process. The significance of the lagged dependent variable confirms that it is essential to use an instrumental variables estimator. Given the sunk costs incurred by investors to set up distribution networks and services in foreign markets it is not surprising that there is persistence in FDI stocks. The coefficient on lagged FDI in column (1) is about 0.25, and hence the long run impacts of variable are amplified by around a third as compared to the impact coefficient. The long-run coefficients for the regressions in column (1) are reported next to this column (along with the Wald test of their significance) in Table (2).

There are a number of regional factors that we have included in our analysis. Perhaps our most important finding is that the SMP has significantly increased stocks of FDI within the Market, given the other factors driving FDI. The EU coefficient estimate is economically and statistically significant suggesting that the bilateral FDI stock between member states are higher than other factors, such as size and proximity, would suggest. In the long run the initial impact of membership of the Single Market feeds through the lagged dependent variable and raises FDI from other members by over 40 per cent, with supply chains spreading across the market area. This is clearly reversible, albeit slowly, when a country leaves the Single Market. As we can see from the results in column 2, we find no evidence that the EU has attracted additional FDI from outside its borders given the other factors driving flows. In addition it is probably the case that outward FDI from the EU has not risen any more than the traditional gravity effects would suggest. Although the coefficient on home EU to host non-EU is not significant at the 5% level, there is some evidence that the EU has increased its FDI to non-EU destinations over this period. This may be reflecting in part flows to pre accession countries in Europe, and we look at this in our robustness section. Turning to the estimation of the Euro dummy effects, it appears that there is no additional effect for the creation of a common currency, as the Euro dummy variable, when both countries (host and donor) are in the Euro zone, is not significant in any of the specifications in Table (2).

We have tested for equivalent effects in NAFTA in column 3 of Table (2) and it is not significant on its own. The nature of integration within the NAFTA region is different from that within the EU, and the trade agreement is not particularly aimed at increasing economic integration between the countries involved. However, when we add in column 4 dummies for home not in NAFTA, host in NAFTA and home in NAFTA and host not in NAFTA, we find that Multinational firms from outside NAFTA appear to have increased their investment there more than might be expected, and it is clear from the data that much of that will have gone to Mexico, and not the US and Canada.

We can of course add our NAFTA and EU results together, and we do so in columns 5 and 6. It is clear that the EU has had a significant and positive impact on FDI within its region, whilst NAFTA has not had a significant effect within its region. This would suggest that US FDI to Mexico, for instance, has been no more than would have been anticipated given proximity and size. Hence reducing the role of NAFTA, as is currently proposed, may not lead

to a significant return of jobs to the US from Mexico. There is weak evidence that the NAFTA countries have increased their FDI to countries outside the area, as we can see from column 6, by rather more than we would have anticipated given the proximity and size of those countries. These results bring out the strong differences in the impacts of the two sets of integration forces in North America and Europe, with Europe displaying a pattern designed to increase competition within the region, and not just trade between partners[11].

As for institutional variables, the economic freedom index for the home country and host country is positive and highly significant presenting evidence that the OECD countries with good institutions managed to attract more FDI. Institutional quality is important, as Buchanan et al. (2012) show for a wider group of countries than in our study. Even within the OECD stronger institutions and a system of law enforcement signals that investors' rights will more likely be protected, and that home economies will undertake proper policing of outward foreign investors behaviour. All these factors encourage FDI.

Additionally, it is found that proximity indicators such as distance and language dummies have significant negative and positive impacts respectively. More particularly, the distance between home and host countries has a negative and significant impact on bilateral FDI. If distance increases by one per cent, the bilateral stock of FDI falls by about 0.43 per cent in the long run. This suggests that companies are found to prefer investing in closer countries rather than those farther away. Our findings suggest cultural proximity, as indicated by a common language has a significant positive impact, raising bilateral FDI. This factor is almost entirely an Anglo Saxon one, with three home countries (US, UK and Canada) sharing a common official language with six host nations. It is enough to explain the strong presence of US investment in the UK. There is also a smaller Francophone grouping (France and the multilingual countries, Canada, Belgium and Switzerland) where FDI stocks will be impacted. There is clear evidence to support the notion that transaction costs are reduced as a result of common cultural ties or values and that this encourages bilateral FDI.

