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Who stands behind European FDI investors? A novel characterisation of pass-through within the EU[1]

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1 This presentation was prepared for the conference. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the event.

Who stands behind European FDI investors? A novel characterisation of pass-through within the EU

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Abstract

Macro-statistics on foreign direct investment (FDI) provide an indication of bilateral direct investment linkages between country pairs. However, with a large part of FDI being intermediated by financial centres, official FDI data often depict oversized linkages involving these intermediate countries. We exploit Orbis company-level data on corporate ownership to break down who is the ultimate owner behind bilateral investing relationships. We thus add an additional dimension to standard FDI data, namely the shares of a country's FDI activity which can be attributed to domestic corporate groups and to foreign-controlled corporations, respectively. Focusing on intra-EU FDI, we show that for the group of EU FDI hubs (Belgium, Cyprus, Hungary, Ireland, Luxembourg, Malta and the Netherlands), foreign corporations control most of the outward foreign investment activity. We also show that more than a quarter of intra-EU FDI is controlled by non-EU corporations, with the US standing behind, as the ultimate owner, a share even larger than that of any individual EU country. We also provide evidence on the sectoral characterisation of intra-EU FDI, with a large share of FDI ultimately originating from manufacturing and ICT groups being intermediated by EU FDI investors belonging to sectors associated with holding companies and other special purpose entities.

Keywords: foreign direct investment, financial globalisation, external statistics

JEL classification: C82, F21, F62

Contents

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1. Introduction

Foreign Direct Investment (FDI) data play a key role in analysing economic interconnectedness and integration. FDI is generally assumed to create stable and long-lasting connections between economies, reflecting investing decisions based on long-run factors. FDI statistics are key metrics used to investigate the attractiveness and competitiveness of economies, their role in global production networks and the economic impact generated by foreign investors. Bilateral FDI data are important indicators to understand countries' bilateral economic ties and financial exposures.

With large part of global FDI nowadays being intermediated by financial centres, FDI data have become an imperfect indicator for analysis of economic linkages and bilateral exposures. Complex corporate structures, financial engineering, and fiscal optimisation strategies by multinationals (MNEs) often involve channelling large amounts of equity and intra-group debt through subsidiaries located in financial centres, before reaching their final investing destinations. Official FDI statistics only capture the investment links between immediate partner countries, to identify where financial claims and liabilities are created and held; however, they do not provide information with respect to the ultimate source of the investment and thus on who takes the underlying investment decisions or bears the ultimate risks. FDI datasets nowadays show outsized amounts of FDI recorded vis-à-vis financial centres and a distortion in the geography of major countries' bilateral exposures.[2]

Interest is high among researchers and policy-makers to re-map the size and geography of global cross-border financial links filtering out the role of intermediate financial centres and providing a better representation of the underlying economic connections. *Damgaard et al. (2019)* show that investment into corporate structures with no economic substance ("phantom" FDI) may account for almost 40% of global FDI and, only if removing the role of special purpose entities (SPEs), the true structure of the global FDI network can be uncovered. *Borga and Caliandro (2018)* provide a methodology to estimate consolidated FDI statistics removing pass-through capital and detail how the amount of pass-through capital in operating affiliates is quite extensive, accounting for around 25% of inward FDI positions – excluding resident SPEs – in a sample of European countries. *Gregori et al (2019)* build up a database on foreign ownership of EU firms, which singles out the importance of non-European ultimate owners of companies active in the EU. *Bertaut and Curcuru (2019)* and *Coppola et al. (2020)* focus on the large size of portfolio securities issuance by MNEs' subsidiaries resident in offshore financial centres and their estimates uncover a larger exposure of advanced economies to emerging markets than visible in official residency-based data.

