

DISCUSSION PAPER SERIES

IZA DP No. 13668

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ISSN: 2365-9793

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ABSTRACT

The Effect on Foreign Direct Investment of Membership in the European Union*

This paper explores the impact of EU membership on foreign direct investment (FDI). It analyses empirically how the effects of such deep integration differ from other forms and investigates what drives these effects. Using a structural gravity framework on annual bilateral FDI data for almost every country in the world, over 1985-2018, we find EU membership leads FDI into the host economy to be about 60% higher for investment from outside the EU, and around 50% higher for intra-EU FDI. Moreover, we find that the effect of EU membership on FDI is larger than from membership of NAFTA, EFTA, or MERCOSUR, and that the Single Market is the cornerstone of this differential impact.

JEL Classification: F21, F36, O52

Keywords: economic integration, foreign direct investment, European Union, Structural Gravity Model, single market

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* We thank Fabrizio Coricelli, Nicholas Crafts, Swati Dhingra, Peter Egger, Jan Fidrmuc, Michele Ruta, John Springford and seminar participants at LSE, UCL, Birkbeck College, Brunel, Clermont-Ferrand, Kyoto University, Henley Business School, HM Treasury, DFID, NIESR, DIW, ECB, World Bank, Academy of International Business and the Regional Studies Association meetings for valuable comments on previous versions. We would like also to extend a very special thanks to John Van Reenen for inviting us to write a paper on the FDI effects of Brexit in the context of the work carried out at the LSE Centre for Economic Performance. Dustin Voss and Yuan Hu provided superb research assistance. We are responsible for all remaining errors.

1. Introduction

How much additional foreign direct investment (hereafter FDI) does a country receive because it chooses to engage in deep vis-à-vis shallower forms of integration? This is a crucial question within the European policy debate for which, surprisingly, one still finds very few answers. The main textbooks on the economics of European integration (e.g. Baldwin and Wyplosz, 2006; El-Agraa, 2011; De Grauwe, 2018) place a rather limited emphasis on the impact on inward foreign direct investment. Discussions about economic integration instead focus on trade and competition effects of membership in the European Union (Mayes, 1978; Anderson and Van Wincoop, 2003; 2004), though the potential impact on FDI has also been recognized (Blomstrom and Kokko, 2003; Egger and Pfaffermayr, 2004).

Inward FDI plays an important role in the economic development of host economies because as a form of capital accumulation, FDI can generate growth while if it is sourced from technologically more advanced locations, it can lead to enhanced productivity, both horizontally within industries (Haskel et al., 2007) and vertically up and down supply chains (Javorcik, 2004). Indeed, the literature has argued that the entry of foreign firms into a host economy can stimulate technological innovation (Alfaro et al., 2004), put pressure on domestic competitors (Mastromarco and Simar, 2015), and diffuse frontier management practices (Bloom et al., 2012). FDI may also exhibit complementarity patterns not only with respect to trade, but also with other elements of financial globalization (Greenaway and Kneller 2007; Lane and Milesi-Ferretti 2008).

EU membership is usually argued to raise FDI inflows, for example as a consequence of higher customs duties on trade from outside the Union, shifting the balance of advantage for external firms away from exporting and in favour of FDI (Baldwin and Wyplosz, 2006). Such impacts have been widely documented, for instance, by the upswing in inward FDI following of announcements about future EU membership on FDI into transition economies in the 1990s

(Bevan and Estrin, 2004; Crespo and Fontoura, 2007; Medve-Bálint, 2013; Bruno and Cipollina, 2018).

Such arguments have been strengthened by the formation of the European Single Market, which represents a substantial deepening of the European integration programme (Grin 2003). The origin of the Single Market is a 1985 *White Paper* that identified, proposed and articulated an extensive set of about 300 measures. The objective of these measures was to *complete* what was known at the time as the common or internal market (Young 2015). Although the 1957 Treaty of Rome created a common market based on the free movement of goods, people, services and capital, by the early 1980s, despite substantial progress with implementing free movement of goods, it was perceived that significantly more integration was needed regarding people, services as well as capital. The 1986 Single European Act changed the decision-making process in the European institutions (from unanimity to qualified majority) and established a deadline to complete the implementation of the measures agreed upon (December 31, 1992).

The potential impact of the Single Market on FDI was considered by Dunning (1997), Neary (2002) and Kaloty (2006), among others, but have been rarely spelt out. In particular, in addition to stimulating FDI by motivating production by firms from non-union members to avoid the tariffs placed on exports, the Single Market may stimulate additional FDI both from within and outside the EU. To understand this, we draw on Dunning's (1993) categorisation of the motives for FDI into market-seeking, efficiency-seeking, resource-seeking and strategic asset-seeking motives. In recent years, we have seen an upswing in FDI motivated by strategic asset-seeking, as multinationals, especially from emerging markets, seek to purchase brands and technologies in order to upgrade their own capabilities. As a region of high technological competence and sophisticated brands, strengthened by the Single Market and EU innovation policies (El-Agraa, 2011), much of this FDI has come to the EU (Estrin, Meyer, Pelletier,

2018): examples include the purchase by Tata of Jaguar Landrover; by Geely of Volvo and by Arcelik of Grundig.

The Single Market has been a major driver of FDI since its formation. This is because it created a unified market across Europe, so market seeking FDI from outside the EU would be more strongly attracted to the EU because of the larger size of the “domestic” market and the possibilities to exploit scale economies and reduce transactions cost in the creation of overseas subsidiaries (Aristotelous and Fountas, 1996). Since the EU is for the most part not a region of low costs or natural resource munificence, market seeking motives will likely be the predominant driver of external FDI (Kaloty, 2006). The Single Market is also likely to increase FDI between member states, because of significant cost differences, especially in labour costs, combined with relatively short supply chains and low transaction and coordination costs. Thus, efficiency seeking motives probably predominated in intra-EU FDI resulting from enlargement (Bevan and Estrin, 2004), with, for example, car companies relocating plants from higher to lower cost locations within the Union and just-in-time supply chains being created between Germany, the Czech Republic and Slovakia.

However, empirical work on the impact of EU membership and the role of the Single Market on FDI has lagged behind the theoretical discussion, largely because of problems in the availability of suitable worldwide bilateral datasets. Thus, existing research on FDI and European integration has previously only covered a few source or host economies (Sanso-Navarro, 2011), usually from among advanced economies (Aristotelous and Fountas, 1996), and often sought to model total FDI inflows to a country (Dunning, 1997, and Neary, 2002), rather than the determinants of inter-country flows, but it is the latter that allows one to identify the impact of various forms of economic integration for group members and non-members, including membership of the EU, NAFTA, EFTA and Mercosur.