It appears that unit labour costs are not important as they are not significant for any specification of the model. This finding is consistent with Devereux and Griffith (1998) who also found unit labour costs differentials to be a non-significant driver of the location choices of US multinationals in the EU. They explain this result by their data not being disaggregated enough a measure of productivity so not reflecting the firm's heterogeneity within each industry, but these results would suggest that this finding is more general.

The results related to the core variables in Table (2) are also of interest with real GDP of the host country and home country both having a positive sign and being statistically significant in all specifications. In the same way, the coefficient on bilateral exports is positive and statistically significant, suggesting they are complementary to bilateral FDI. The real GDP elasticity of the host country is around 0.6 and hence is fifty percent larger than the distance elasticity, and it is likely to exert a stronger effect on FDI when the FDI outflow is market seeking in relation to a domestic (service) market. The result suggests that the income in investment partners and host countries strongly influence FDI stocks. We should note that the impact from the host country's GDP is almost two thirds larger than that of the home country, suggesting that market specific effects may dominate the gravity part of the relationship. We have tested for equality of coefficients for home and host factors, which are GDP and economic freedom effects, and it is rejected in a Wald test with Chi squared (2) of 4.94 (prob. 0.0825).

[11] It is probably the case that efficiency has been raised within European countries by the introduction of foreign producers that reduce the political power of host country sectional groups, and hence has allowed the Union to increase competition.

5. Robustness Results

The focus of this paper has been on a number of new variables in the Gravity approach to FDI, and we have looked at the role of the Single Market in Europe, NAFTA and membership of the Currency Union in Europe. This specific European focus allows us to look again at time zone effects and produce new, and negative, results on them. We also investigate whether the UK has special advantages that might aid it after leaving the EU. In addition, we test whether joining the EU boosted FDI stocks in the Accession countries, and if the accession effect explains the EU effects we observe. The results are reported in Table 3. In Table 4 we report on the impacts of removing Japan from our regressions as there is no recorded Japanese inflow in 13 of our host countries.

Time zone effects have been found to be important by Stein and Daude (2007) amongst others, and they have a plausibility related to the need for managerial control in real time. However, this is not necessarily the only explanation of the coefficient. We look only at OECD countries, and we focus on the 14 largest home countries, and hence our results cover the vast majority of within OECD stocks of FDI, whereas other studies may include other countries with smaller outward stocks, or whose investments are driven by factors not captured in a market based model. We have included several European Union variables in our sample, and these appear to be significant, whilst time zone effects are not, as we can see from column (1) and (2) of Table 3. The EU countries are in three adjacent time zones, rather fewer than within the USA, and the inclusion of a common membership dummy indicates within EU FDI stocks are much higher than other gravity variables would indicate. The EU indicators appear to override any effects from time zones.

In Table 3, we also include tests of the special nature of the UK as an FDI platform for countries outside the EU. In column 3 we include a dummy for inward stocks of FDI in the UK from countries outside Europe. This variable is negative but not significant, suggesting strongly that the UK has no labour market or competitive environment advantage above the rest of the EU. The scale of FDI into the UK, which has been noticeable, is picked up by other factors in regression, especially by a common official language with the US and Canada, an advantage shared with Ireland. We see no more FDI in the UK than would be expected given other factors, and this conclusion is reinforced by the result in column 4 where we include a dummy that covers FDI stocks in the UK from all EU home countries as well as those outside it. There is no significant UK effect in this regression, strengthening our result that the UK has no special attraction factors except those included in our model.