In contrast, the general literature on the determinants of FDI has exploited the growing

availability of country-to-country (bilateral) FDI datasets to move beyond explaining single country inflows from the rest of the world. This work has been based on the use of gravity models, already employed in the analysis of trade patterns (Baier and Bergstrand, 2007) and especially structural gravity models (Santos and Tenreyro, 2006; Blonigen and Piger, 2014) enabling researchers to test, for example, the effects of a range of international agreements and arrangements on FDI inflows (e.g.; Head and Meyer, 2014; Baier, Bergstrand and Feng, 2014). Even so, the first gravity based FDI papers used relatively simple estimations methods and covered only developed economies, with quite short datasets, often only around ten to fifteen years (Petroulas, 2007; Taylor, 2008) so their findings, while stimulating, were not necessarily robust.

However, bilateral data on FDI inflows have recently been made available from UNCTAD for almost every economy in the world, while previously such bilateral data as were available were restricted to OECD economies (Schiavo, 2007). This enables study of the effects of EU membership on FDI, not only for countries in the EU itself (De Sousa and Lochard, 2011), or between EU members and other advanced economies (Bevan and Estrin, 2004) but also for the first time including FDI from emerging economies. This is critical because in recent years, FDI from emerging economies has represented up to a third of total outflows and China has often been the largest single FDI source economy (UNCTAD, 2019).

In this paper, we therefore exploit new longer and global bilateral datasets, using frontier estimation methods, to provide the first robust measures of the effects of EU membership, and the Single Market, on FDI, and to compare them the impact of other models of economic integration, including the North American Free Trade Area agreement (NAFTA) and Mercosur Agreements. Our approach therefore follows Lawrence (1996) in distinguishing between shallow and deep integration, with the former being largely economic while the latter involves a significant degree of political integration as well. Thus, the EU represents the most

significant, long-lasting and continuously evolving example of the deep integration (König and Ohr, 2013), while NAFTA or Mercosur are examples of shallow economic integration.¹ WTO membership currently represents the lowest degree of integration for most advanced market and emerging economies. Our empirical analysis applies structural gravity models which have already been used extensively in the international trade literature where bilateral data have been available for longer (Anderson, 2011).

Our work is perhaps the first to use a huge new FDI data resource; the comprehensive UNCTAD bilateral FDI dataset². This allows us to consider a much wider range of countries, 142 countries including all the principal emerging economies, and a much longer period, 1985-2018, than previous studies. Thus, we can estimate the effects of integration over a much longer time window than used in previous studies, and also compare the effects of the EU membership with other trading arrangements. It also facilitates the use of the most advanced econometric methods.

There are three main novel findings. We find the impact of EU membership on FDI into the host economy always to be positive, significant and quite large, in the order of 60% for inward investment from outside the EU, and around 50% for intra-EU FDI. A second important finding is that the effect of the EU membership on FDI is significantly larger than membership of Free Trade Area agreements, such as NAFTA, EFTA and Mercosur, supporting the view of the greater benefits of deep as against shallow economic integration in capital inflows as well as trade. A third novel and important finding is that we are able to econometrically separate the effects of the EU membership before and after the implementation of the Single Market in 1993. Our more robust results, those accounting for “multilateral resistance terms,” show that the Single Market is the cornerstone of the differential impact of

¹ Campos et al (2019) argue that deepening the EU reached “institutional integration” where member countries delegate to super-national institutions (at least partial) political control over selected policies that go beyond those traditionally affected by trade agreements and related competition policies.

² See for details <https://unctad.org/en/Pages/Statistics/About-UNCTAD-Statistics.aspx>.

deep against shallow integration. Accordingly, before the implementation Single Market, we find EU membership does not actually generate significant impacts on FDI. Instead, the positive significant impact of the EU membership on FDI takes place only after the Single Market is implemented.

The paper is organised as follows. The next section summarises the previous literature and sets up the framework we use to frame our empirical analysis. Section 3 presents the dataset providing extensive details because it has not been used before. Section 4 discusses our econometric estimates. Section 5 concludes with implications for policy and future research.

2. FDI and Integration

We first outline the framework used to identify and measure the effects of EU membership on FDI. As noted, the distinction between shallow and deep integration is important for our analysis: shallow integration is restricted to economic integration and epitomized by the free trade area model, while deep integration combines economic and political aspects, for example a customs union in which economic ties are supported by the creation of common institutions to manage conflicts. This can be exemplified by the EU and especially the Single Market (Campos et al., 2019). However, many major economies like China or Japan, while deeply involved in the global economy, have undertaken neither deep nor shallow economic integration with partners, though they may have signed some free trade agreements, especially in recent years.

The literature about the effects of EU policies and programmes on FDI is surprisingly thin, as noted above, but include for example Dunning (1997) and Neary (2002). Thus, FDI has not received the same attention as for example the issues of trade and migration, perhaps because the EU did not have an explicit policy on cross-border investment until very recently. However, the freedom of cross-border movement of capital is one of the four pillars of the

Single Market. By reducing the restrictions on capital flows across EU member states, the Single Market deepens EU integration by increasing competition and specialisation (Badinger 2007) and by improving the allocation of resources and generating economies of scale and scope (Baldwin 1989). Associated with this, the diffusion of best managerial practises and new products is also expected to foster innovation and ultimately to increase productivity.

Our empirical analysis is based on the gravity model (Anderson and van Wincoop, 2003; Blonigen, 2005; Anderson, 2011). Clear micro-foundations for the use of the gravity equation in the analysis of trade flows were provided by Anderson (1979), who derived a trade gravity equation using the properties of Cobb-Douglas expenditure function. More generally, in the late 1970s and early 1980s, the emergence of the new trade theory led to a variety of theoretical foundations for a trade gravity equation (Baldwin and Taglioni, 2007). The gravity model has also been successfully applied to most other forms of bilateral cross-border flows, including migration, and foreign direct investment (Baldwin and Taglioni, 2011; Head and Mayer, 2014), though as empirical rather than a theoretical relationship³. The fundamental idea is that similar forces drive the main economic relations between countries to those identified by Newton in his Law of Gravity, namely mass and distance. In the case of FDI, the gravity model proposes an empirical relationship driving the flows of FDI between two economies in terms of the size (GDP) of the source (home) economy, the size of the recipient (host) economy and the distance between them. The effect of home and host GDP was expected to be approximately linear and positive while distance was expected to have a non-linear and negative effect. Distance was usually taken to reflect a range of transactional and frictional costs and is often measured geographically or by factors such as legal, institutional or cultural differences (Ghemawat, 2001). In the applications of gravity models to trade, Baier et al. (2008)

³ Thus, the gravity model started out as a purely empirical model framework but has been given solid theoretical foundations for trade flows. However, because the theory relies on market-clearing condition for an expenditure equation (Baldwin and Taglioni, 2007), one cannot extend the model from trade, which is an output, to FDI, which is a factor input.

calculate that membership of the European Union leads to increases in bilateral international trade of the order of between 127 and 146 per cent, after ten to fifteen years. This compares favourably with equivalently estimated benefits from shallow integration; European Free Trade Association (EFTA) membership only generates increases in bilateral trade of about one quarter of the size.

The basic gravity equation model to estimate the impact off EU membership on FDI is therefore the following PPML specification:

$$FDI_{o,d,t} = \exp[\alpha_0 + \alpha_1 EU_{o,t} + \alpha_2 EU_{d,t} + \alpha_3 \ln X_{o,t} + \alpha_4 \ln X_{d,t} + I_t + \eta_{o,d}] + u_{o,d,t} \quad (1)$$

where $FDI_{o,d,t}$ stands for unidirectional – sender to target – “Foreign Direct Investment” flow and the $\ln X_{o,t}$ is a vector of the natural logarithm of characteristics of the origin (sender, partner) country, o , in year t . Similarly, $\ln X_{d,t}$ is a vector of the natural logarithm of characteristics of the destination d (target, reporter) economy, in year t . The characteristics vector includes the size of the economy (GDP) as well as indicators of *time-varying* economic distance (such as GDP per capita). Finally, $EU_{o,t}$ and $EU_{d,t}$ are the two main variables of interest, constructed in standard way as dummy variables⁴.

There has been considerable methodological progress in the application of gravity models in recent years (Santos Silva and Tenreyro, 2006; Bergstrand and Egger, 2007). In particular, empirical applications have moved from the basic gravity model to the new structural gravity approach (Fally, 2015; Blonigen and Piger, 2014). This is based on the idea that moving away from a cross-section design to one based on panel data allows researchers to address endogeneity bias (see also Baier and Bergstrand, 2004; Egger and Pfaffermayr, 2004; Baier et al. 2008, 2009, 2014; UNCTAD 2016). However, many of the key host and home

⁴ For a detailed description, see table A1.

economy variables in a gravity equation, including almost all potential indicators of distance (transportation costs, cultural affinity, geography, etc.), common borders, landlocked countries, ocean harbours, lack of mountains, tariffs, customs, different language/money, regulation, legal origin, are either invariant or do not change greatly over time for each pair (dyad) of countries. For these reasons, *structural gravity models* (Baier and Bergstrand, 2007) instead include a dyadic fixed effect ($\eta_{o,d}$)⁵, specifically a dummy variable for each pair of countries. Thus, in this formulation, distance measures - which are invariant across country pairs - are replaced by dyadic fixed effects and some country's characteristics are replaced by multilateral trade resistance terms (MTRs). The inclusion of bilateral fixed effects helps to minimise the effects of the exclusion of many of the usual suspects in explaining FDI flows. They control for country pair unobserved heterogeneity and implicitly for factors such as cultural distance, bilateral regulatory agreements, etc. The concern regarding omitted variable bias is also mitigated in this way in these types of models. In our work, we also include a full set of time dummies to control for global macroeconomic shocks via year fixed effects I_t , which reflect the macro phenomena that are common across all country-pairs. The $u_{o,d,t}$ is the idiosyncratic error term.

It is important to note that the coefficients of interest, α_1 and α_2 on the EU membership dummies, are identified *via* the impact of changes in economic and political relationships (and other economic variables) *over time* on the change in FDI flows *over time*. Hence the crucial importance of the length of the period used in the estimation, of the model; in our case 1985-2018. Being a member of the EU will be one of the time-varying observable characteristics of a country that enter the $EU_{o,t}$ and $EU_{d,t}$ vectors of characteristics specific to a country and will include things like *time-varying* pair proxy for trade/investment costs and *time-varying* pair proxy for regulatory cultural distance.

⁵ Also called “symmetric” or “un-ordered”.

To estimate equation (1) we utilize a Poisson Pseudo-Maximum Likelihood (PPLM) estimation and control for dyadic fixed effects and time dummies (Santos Silva and Tenreyro, 2006). The PPML method represents the current stage in the evolution of modelling gravity equations, because there is no FDI at all between many bilateral country pairs (about 70% of the pairs in our data), while FDI is very large between a few such pairs (say the UK and US; or Germany and China). The PPML estimator is designed to address the resulting highly right-skewed nature of the distribution of FDI. Standard errors are also clustered by dyadic country-pair to allow for serial correlation of the errors.

3. Data set

Foreign direct investment (FDI) reflects the objective of obtaining a lasting interest by a resident entity in one economy (“direct investor”) in an entity resident in an economy other than that of the investor (“direct investment enterprise”). The lasting interest implies the existence of a long-term relationship between the *direct investor* and the *enterprise* and a significant degree of influence or control over the management of the enterprise. In general, direct investment involves both the initial transaction between the two entities and all subsequent capital and income transactions between them.

As far as measurement accounting is concerned, FDI flows record the value of cross-border transactions related to direct investment during a given period. Financial flows consist of equity transactions, reinvestment of earnings, and intercompany debt transactions, instead. Outward flows represent transactions that increase the investment that investors in the funder economy have in enterprises in a foreign economy, such as through purchases of equity or reinvestment of earnings, less any transactions that decrease the investment that investors in the funder economy have in enterprises in a foreign economy, such as sales of equity or borrowing by the resident investor from the foreign enterprise. Inward flows represent

transactions that increase the investment that foreign investors have in enterprises resident in the reporting economy less transactions that decrease the investment of foreign investors in resident enterprises. In our data, we look directly at bilateral FDI flows (inflows for one country and outflow for the other) in millions of current US dollars.

We use the UNCTAD's Bilateral FDI Statistics as our primary data source. It provides data for economies reporting FDI inflows, outflows, inward stocks and outward stocks in all major countries in the world⁶. In this paper, we focus on FDI inward flows⁷. For the purpose of international comparison, we use millions of USD as currency units. The FDI data have been merged with International Monetary Fund data⁸ on macroeconomic indicators of these countries including GDP and GDP per capita (both in USD, PPP).

In order to build a measure of deeper economic integration, we draw from the European Union website⁹ and combine the information on membership of the EU and the timing of the start of the Single Market (SM), both pieces of information being country and time specific. For example, the variable EU membership after the start of the Single Market is a binary time-variant variable equal to 1 only if the country is in the EU in a specific year *and* the SM has already started (after 1993). This contrasts with the variable EU Prior the start of the SM, that takes the value of unity only for EU members and only up to 1992. The detailed list of variables used in this paper is provided in Table A1 and summary statistics in A2 and A3. In our dataset,

⁶ The data are highly correlated with the OECD bilateral FDI statistics on the overlapping countries' sample, i.e. 1990 onwards. Therefore, the 1985-1989 sample has been used based on OECD bilateral FDI source. In fact, at the end of the 1980s, the number of non-OECD countries engaging in FDI was negligible, though it has increased greatly since.