Insert Table (3) here

Gradual improvements in communications technology and the growth of the internet may lead to the 'Death of Distance', but its demise is clearly an empirical matter. In column 5 of Table 3 we add a new variable to column 1 of Table 2 to test for this effect, and we find that the product of time and distance (Tdistance) has a significant and positive effect, indicating that distance is becoming a less important factor over time. However, given the coefficient on distance is –0.2932 whilst the decay coefficient is +0.002 it will take 150 years of linear decay from our start date in 1995 for the effect of distance to disappear completely. Given we are early in this 150 years process there is no way to find if decay will continue to zero or whether it will asymptote at a lower coefficient in 30 years (or at some other date). As the coefficient of Death of Distance is so small we do not introduce it in our other regressions as its absence will not induce biases in coefficients.

In our discussion of the results of the complete set of EU and NAFTA dummies in Table 2 we suggest that some of the effects of the EU to non EU members may be an accession effect. We test this in two ways. First, in column 6, we include a dummy that is one for the three years before the new EU members joined in 2004 and zero otherwise (see appendix), to test if there was any pre-accession surge in FDI flows to these countries. Our results indicate that the EU accession process had a positive impact on FDI inflows to potential new EU members. It is clear from these results that the flows to the potential new members largely explain the significance of the home EU host non-EU coefficient in Table 2. Indeed, it is possible that our positive EU membership effect is just a continuing effect of higher FDI to the new members once they have joined. In order to test this in column 7 we have added a dummy variable that is one in the year after new members join and zero otherwise, and our results indicate that there is no additional FDI increase after accession. This could indicate that the advantages of EU membership were taken on board before actual accession, as we found in column 6. One of the EU's main aims in its accession policy is to encourage economic development and regional integration between the EU countries, and our FDI results suggest it has been successful.

Our remaining tests involve repeating Table 2 after excluding Japan from the data set as there are so many missing stocks for the whole period. This may reflect data problems, but it may also be that there are other factors at work. We miss stocks for Finland, Hungary and Estonia, where the basic language is Finno-Hungaric, and for Slovenia, Poland, Slovakia, the Czech Republic, where the basic language is Slavic, and also for Greece and Turkey. In each case the language problem may, for Japanese speakers, be more severe than with English or with the core Latin or Germanic languages. Japan also happens to be the second largest economy in our sample and distant from the main European countries in our sample. Hence this lack of data might bias our distance coefficient upwards and our home GDP coefficient downward, but we find the reverse. There is evidence that the home GDP coefficient is lower without Japan, whilst the host coefficient is higher, and if we exclude Japan the distance coefficient is higher, suggesting Japan may do more FDI than its size and distance suggests. We have tested the equality of the coefficients in the with and without Japan panels based on our maintained hypothesis that the missing observations are a statistical problem not a structural one. A Wald test of the restriction is easily passed, with a Chi squared (15) of 4.79 (prob. 0.9938), and we would conclude that our core results in column 6 of Table 2 are statistically the same as the core results in column 6 of Table 4.

Insert Table (4) here

6. Concluding Remarks

Our objective has been to investigate the role of market integration in determining the pattern of bilateral FDI in the OECD, and we have focussed on the major home countries amongst the advanced market economies. We can, as a consequence of our results, draw conclusions both for policy makers and for potential future work on patterns of bilateral FDI in market economies. It is clear that the creation of a Common, or Single Market between countries changes patterns of FDI, It is also clear that if we do not take in to account the creation of the Single Market we may not properly explain FDI patterns. In addition, increases in the distance between partners is a major factor affecting stocks of FDI, with a ten per cent increase in distance apart reducing FDI stocks by over four per cent. This is marginally larger than the impact of home size, but less than that of host size in the long run. There is evidence that the effects of distance are being reduced, perhaps by new technologies, but this process is very slow, with the coefficient falling from above four per cent at the start of our sample to above

three and a half at the end of it. Distance may be dying, but it is doing so very slowly.

It is inevitable that the country selection in this study is weighted toward Europeans because they form the majority of countries in an OECD sample. The nature of the European sample has changed over time, with at least four countries that did not exist in 1990. We also have a number of host countries joining the EU and a group of EU countries forming a currency union. Some of these changes have also stimulated FDI, with stocks from EU countries located in potential members rising for the three years before accession. However, membership of the currency union does not appear to change patterns of FDI. We have tested for time zone differential effects, and we have shown that when we include them along with the SMP and other gravity indicators they are not significant, and we would conclude that 'facetime' contact for FDI investments is not as important as in banking relationships, for instance.