⁷ We use the whole number of 142 countries reporting FDI inflows from all around the world. The number of partners –countries sending FDI- can be higher than 142, though. These are smaller countries not receiving any FDI at all. Some FDI flows are negative in sign. These instances of disinvestment arise because either equity capital, reinvested earnings or intra-company loans are negative and not offset by the remaining components. Negative flows have real economic meaning, and, because of their numerical importance, we cannot eliminate them without losing consistency, so we treat them as zero.

⁸ International Monetary Fund DataMapper: <https://www.imf.org/external/datamapper/datasets/WEO/1>

⁹ Please see https://europa.eu/european-union/about-eu/countries/member-countries_en; https://europa.eu/european-union/topics/single-market_en.

each observation contains information of FDI flows from source-partner into the target-reporter country, EU membership status of both target and source countries, macroeconomic conditions of both target and source countries, and other relevant information such as if they are members of other plurilateral agreements (NAFTA, EFTA and Mercosur).

As far as the time span is concerned, we used all available years covered by the UNCTAD database, from 1990 to 2018, and combined where relevant with the OECD dataset which is only available for OECD countries for the period, 1985-1989. The maximum possible number of observations is 174,002. Of course, 1985 is a critical year in terms of the EU economic integration project because the Single Market Act was signed and became the institutional landmark that steered and deepened economic integration in the EU. We constructed our data as an unbalanced panel with assigned zeros due to missing values (no flows). For many country-year pairs, especially before the 1980s, bilateral FDI flows were in fact zero.

Our initial research question concerns the effect of the EU membership on target-reporting country FDI inflows, which we test via the sign and significance of a coefficient concerning whether in each year the target economy is or is not a member of the European Union (*EU member, target*). The EU membership step-dummy captures whether the recipient of bilateral FDI flows is a member of the European Union and therefore measures the overall cumulated premium through the time of the membership of increased (or decreased, if negative) FDI from *any* potential sender. In other words, the EU target dummy measures the premium of increased FDI towards EU members from *any* other country in the sample (EU and not EU). We also include a step-dummy for whether the sender-partner country in each year is a member of the EU.

4. Empirical Analysis

4.1 *The Baseline Model: PPML Estimates*

Table 1 shows estimates of our baseline model with the dependent variable being bilateral FDI flows¹⁰. Note that because this is a structural gravity model, all the potential factors often discussed to explain FDI, for example distance, common borders, colonial relationships, are included in the dyadic fixed effects.

The main variable of interest is the one capturing deep economic integration *via* EU membership, namely the estimated coefficients for the EU member target. The value is 60 per cent ($e^{0.47}-1$) and it is highly statistically significant. The gravity variables are also significant with expected signs. The economic size of the two countries is measured by GDP and the level of development is measured by GDP per capita. As we would expect from a gravity framework, the economic size of both sender and target significantly and positively affect FDI. The level of development is another indicator of distance (Ghemawat, 2001) and is therefore also often included in gravity models, especially when considering flows from countries with different level of economic development. In line with the literature, we confirm a positive, significant and sizable effect of the EU on FDI inflows though on the basis of one of the largest and longer databases ever used on FDI. Incidentally, we also show a positive and significant effect of outward FDI (coefficient on partner) for the EU, suggesting an impact of the EU on intra-EU FDI.

[Insert Table 1 about Here]

How does our estimate compare with and relate to other estimates in the literature?

¹⁰ In the literature, FDI stock as well as flow data have been used in the estimation of gravity models because stocks tend to be more stable over time than flows. In this paper, we report only results using flow data, more suitable for gravity estimation models. In previous work, available from the authors on request, we have estimated the same equations using stock data, with similar results.

Straathof et al. (2008) use a gravity model to examine bilateral FDI stocks. One of their specifications uses dyadic fixed effects, a somewhat different set of controls and earlier data (1981-2005). They find that EU membership yields a 28% increase in its inward FDI stocks from other EU countries and a 14% increase from non-EU countries (their Table 5.1, column 2). De Sousa and Lochard (2011) in related work use a short panel (1992-2005) to investigate whether the creation of the euro explains the increase in intra-European investment flows. They find that it increased intra-EMU FDI stocks by around 30 per cent. Petroulas (2007) finds that EMU increased inward FDI flows within the euro area by approximately 16%, an estimate that is broadly confirmed by Sondermann and Vansteenkiste (2019). We can also look at the bilateral trade flows literature for a comparison. Baier et al. (2008) find that trade is increased by about 130% after 10 to 15 years of the EU membership, while the similar impact of EFTA membership is about 35%. We find instead that EU membership increases FDI inflows by about 60% and as we show below, that is mostly driven by the Single Market effect.

4.2 Deep versus shallow integration

We extend our baseline estimation to additional specifications and estimation methods to test in more detail the channels through which the EU might impact FDI. Thus, we account for other Economic Integration Agreements, elicit the role of “multilateral resistance terms” and empirically test the role of the Single Market, established on 1st January 1993. We report and discuss these results in the sub-sections below.

4.2.1 Membership of other Integration Agreements

We first consider the effect of membership of other forms of economic integration, NAFTA, EFTA and Mercosur, that are free trade areas (FTAs) and potentially alternatives to the WTO membership. The reason is twofold: on the one hand we conceptually compare EU membership

with other integration agreements, on the other hand we test whether. the use of different agreements scenarios might alter the estimated size effect of the EU membership. Our specification is as follows:

$$FDI_{o,d,t} = \exp[\alpha_0 + \alpha_1^d EU_{d,t} + \alpha_1^o EU_{o,t} + \alpha_2^d NAFTA_{d,t} + \alpha_2^o NAFTA_{o,t} + \alpha_3^d EFTA_{d,t} + \alpha_3^o EFTA_{o,t} + \alpha_4^d Mercosur_{d,t} + \alpha_4^o Mercosur_{o,t} + I_t + \eta_{o,d}] + u_{o,d,t} \quad (2)$$

Because NAFTA¹¹, the European Free Trade Association (EFTA)¹², and Mercosur¹³ are important ‘Free Trade Areas’ (FTAs), we do control for the membership of those FTAs¹⁴ in addition to that of the EU. In equation (1), our counterfactual to EU membership is other plurilateral trade agreements, and FTAs and conformity with World Trade Organization rules (WTO). The calculated premium of the EU membership in equation (1) compares against any country outside the EU, but within other Economic Integration Agreement (such as FTAs) or WTO terms. In other words, from Table 1 results we would not be able to identify which of the two effects -FTAs vs. WTO terms- prevails. This is potentially problematic, the reason being that the “EU estimated premium” might be different when compared with Lichtenstein and Norway (both EFTA members), USA and Canada (both NAFTA members), Brazil (as a member of Mercosur) and countries not in any integrated association but still with bilateral FTAs and members of the WTO.

In the estimates reported in Table 2 columns 2 to 4, we add in sequence NAFTA, EFTA

¹¹ The NAFTA members are Canada, Mexico, and USA.

¹² The EFTA members are Iceland, Lichtenstein, Norway, and Switzerland (with partial participation to the Single Market).

¹³ Mercosur members are Argentina, Brazil, Paraguay, and Uruguay. Venezuela is a full member but has been suspended since 1 December 2016.

¹⁴ We exploit the most up-to-date version of Database on Economic Integration Agreements (April 2017) from the <https://www3.nd.edu/~jbergstr/> website and recent updates from NAFTA, EFTA and Mercosur official websites.

and Mercosur dummies, as well as repeat column 1 from Table 1, for a comparison. We find that the premium of the EU membership is now estimated to be even bigger than in the baseline scenario, the reason being that the counterfactual against which we estimate the premium is composed of countries *not belonging* to EU, NAFTA, EFTA nor Mercosur.

[Insert Table 2 about Here]

The results reported in Table 2 (columns 2, 3 and 4) confirm that the effect of the EU membership on FDI into targeted economies remains large, between 60 per cent ($e^{0.47} - 1$) and 86 per cent ($e^{0.62} - 1$). On the other hand, the coefficient on other FTAs Reporter are significantly lower (or even negative) than the one on EU Reporter membership dummy: EU premium with respect to NAFTA is in the order of 230% ($e^{[0.62 - (-0.59)]} - 1$); EU premium with respect to EFTA has a lower bound¹⁵ in the order of 34% ($e^{[0.62 - (0.32)]} - 1$); finally, the EU premium with respect to Mercosur has a lower bound in the order of 100% ($e^{[0.62 - (-0.08)]} - 1$).

We interpret this set of results to imply that *EU membership (deep integration) remains more effective than the other main plurilateral trade agreements (shallow integration) in delivering higher FDI from any other part of the world*. The implication of these results are profound. We have tested the relationship between membership to EU and FDI over a very long-time span and comprehensively global FDI database against other forms of economic integration. The results are stark and clear. The EU remains the bloc delivering the highest premium as far FDI inflows are concerned.

¹⁵ The EFTA and Mercosur Reporter coefficients are not significantly different from the WTO omitted category, this is why the EU premium is at least 34% and 100%, respectively.

4.2.2 Time-Varying Multilateral Resistance Terms

Following UNCTAD (2013, 2016), we estimate a model with “Multilateral Resistance Terms” (MRTs) including time-varying sender-time receiver-time fixed effects. MRTs absorb the size variables ($\ln X_{o,t}$ and $\ln X_{d,t}$) from the structural gravity model, as well as all other observable and unobservable country-specific characteristics, which vary across these dimensions. These include various national policies, institutions, EU-Reporter and EU-Partner, exchange rates regimes, etc. For this reason, we can only use a set of dummies for EU, NAFTA, EFTA and Mercosur that identify a “mutual” (origin and destination alike: $EU_{o,d,t}$ $NAFTA_{o,d,t}$ $EFTA_{o,d,t}$ $Mercosur_{o,d,t}$) membership participation, instead¹⁶. We use the following specification:

$$FDI_{o,d,t} = \exp[\alpha_0 + \alpha_1 EU_{o,d,t} + \alpha_2 NAFTA_{o,d,t} + \alpha_3 EFTA_{o,d,t} + \alpha_4 Mercosur_{o,d,t} + I_{ot} + I_{dt} + I_t + \eta_{o,d}] + u_{o,d,t} \quad (3)$$

In Table 3, we include *both* MRTs (UNCTAD 2016) *and* the others three FTAs (Baier and Bergstrand, 2007). In these estimates, the impact of the EU membership remains strongly significant, 50 per cent ($e^{0.41} - 1$) and (statistically) larger than any alternative shallower form of FTAs. However, the interpretation is now slightly different compared to Table 1 and 2: the intra-EU FDI flow is 50% higher than the inflows between countries of other Economic Integration Areas. In particular, from column 4 we elicit that the effect is remarkably higher than any other NAFTA EFTA or Mercosur integration areas, the latter actually registering a reduced intra-FTA inflow vis-à-vis other countries.

Summing up, we estimate that the EFTA inflow premium is 37%¹⁷ (Table 2) and the

¹⁶ These dummies are not collinear with dyadic dummies, being time-variant.

¹⁷ The EFTA premium is relative lower than the EU premium, notwithstanding the participation of EFTA countries into the EEA and therefore the Single Market, starting from 1994 –Norway and Iceland- and 1995-Liechtenstein. Therefore, the whole period 1985-1994 could be considered a delayed loss of part of the premium enjoyed by countries which were already in the EU. We would like to thank an anonymous referee for this point.

intra-EFTA premium to be -6% (Table 3), although neither are statistically significant. Our estimates also show that the NAFTA inflow premium is -45% (Table 2) while the intra-NAFTA premium is 6% (Table 3), although only the former is statistically significant. Finally, we estimate the Mercosur inflow premium is -9% (Table 2) while that of the intra-Mercosur premium to be -67% (Table 3), although only the latter is statistically significant.

[Insert Table 3 about Here]

4.2.3: The Single Market Effect

Finally, we consider the effects of the EU membership as well as EFTA decomposed into Prior Start Single Market (up to 1992) and post-Single Market (1993 onwards). The specification of the estimating equation in Table 4 is identical to Table 2, and similarly Table 5 is identical to Table 3, except that we have “decomposed the effect of the EU and EFTA” into two periods, pre- and post- the establishment of the Single Market in January 1993. We find that pre-1993, EU and EFTA members did not experience any premium in terms of their FDI inflows. However, the establishment of the Single Market increased it enormously: if we look at the result of the most comprehensive regression in column 4, the EU premium is in the order of 93% ($e^{0.66} - 1$) for EU and of 70% ($e^{0.53} - 1$) for EFTA. Incidentally, as far as outward FDI is concerned, both EU and EFTA experienced high values even before 1993.

[Insert Tables 4 and 5 about Here]

Finally, we test our main research question with the most stringent set of controls (MRTs, dyadic dummies and year dummies) in Table 5. Our previous results continue to hold in the exacting specification: the premium to intra-EU FDI flows is driven by the Single Market

for EU countries. It is clear that neither EFTA nor NAFTA show benefits remotely close to those of EU combined with Single Market membership, whereas Mercosur membership actually suffered with respect to other agreements (as indicated by its negative coefficient).