We have tested extensively for the effects of European and North American trade agreements and other institutional factors, and we found that common membership of the European Union had a significant and positive effect on bilateral FDI. If both countries are members of the Single Market then bilateral FDI stocks are likely to be 40 per cent higher than they would otherwise have been. This reflects a number of factors, but it is suggested that it comes mainly from the Single Market programme, the major institutional attempt to reduce barriers to trade and capital flows within Europe. Other institutions also matter, with our home and host Economic Freedom indicators raising stocks wherever better quality institutions existed. There is no evidence, however, that NAFTA had an impact on FDI stocks in the same way. Further research could look in more detail at the effects on FDI of the formation of trade blocks and their changing nature over time.

Going forward, our results suggest that the UK will see a significant reduction of FDI stocks from other European economies, such as Germany, France and the Netherlands, if it leaves the EU and is outside the Single Market. The Single Market was, and should be seen as, an attempt to emulate the efficiencies of the US Single Market. Although there is still some distance to go in terms of efficiency, progress has been made, but that progress will probably be reversed in the UK once it leaves, with the stock of FDI from (other) EU countries falling by perhaps a third as supply chains adjust. There is no evidence that the UK benefits from having a liberalised labour market in attracting FDI, as the inclusion of size, distance, and perhaps importantly a common official language are sufficient to explain FDI in the UK from outside the Single Market.

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Appendix- *Countries included in the sample.*

Home countries (14)	EU Countries (accession dates)	Currency Union (dates)	Host Countries (31)	EU Countries (accession dates)	Currency Union (dates)
Austria	EU	1999	Australia	--	--
Belgium	EU	1999	Austria	EU	1999
Canada (**N**)	--	--	Belgium	EU	1999
France	EU	1999	Canada (**N**)	--	--
Germany	EU	1999	Czech Republic	EU 2004	--
Italy	EU	1999	Denmark	EU	--
Japan	--	--	Estonia	EU 2004	2011
Korea, Rep.	--	--	Finland	EU	1999
Netherlands	EU	1999	France	EU	1999
Spain	EU	1999	Germany	EU	1999
Sweden	EU	--	Greece	EU	2001
Switzerland	--	--	Hungary	EU 2004	--
United Kingdom	EU	--	Ireland	EU	1999
United States (**N**)	--	--	Israel	--	--
			Italy	EU	1999
			Japan	--	--
			Korea, Rep.	--	--
			Mexico (**N**)	--	--
			Netherlands	EU	1999
			New Zealand	--	--
			Norway	--	--
			Poland	EU 2004	--
			Portugal	EU	1999
			Slovak Republic	EU 2004	2009
			Slovenia	EU 2004	2007
			Spain	EU	1999
			Sweden	EU	--
			Switzerland	--	--
			Turkey	--	--
			United Kingdom	EU	--
			United States (**N**)	--	--

Sources, OECD FDI statistics. NOTE: N: NAFTA block member.

Table (1) Variables definitions and data sources.

Variables	Unit	Source
$y_{i,j,t}$ =Log ($FDI_{i,j,t}$/ GDP $Deflator_{i,t}$)	is the stock measure of bilateral outflow from the home country (i) to the host country (j) in year t, with FDI in current in US$ deflated using the home country's GDP deflator.	(OECD)
$EXP_{i,j,t}$	Bilateral exports of goods are just used (As exports of service data are not available for most of the countries in the sample).	(OECD)
Real $GDP_{i,t}$, Real $GDP_{j,t}$	At constant 2005 prices and converted to US$s.	(OECD)
$DIS_{i,j,t}$	Measure in geographical distance in kilometres to proxy transportation costs	CEPII Distance Database (www.cepii.fr)
$Free_{i,t}$. $Free_{j,t}$	An index of economic freedom that refers to whether there is any restriction on trade in a country.	Heritage Foundation 2015 (www.heritage.org)
$EU_{i,j,t}$	Dummy variable that equals 1 if countries i and j are EU members at time t and 0 otherwise.	(see Appendix)
$NAFTA_{i,j,t}$	Dummy variable that equals 1 if countries i and j are inside NAFTA trade block members at time t and 0 otherwise.	(see Appendix)
$Lang_{i,j}$	Dummy variable that equals 1 when both countries share a common official language	www.cepii.fr
$CU_{i,j,t}$	Dummy variable that equals 1 if countries i and j use the same currency (euro) at time t and 0 otherwise.	(see Appendix)
$ULC_{j,i,t}$	labour costs in the host country relative to the home country, Exchange Rate Adjusted ULC, Index OECD base year (2010=100)	(OECD)
$TimDiff_{i,j,t}$	Variable accounting for the time differential in between the capital cities of the lender and borrower countries.	Britannica atlas, Encyclopaedia Britannica Inc. 1994
home- Non EU, host- EU	Dummy variable that equals 1 if home country is a non-EU member and host country is EU member at time t and 0 otherwise.	(see Appendix)
home-EU, host- Non EU	Dummy variable that equals 1 if home country is EU member and host country is a non-EU member at time t and 0 otherwise.	(see Appendix)
home- Non NAFTA, host- NAFTA	Dummy variable that equals 1 if home country is non-NAFTA member and host country is NAFTA member at time t and 0 otherwise.	(see Appendix)
home- NAFTA, host- Non NAFTA	Dummy variable that equals 1 if home country is NAFTA member and host country is non- NAFTA member at time t and 0 otherwise.	(see Appendix)
home- Non EU, UK (host)	Dummy variable that equals 1 if home country is a non-EU member and the UK is host country at time t and 0 otherwise.	(see Appendix)
UK (host)	Dummy variable that equals 1 when the UK is host country and 0 otherwise.	(see Appendix)
Before joining EU	Dummy variable that equals 1 in the three years before the joining new EU members in 2004 and 0 otherwise.	(see Appendix)
After joining EU	Dummy variable that equals 1 in the year after new members joining year and 0 otherwise.	(see Appendix)
The dependent variable, real bilateral FDI stock, is real FDI outflows from 14 High income OECD to all the OECD countries. The nominal FDI outflows to the OECD are converted to real value by dividing GDP deflator.		

**Annual data over the period 1995-2015

Table (2) Results for dynamic panel-data estimation using two-step SYS-GMM, for FDI stocks.