5. Conclusions

How much additional FDI does a country receive because it chooses to engage in deep vis-à-vis shallower forms of economic integration? This is an important question within the European policy debate for which, surprisingly, one still finds very few answers. In this paper, we calculate that EU membership increases FDI inflows by between 60 and 85 per cent (inward FDI from outside) and around 50% percent for intra-EU. Furthermore, we show the role played by the Single Market to be key in that augmentation of FDI.

Because these new estimates are considerably larger than previous findings, we undertook a series of stringent tests. First, we compared other levels or depths of economic integration, for example membership of EFTA, NAFTA and Mercosur as the alternative to the baseline membership to the WTO. The positive impact of EU membership on FDI is found to be much greater than that of shallower economic integration areas. Second, we use a fully-fledge Multilateral Resistance Terms estimation and find that the premium of intra-EU FDI is in the order of 50%, again higher than any other integration initiative around the globe. Finally, we also test for the role of the Single Market, which we find to be the key driver of FDI inflows as well as of intra-EU FDI, though not for EFTA members.

The paper yields various implications future research and for policy. Regarding the implications from our results for future research, we highlight four main issues we think should be carefully investigated in the future. Firstly, there is the issue of the sectoral composition of FDI because one suspects that the effects may be quite heterogeneous across sectors, for instance when one considers a comparison between services and manufacturing. Although data

availability remains a substantial constraint to such exercises, we believe they are and will remain of utmost importance. It is reasonable to expect that the implementation of the Single Market has affected capital- and labour-intensive sectors differently and, indeed, that the introduction of the single currency affected financial and non-financial sectors dissimilarly.

A second promising issue for future research is the possibility of a complementarity between FDI and other forms of integration (international trade and equity flows) which is particularly relevant in light of the increasing importance of global value chains.

A third promising area of future research is to dwell deeper in various institutional aspects that have received mixed attention so far in the literature, more specifically issues such as corruption, rule of law, inequality, quality of state institutions, on the one hand, and corporate tax rates and tax havens on the other.

Finally, the issue of expectations should receive a more detailed treatment: we recognise that a dummy for EU accession does not fully capture effects that occur prior to EU membership (i.e. from progress in accession negotiations and/or changes to candidate status). Once a country becomes an official candidate, investors may already formulate their expectations prior to the official membership, which may influence their investment decisions (Bevan and Estrin 2004). Future work should try to tease out these potential differences. At the same time, our findings indicate that EU membership has a pronounced impact on FDI, in addition to the effects already identified in the literature for trade. Moreover, we do not find any evidence that these benefits can be obtained by operating under, say, WTO rules on a global basis, or by joining alternative trading areas. Our database is the first that allows for an analysis of the impact on FDI of these alternatives to the WTO.

Regarding implications of our findings for policy, the first candid observation we must make is that we believe that FDI until very recently was one of the very few areas for which the EU was broadly silent. However, this has (in our view, correctly) changed recently. Former

Commission President Juncker presented a proposal to create a first EU-wide framework for foreign direct investment during his 2017 State of the Union address. Although restricted to screening foreign investment into the EU, in March 2019 the proposal was adopted by the European Parliament and by the Council and has now entered into force (European Commission 2019). Europe is still recovering from a global financial crisis in which investment has played a central role. Multiple well-designed policy proposals are on the table but have not received the priority (by which we mean the financial resources and political support and focus) they require. The new framework is a step in the right direction, but it does not suffice. In principle, FDI can play a key role in accelerating and deepening the recovery because of the robustness of its long-term productivity effects, which can be, if properly promoted, further supported by EU integration, and vice-versa. However, this may be harder to achieve in a post-COVID world, where we are already seeing some increased restrictions on FDI flows (Javorcik, 2020).

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Table 1: PPML estimate of the effect of the EU membership on FDI inflows: baseline model

| | PPML(FDI inflows) |
|--|--------------------------|
| EUMember-Reporter | 0.47056*** (0.11048) |
| EUMember-Partner | 0.98182*** (0.15094) |
| Log(GDP ^{PPP})Reporter | 2.43140*** (0.30628) |
| Log(GDP ^{PPP})Partner | 2.41684*** (0.30320) |
| Log(GDPper-capita ^{PPP})Reporter | -1.72316*** (0.32045) |
| Log(GDPper-capita ^{PPP})Partner | -0.90602*** (0.33233) |
| Constant | -0.14171 (3.69502) |
| Observations | 174,002 |
| Pseudo R-squared | 0.7828 |
| Pair FE | Yes |
| Year FE | Yes |
| GDP Controls | Yes |

Notes: Clustered Standard errors in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All regressions include fixed effects for years and dyadic pair (symmetric). “Reporter” indicates the country that is the recipient of the FDI inflows and “Partner” indicates the country that is the sender of the FDI.

Table 2: PPML estimate of the effects of the EU membership on FDI inflows: NAFTA, EFTA and Mercosur

| | (1) | (2) | (3) | (4) |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) |
| EUmember-Reporter | 0.47056*** (0.11048) | 0.51802*** (0.11580) | 0.59462*** (0.13274) | 0.61659*** (0.13338) |
| EUmember-Partner | 0.98182*** (0.15094) | 0.87204*** (0.16091) | 1.19003*** (0.21007) | 1.12623*** (0.21156) |
| NAFTA-Reporter | | -0.49713** (0.21663) | -0.62991*** (0.23079) | -0.59387** (0.23289) |
| NAFTA-Partner | | -0.89500*** (0.28576) | -0.80581*** (0.30793) | -0.84863*** (0.30604) |
| EFTA-Reporter | | | 0.30624 (0.22203) | 0.32476 (0.22308) |
| EFTA-Partner | | | 1.11790*** (0.29721) | 1.05975*** (0.29655) |
| Mercosur-Reporter | | | | -0.08940 (0.22648) |
| Mercosur-Partner | | | | -1.18211*** (0.26359) |
| Log(GDP ^{PPP})Reporter | 2.43140*** (0.30628) | 2.55596*** (0.31599) | 2.56741*** (0.31805) | 2.56949*** (0.31869) |
| Log(GDP ^{PPP})Partner | 2.41684*** (0.30320) | 2.58950*** (0.30435) | 2.60515*** (0.30652) | 2.60724*** (0.30737) |
| Log(GDPper-capita ^{PPP})Reporter | -1.72316*** (0.32045) | -1.90715*** (0.31499) | -1.90449*** (0.31858) | -1.90032*** (0.32040) |
| Log(GDPper-capita ^{PPP})Partner | -0.90602*** (0.33233) | -0.98614*** (0.34373) | -1.05685*** (0.34543) | -1.08950*** (0.34165) |

Foreign Direct Investment in the European Union

| | | | | |
|------------------|-----------------------|----------------------|----------------------|----------------------|
| Constant | -0.14171 (3.69502) | 0.79586 (3.60654) | 1.06049 (3.56913) | 1.37276 (3.53684) |
| Observations | 174,002 | 174,002 | 174,002 | 174,002 |
| Pseudo R-squared | 0.7828 | 0.7839 | 0.7850 | 0.7857 |
| Pair FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| GDP Controls | Yes | Yes | Yes | Yes |

Notes: Clustered Standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1. All regressions include fixed effects for years and dyadic pair (symmetric). “Reporter” indicates the country that is the recipient of the FDI inflows and “Partner” indicates the country is the sender of the FDI.