Independent Variables	Column (1)	long-run estimates	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
$y_{i,j,t-1}$	0.2501***		0.2570***	0.2504***	0.2495***	0.2509***	0.2550***
	(0.0303)		(0.0305)	(0.0308)	(0.0308)	(0.0303)	(0.0303)
$\log(GDP_{i,t})$	0.3009**	0.4012	0.2745**	0.2650**	0.2247**	0.2909**	0.2339**
	(0.1233)	6.01**	(0.1207)	(0.1200)	(0.1063)	(0.1212)	(0.1075)
$\log(GDP_{i,t})$	0.4764***	0.6352	0.4915***	0.4366***	0.4200***	0.4934***	0.4795***
	(0.0796)	38.00***	(0.0809)	(0.0774)	(0.0749)	(0.0775)	(0.0765)
$\log(EXP_{i,i,t})$	0.3568***	0.4757	0.3464***	0.4042***	0.4220***	0.3591***	0.3746***
	(0.0581)	40.68***	(0.0593)	(0.0563)	(0.0569)	(0.0580)	(0.0593)
$EcoFree_{i,t}$	0.0370***	0.0493	0.0427***	0.0346***	0.0327***	0.0375***	0.0400***
	(0.0057)	43.43***	(0.0063)	(0.0058)	(0.0055)	(0.0058)	(0.0061)
$EcoFree_{j,t}$	0.0298***	0.0397	0.0258***	0.0279***	0.0313***	0.0286***	0.0290***
	(0.0055)	29.81***	(0.0060)	(0.0058)	(0.0061)	(0.0057)	(0.0061)
$\log(DIS_{i,i,t})$	-0.3280***	-0.4373	-0.2891***	-0.3638***	-0.4199***	-0.3386***	-0.3540***
	(0.0732)	20.41***	(0.0758)	(0.0708)	(0.0735)	(0.0732)	(0.0782)
$Lang_{i,j}$	1.5058***	2.0077	1.7550***	1.5991***	1.2513*	1.5796***	1.4249**
	(0.5457)	7.89***	(0.6360)	(0.5473)	(0.6387)	(0.5497)	(0.6367)
$CU_{i,j,t}$	-0.0212	-0.0283	-0.0278	0.1024	0.1347	-0.0296	-0.0115
	(0.0979)	0.05	(0.1029)	(0.1072)	(0.1038)	(0.0988)	(0.0988)
$\log(UCL_{j,i,t})$	-0.0828	-0.1104	-0.0521	-0.1523	-0.0769	-0.0911	0.0105
	(0.1053)	0.62	(0.1079)	(0.1040)	(0.1072)	(0.1044)	(0.1151)
$EU_{i,j,t}$	0.3261**	0.4348	0.6036**			0.3068**	0.5895***
	(0.1365)	5.87**	(0.2432)			(0.1363)	(0.2033)
$NAFTA_{i,j,t}$				-1.1132	-0.8231	-0.8202	-0.3882
				(0.8782)	(0.8124)	(0.8259)	(0.7783)
home- Non EU, host- EU			0.1242				0.0752
			(0.1683)				(0.1622)
home-EU, host- Non EU			0.3344*				0.3538**
			(0.2001)				(0.1727)
home- Non NAFTA, host- NAFTA					0.4471**		0.3523*
					(0.1948)		(0.1934)
home- NAFTA, host- Non NAFTA					0.3880		0.5025*
					(0.3012)		(0.3039)
Constant	-18.4768***		-18.7154***	-16.7472***	-15.2897***	-18.5708***	-17.4200***
	(2.5884)		(2.7150)	(2.5050)	(2.4344)	(2.6174)	(2.5720)
Observation	6256		6256	6256	6256	6256	6256
AR(1) test	-6.85***		-6.90***	-6.87***	-6.87***	-6.86***	-6.91***
AR(2) test	-0.22		-0.11	-0.06	-0.06	-0.20	-0.13
J-test~χ2	394.06		393.82	394.09	394.97	393.24	393.63
J-test: p-value	0.962		0.965	0.952	0947	0.960	0.965

Notes: All regressions are estimated over the period 1995–2015 using a dynamic two-step system GMM estimator (Blundell and Bond,1998) with finite sample correction to the variance-covariance matrix (Windmeijer, 2005). Huber–White robust standard errors are reported in parenthesis. ***, **, and * denotes statistical significant at 1%, 5%, and 10% level, respectively. Panel coherent serial correlation tests (AR(p)) are for order $p=1,2$ (Arellano and Bond, 1991). The J-test statistic with p-values related to over-identifying restrictions (Hansen (1982).

Note: the table shows the long-run estimates derived from an underlying short-run dynamic model using the two step systems GMM. A Wald test ~$\chi^2(1)$ is reported in the second row for each long run coefficient. Denoted by ***, **, and *, coefficients are statistically significant at 1%, 5%, and 10%, respectively.

Table (3) Robustness Results

Independent Variables	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)	Column (7)
$y_{i,j,t-1}$	0.2510***	0.2507***	0.2504***	0.2502***	0.2226***	0.2637***	0.2652***
	(0.0304)	(0.0302)	(0.0302)	(0.0303)	(0.0313)	(0.0311)	(0.0308)
$\log(GDP_{i,t})$	0.3009**	0.3027**	0.2994**	0.3021**	0.3021**	0.2830**	0.4164***
	(0.1239)	(0.1265)	(0.1235)	(0.1254)	(0.1436)	(0.1176)	(0.1085)
$\log(GDP_{i,t})$	0.4911***	0.4761***	0.4784***	0.4669***	0.4849***	0.3332***	0.3945***
	(0.0775)	(0.0794)	(0.0796)	(0.0825)	(0.0872)	(0.0678)	(0.0681)
$\log(EXP_{i,i,t})$	0.3587***	0.3555***	0.3563***	0.3613***	0.3376***	0.4316***	0.3429***
	(0.0580)	(0.0580)	(0.0581)	(0.0583)	(0.0615)	(0.0594)	(0.0589)
$EcoFree_{i,t}$	0.0374***	0.0370***	0.0370***	0.0367***	0.0265***	0.0410***	0.0427***
	(0.0059)	(0.0058)	(0.0057)	(0.0057)	(0.0071)	(0.0067)	(0.0066)
$EcoFree_{j,t}$	0.0292***	0.0301***	0.0297***	0.0297***	0.0173**	0.0211***	0.0238***
	(0.0057)	(0.0056)	(0.0055)	(0.0056)	(0.0073)	(0.0065)	(0.0062)
$\log(DIS_{i,i,t})$	-0.2820**	-0.2989**	-0.3298***	-0.3245***	-0.2932***	-0.1576*	-0.2763***
	(0.1285)	(0.1212)	(0.0733)	(0.0739)	(0.0836)	(0.0923)	(0.0794)
$Lang_{i,j}$	1.6494***	1.5725**	1.5238***	1.5458***	2.6903***	2.2596***	1.9794***
	(0.6394)	(0.6198)	(0.5643)	(0.5498)	(0.7356)	(0.7031)	(0.6523)
$CU_{i,j,t}$	-0.0396	-0.0273	-0.0216	-0.0268	-0.1400	-0.0916	-0.0473
	(0.1045)	(0.1018)	(0.0984)	(0.1018)	(0.1220)	(0.1096)	(0.1056)
$\log(UCL_{j,i,t})$	-0.0888	-0.0786	-0.0835	-0.0985	-0.0174	-0.2869**	-0.2926**
	(0.1061)	(0.1064)	(0.1050)	(0.1048)	(0.1081)	(0.1275)	(0.1230)
$EU_{i,j,t}$	0.3053**	0.3259**	0.3260**	0.3333**	0.5033***	0.8207***	0.6880***
	(0.1386)	(0.1377)	(0.1363)	(0.1368)	(0.1573)	(0.2752)	(0.2502)
$NAFTA_{i,j,t}$	-1.0075						
	(0.8242)						
$TimDiff_{i,j,t}$	-0.0189	-0.0104					
	(0.0312)	(0.0290)					
Tdistance					0.0020***		
					(0.0008)		
home- Non EU, UK (host)			-0.0123				
			(0.3041)				
UK (host)				-0.0434			
				(0.2071)			
home- Non EU, host- EU						0.2232	0.1193
						(0.1874)	(0.1712)
home-EU, host- Non EU						0.4563**	0.4404**
						(0.2142)	(0.2027)
Before joining EU						0.6270***	
						(0.1746)	
After joining EU							0.0275
							(0.1349)
Constant	-19.2006***	-18.7133***	-18.4548***	-18.3550***	-16.8606***	-17.4499***	-20.1562***
	(2.8643)	(2.8119)	(2.6014)	(2.5904)	(3.1572)	(2.7152)	(2.6446)
Observation	6256	6256	6256	6256	6256	6256	6256
AR(1) test	-6.86***	-6.86***	-6.86***	-6.86***	-6.49***	-7.07***	-6.94***
AR(2) test	-0.21	-0.22	-0.21	-0.23	-0.50	-0.29	-0.17
J-test~$\chi 2$	393.18	393.92	393.17	393.94	392.82	393.06	393.91
J-test: p-value	0.958	0.961	0.961	0.961	0.948	0.962	0.964

Notes: See definitions at the bottom of Table 2.