Table 3: PPML estimate of the effects of the EU membership on FDI inflows:**Multilateral Resistance terms and alternative Free Trade Areas**

| | (1) | (2) | (3) | (4) |
|-------------------------|------------------------|------------------------|------------------------|-------------------------|
| | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) |
| EU-dummy | 0.40805** (0.16842) | 0.40678** (0.16893) | 0.41114** (0.17343) | 0.41114** (0.17343) |
| NAFTA-dummy | | 0.06220 (0.26258) | 0.06117 (0.26263) | 0.06117 (0.26262) |
| EFTA-dummy | | | -0.05701 (0.25575) | -0.05701 (0.25575) |
| Mercosur-dummy | | | | -1.10137** (0.47651) |
| Observations | 134,035 | 134,035 | 134,035 | 134,035 |
| Pseudo R-squared | 0.7780 | 0.7780 | 0.7780 | 0.7780 |
| Partner-year FE (MRTs) | Yes | Yes | Yes | Yes |
| Reporter-year FE (MRTs) | Yes | Yes | Yes | Yes |
| Pair FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |

Notes: Clustered Standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1. All regressions include fixed effects for years and dyadic pair (symmetric). “Reporter” indicates the country that is the recipient of the FDI inflows and “Partner” indicates the country is the sender of the FDI. Regressions run on the very same sample of other tables: 39967 obs. dropped because they belong to groups with all zeros (39967+134,035=174,002).

Table 4: PPML estimate of the effects of the EU membership on FDI inflows: The role of the European Single Market

| | (1) | (3) | (4) | (5) |
|---|-------------------------|-------------------------|-------------------------|-------------------------|
| | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) | PPML(FDI inflows) |
| EU Prior Start Single Market-Reporter | 0.04823 (0.20591) | 0.16335 (0.21091) | 0.14015 (0.23376) | 0.13967 (0.23503) |
| EU Prior Start Single Market-Partner | 0.46077* (0.27384) | 0.55422* (0.31832) | 0.81697** (0.36695) | 0.78415** (0.36876) |
| EU Post Start Single Market-Reporter | 0.53980*** (0.11179) | 0.57573*** (0.12221) | 0.63189*** (0.13797) | 0.65593*** (0.13909) |
| EU Post Start Single Market-Partner | 1.05524*** (0.14970) | 0.92875*** (0.15424) | 1.22144*** (0.20406) | 1.15550*** (0.20574) |
| NAFTA-Reporter | | -0.19749 (0.27159) | -0.23545 (0.31481) | -0.20143 (0.31696) |
| NAFTA-Partner | | -0.59404** (0.26061) | -0.41559* (0.23928) | -0.46446* (0.24110) |
| EFTA Prior Start Single Market-Reporter | | | -0.39368 (0.32641) | -0.39773 (0.32804) |
| EFTA Prior Start Single Market-Partner | | | 1.04184*** (0.34864) | 1.01432*** (0.34900) |
| EFTA Post Start Single Market-Reporter | | | 0.51672** (0.24482) | 0.53489** (0.24592) |
| EFTA Post Start Single Market-Partner | | | 1.29533*** (0.26108) | 1.23207*** (0.26128) |
| Mercosur-Reporter | | | | 0.01684 (0.24300) |
| Mercosur-Partner | | | | -1.08094*** |

Foreign Direct Investment in the European Union

| | | | | |
|--|-------------|-------------|-------------|-------------|
| | | | | (0.25509) |
| Log(GDP ^{PPP})Reporter | 2.59757*** | 2.61586*** | 2.62276*** | 2.62448*** |
| | (0.31122) | (0.31723) | (0.31863) | (0.31917) |
| Log(GDP ^{PPP})Partner | 2.58298*** | 2.64908*** | 2.66074*** | 2.66287*** |
| | (0.30701) | (0.30617) | (0.30743) | (0.30819) |
| Log(GDPper-capita ^{PPP})Reporter | -1.89656*** | -1.96932*** | -1.95304*** | -1.94907*** |
| | (0.31975) | (0.31570) | (0.32058) | (0.32223) |
| Log(GDPper-capita ^{PPP})Partner | -1.08155*** | -1.04977*** | -1.10476*** | -1.13657*** |
| | (0.33309) | (0.34331) | (0.34714) | (0.34341) |
| Constant | 1.06344 | 1.08486 | 1.07798 | 1.38330 |
| | (3.58181) | (3.56129) | (3.59991) | (3.56606) |
| Observations | 174,002 | 174,002 | 174,002 | 174,002 |
| Pseudo R-squared | 0.7834 | 0.7841 | 0.7853 | 0.7860 |
| Pair FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| GDP Controls | Yes | Yes | Yes | Yes |

Notes: Clustered Standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1. All regressions include fixed effects for years and dyadic pair (symmetric). “Reporter” indicates the country that is the recipient of the FDI inflows and “Partner” indicates the country is the sender of the FDI.

Table 5: PPML estimate of the effects of the EU membership on FDI inflows: The role of the European Single Market using Multilateral Resistance Terms

| | (1) PPML(FDI inflows) | (2) PPML(FDI inflows) | (3) PPML(FDI inflows) | (4) PPML(FDI inflows) |
|--------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| EU Prior Start Single Market | 0.36243 (0.25507) | 0.36714 (0.26300) | 0.36469 (0.27310) | 0.36470 (0.27310) |
| EU Post Start Single Market | 0.41582** (0.16958) | 0.41397** (0.17133) | 0.41860** (0.17462) | 0.41861** (0.17462) |
| NAFTA | | 0.04094 (0.29185) | 0.03889 (0.29212) | 0.03889 (0.29212) |
| EFTA Prior Start Single Market | | | 0.14571 (0.29893) | 0.14571 (0.29893) |
| EFTA Post Start Single Market | | | -0.52215 (0.64241) | -0.52215 (0.64241) |
| Mercosur | | | | -1.10117** (0.47650) |
| Observations | 134,035 | 134,035 | 134,035 | 134,035 |
| Pseudo R-squared | 0.7780 | 0.7780 | 0.7780 | 0.7780 |
| Partner-year FE (MRTs) | Yes | Yes | Yes | Yes |
| Reporter-year FE (MRTs) | Yes | Yes | Yes | Yes |
| Pair FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |

Notes: Clustered Standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1. All regressions include fixed effects for years and dyadic pair. “Reporter” indicates the country that is the recipient of the FDI and “Partner” indicates the country is the sender of the FDI. Regressions run on the very same sample of other tables: 39967 obs. dropped because they belong to groups with all zeros (39967+134,035=174,002).