Table (4) Results for dynamic panel-data estimation using two-step SYS-GMM, for FDI stocks. (without Japan)

Independent Variables	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
$y_{i,j,t-1}$	0.2528***	0.2598***	0.2491***	0.2482***	0.2532***	0.2572***
	(0.0306)	(0.0309)	(0.0313)	(0.0311)	(0.0308)	(0.0310)
$\log(GDP_{i,t})$	0.2333*	0.1981*	0.1985	0.1811*	0.2278*	0.1515
	(0.1250)	(0.1198)	(0.1241)	(0.1098)	(0.1234)	(0.1148)
$\log(GDP_{i,t})$	0.4981***	0.5170***	0.4595***	0.4354***	0.5106***	0.4872***
	(0.0825)	(0.0848)	(0.0805)	(0.0773)	(0.0803)	(0.0791)
$\log(EXP_{i,i,t})$	0.3546***	0.3396***	0.4068***	0.4222***	0.3584***	0.3743***
	(0.0597)	(0.0615)	(0.0580)	(0.0576)	(0.0597)	(0.0604)
$EcoFree_{i,t}$	0.0379***	0.0458***	0.0352***	0.0309***	0.0384***	0.0423***
	(0.0059)	(0.0068)	(0.0060)	(0.0055)	(0.0060)	(0.0063)
$EcoFree_{j,t}$	0.0298***	0.0249***	0.0276***	0.0323***	0.0289***	0.0287***
	(0.0056)	(0.0062)	(0.0060)	(0.0062)	(0.0058)	(0.0063)
$\log(DIS_{i,i,t})$	-0.3427***	-0.2964***	-0.3763***	-0.4573***	-0.3502***	-0.3831***
	(0.0732)	(0.0750)	(0.0710)	(0.0769)	(0.0732)	(0.0768)
$Lang_{i,j}$	1.4225***	1.7144***	1.5494***	1.1892*	1.5138***	1.3889**
	(0.5330)	(0.6263)	(0.5394)	(0.6202)	(0.5352)	(0.6215)
$CU_{i,j,t}$	-0.0081	-0.0082	0.1104	0.1391	-0.0171	0.0097
	(0.0978)	(0.1030)	(0.1094)	(0.1025)	(0.0994)	(0.0985)
$\log(UCL_{j,i,t})$	-0.0138	0.0116	-0.0849	-0.0274	-0.0212	0.0475
	(0.1148)	(0.1200)	(0.1140)	(0.1190)	(0.1145)	(0.1295)
$EU_{i,j,t}$	0.3166**	0.6884***			0.2991**	0.7649***
	(0.1354)	(0.2629)			(0.1358)	(0.2248)
$NAFTA_{i,j,t}$			-1.0481	-0.7662	-0.8294	-0.1239
			(0.8795)	(0.8317)	(0.8426)	(0.8470)
home- Non EU, host- EU		0.1570				0.0653
		(0.1838)				(0.1710)
home-EU, host- Non EU		0.4345**				0.5858***
		(0.2180)				(0.1993)
home- Non NAFTA, host- NAFTA				0.4328**		0.3158
				(0.1928)		(0.1953)
home- NAFTA, host- Non NAFTA				0.5319*		0.8388**
				(0.3185)		(0.3384)
Constant	-17.1274***	-17.3668***	-15.4935***	-14.1583***	-17.3005***	-15.4917***
	(2.6422)	(2.7378)	(2.6103)	(2.5596)	(2.6672)	(2.7114)
Observation Number	5985	5985	5985	5985	5985	5985
AR(1) test	-6.76***	-6.81***	-6.75***	-6.74***	-6.77***	-6.81***
AR(2) test	-0.24	-0.12	-0.10	-0.12	-0.23	-0.13
J-test~$\chi 2$	377.85	377.12	377.66	378.34	377.87	377.83
J-test: p-value	0.984	0.987	0.979	0.976	0.983	0.984

Notes: See definitions at the bottom of Table 2.