Table A1: List of Variables

| | Definition | Unit | Source |
|---|---|-------------|---------------|
| Bilateral FDI flows | Inward FDI flows | USD, | UNCTAD |
| | (sender to target) | Millions | database |
| GDP (sender) | Total GDP of FDI | USD, PPP | IMF |
| | sender | billions | |
| GDP (target) | Total GDP of FDI target | USD, PPP | IMF |
| | | billions | |
| GDP per capita (sender) | GDP per capita of FDI | USD, PPP | IMF |
| | sender | | |
| GDP per capita (target) | GDP per capita of FDI | USD, PPP | IMF |
| | target | | |
| EU member (sender-partner) | Sender country is EU | 0,1 | EU website |
| | member | | |
| EU member (target-reporter) | Target country is EU | 0,1 | EU website |
| | member | | |
| EU dummy | Both Target and Sender | 0,1 | EU website |
| | countries are EU members | | |
| EU Pre- Single Market (target-reporter) | Target country is EU | 0,1 | EU website |
| | member but Single Market is not established yet | | |
| EU Prior start Single Market (sender-partner) | Sender country is EU | 0,1 | EU website |
| | member but Single | | |

| | | | |
|---|--|-----|-----------------------------|
| | Market is not established yet | | |
| EU Prior start Single Market | Both Target and Sender countries are EU members but Single Market is not established yet | 0,1 | EU website |
| EU Post start Single Market (target-reporter) | Target country is EU member and Single Market is established | 0,1 | EU website |
| EU Post start Single Market (sender-partner) | Sender country is EU member and Single Market is established | 0,1 | EU website |
| EU Post Start Single Market | Both target country and sender country are EU members and Single Market is established | 0,1 | EU website |
| NAFTA member (target-reporter) | Target country is NAFTA member | 0,1 | NAFTA website ¹⁸ |
| NAFTA member (sender-partner) | Sender country is NAFTA member | 0,1 | NAFTA website |

¹⁸ <https://www.nafta-sec-alena.org/Home/Welcome>

| | | | |
|--|--|-----|----------------------------|
| NAFTA-dummy | Both target and sender countries are NAFTA members | 0,1 | NAFTA website |
| EFTA member (target-reporter) | Target country is EFTA member | 0,1 | EFTA website ¹⁹ |
| EFTA member(sender-partner) | Sender country is EFTA member | 0,1 | EFTA website |
| EFTA-dummy | Both target and sender countries are EFTA members | 0,1 | EFTA website |
| EFTA Prior start Single Market (target-reporter) | Target country is EFTA member but Single Market is not established yet | 0,1 | EFTA website |
| EFTA Prior start Single Market (sender-partner) | Sender country is EFTA member but Single Market is not established yet | 0,1 | EFTA website |
| EFTA Prior start Single Market-dummy | Both target and sender countries are EFTA members but Single Market is not established yet | 0,1 | EFTA website |

¹⁹ <https://www.efta.int/about-efta/the-efta-states>

| | | | |
|--------------------------------------|--|-----|--------------------------------|
| EFTA Single Market (target-reporter) | Target country is EFTA member and Single Market is established | 0,1 | EFTA website |
| EFTA Single Market (sender-partner) | Sender country is EFTA member and Single Market is established | 0,1 | EFTA website |
| EFTA Single Market-dummy | Both target and sender countries are EFTA members and Single Market is established yet | 0,1 | EFTA website |
| Mercosur member (target-reporter) | Target country is Mercosur member | 0,1 | Mercosur website ²⁰ |
| Mercosur member (sender-partner) | Sender country is Mercosur member | 0,1 | Mercosur website |
| Mercosur-dummy | Both target and sender countries are Mercosur members | 0,1 | Mercosur website |

²⁰ <https://www.mercosur.int/en/>

Table A2. Descriptive Statistics

| Variable | <i>Obs.</i> | <i>Mean</i> | <i>Std. Dev.</i> | <i>Min</i> | <i>Max</i> |
|------------------------------|-------------|-------------|------------------|-----------------|------------|
| Bilateral FDI flows (inward) | 174,002 | 165.4375 | 1955.815 | 0 ²¹ | 345877.2 |
| GDP | 174,002 | 1031.529 | 2533.107 | 0.032 | 25278.77 |
| GDP per capita | 174,002 | 23264.81 | 19387.44 | 269.719 | 146981.8 |

²¹ We treat negative flows as zeros.

Table A3. Descriptive Statistics of Zero FDI inflows

| Year | Zero Obs. | Obs. | Percentage |
|------|-----------|-------|------------|
| 1985 | 705 | 918 | 77% |
| 1986 | 694 | 918 | 76% |
| 1987 | 685 | 918 | 75% |
| 1988 | 671 | 918 | 73% |
| 1989 | 669 | 918 | 73% |
| 1990 | 1,108 | 1,377 | 80% |
| 1991 | 1,207 | 1,482 | 81% |
| 1992 | 1,233 | 1,525 | 81% |
| 1993 | 1,317 | 1,634 | 81% |
| 1994 | 1,320 | 1,672 | 79% |
| 1995 | 5,381 | 6,418 | 84% |
| 1996 | 5,269 | 6,436 | 82% |
| 1997 | 5,125 | 6,475 | 79% |
| 1998 | 5,115 | 6,562 | 78% |
| 1999 | 5,052 | 6,574 | 77% |
| 2000 | 4,867 | 6,616 | 74% |
| 2001 | 4,781 | 6,613 | 72% |
| 2002 | 4,782 | 6,656 | 72% |
| 2003 | 4,766 | 6,696 | 71% |
| 2004 | 4,626 | 6,712 | 69% |
| 2005 | 4,609 | 6,731 | 68% |
| 2006 | 4,488 | 6,736 | 67% |
| 2007 | 4,297 | 6,787 | 63% |

Foreign Direct Investment in the European Union

| | | | |
|------|-------|-------|-----|
| 2008 | 4,281 | 6,833 | 63% |
| 2009 | 4,388 | 6,866 | 64% |
| 2010 | 4,233 | 6,918 | 61% |
| 2011 | 4,201 | 6,919 | 61% |
| 2012 | 4,233 | 6,939 | 61% |
| 2013 | 4,195 | 6,970 | 60% |
| 2014 | 4,280 | 6,954 | 62% |
| 2015 | 4,264 | 6,964 | 61% |
| 2016 | 4,308 | 6,977 | 62% |
| 2017 | 4,315 | 6,947 | 62% |
| 2018 | 4,839 | 6,423 | 75% |