The international statistical community is undergoing an overall review of the methodology underpinning the compilation of macroeconomic statistics and ensuring a harmonised approach in the development of supplementary FDI indicators

[2] See *Blanchard and Acalin (2016)* and *Lane and Milesi-Ferretti (2017)* for an overview on the main issues associated to the interpretation of the recent developments in global FDI.

is high on the agenda.[3] Several countries have recently extended their regular FDI publications by introducing supplementary indicators providing additional information on e.g. the breakdown of inward FDI positions by ultimate investing economy, the breakdown of outward FDI positions by ultimate host economy, the breakdown of FDI associated to the activities of special purpose entities (SPEs). [4]

Our paper contributes to the ongoing discussions on providing supplementary FDI indicators. We use a simple framework that decomposes countries' outward FDI by the residency of the ultimate controlling investor to shed additional light on the structure of a country's foreign investment activity. Decomposing outward FDI by ultimate controlling parent, the amount of a country's investment abroad ultimately due to decisions of domestic companies (i.e. the ultimate controlling parent is a domestic company) can be separated from that ultimately controlled by foreign companies (i.e. the ultimate controlling parent is foreign). This analytical presentation of FDI is a useful complement to the standard FDI presentations as it allows to disentangle the part - if any - of foreign investment activities which are beyond the control of the investing country and thus may be driven by different motives and intentions compared with the part of FDI abroad which is domestically controlled.

Focusing on intra-EU FDI we show that more than a quarter of these linkages is actually controlled by corporate groups from outside the EU, with a prominent role of US corporations which ultimately stand behind a major part of the investment activities of large EU FDI hubs, such as Ireland, Luxembourg and the Netherlands. While countries within the EU share strong commercial, economic and financial ties, bilateral FDI among European countries does not only reflect the strong economic integration within the block, but strongly depends on the organisational choices of large multinationals which make use of EU financial centres as hubs for their global operations. Standard FDI data would show that a small number of EU FDI hubs (Belgium, Cyprus, Hungary, Ireland, Luxembourg, Malta, Netherlands), which combine to only around of 10% EU GDP, are responsible for almost 60% of intra-EU FDI as immediate FDI investors.[5] We make use of information on corporate ownership structures and balance sheet information at the company-level to go beyond the standard FDI presentation and understand the residency of the ultimate corporate owner of EU direct investors. We can thus provide a novel characterisation of intra-EU FDI patterns, breaking down each investing position by the residency of the ultimate corporate owner.

[3] See, for example, the Direct Investment Task Team guidance note "*D6 Ultimate Investing Economy/Ultimate Host Economy and Pass-through Funds*" at https://www.imf.org/en/Data/Statistics/BPM/DITT

[4] See, for example, the OECD FDI dataset for an overview of data availability on these supplementary indicators for OECD countries. Eurostat is planning to publish EU countries' FDI based on ultimate investing economy concept in the course of 2022. The IMF has recently published a new dataset on SPEs: https://www.imf.org/en/News/Articles/2022/03/02/pr2253-imf-announces-the-release-of-a-new-database-on-special-purpose-entities

[5] Average over the period 2013-2018 for intra-EU FDI assets, according to data collected by the ECB in the context of quarterly Balance of Payments dataset. In this paper, given our latest data point is for 2018, we consider the EU in its EU28 composition, thus still including the United Kingdom.

2. Methodology

2.1 Decomposing outward FDI by ultimate controlling parent

The standard presentation of the geography of FDI is on an immediate counterparty basis, allowing to understand where the funds invested in the domestic economy come from or where the domestic funds are invested: for inward FDI, this reflects the country from which the domestic company directly receives foreign funds; for outward FDI, the country to which the domestic direct investor provides funds. Given that, in the presence of complex corporate structures by large multinationals, direct investment relationships may span through long chains of ownership across multiple countries, alternative analytical presentations have emerged, moving from an immediate towards an *ultimate counterparty basis*. For inward FDI, the ultimate basis shows the country of the ultimate direct investor (ultimate investing country, or UIC). This presentation allows to look-through the intermediate ownership chain of owners to understand who is ultimately controlling the foreign investment in the domestic enterprise.

For outward FDI, the presentation by ultimate basis looks-through the intermediate holding-companies in foreign countries to identify the location of the final investment (ultimate host country, or UHC). An additional dimension of the geography of FDI on an ultimate basis, namely the decomposition of *outward FDI by ultimate controlling parent*, distinguishes the amount of a country's investment abroad ultimately due to decisions of domestic companies (i.e. the ultimate controlling parent of the domestic direct investor abroad is a domestic entity) from that which is ultimately controlled by foreign companies (i.e. the ultimate controlling parent of the domestic direct investor abroad is foreign). This presentation is a useful complement to inward FDI by UIC and outward FDI by UHC, as it shows, for each country engaging in direct investment abroad, the ultimate control on its foreign investing activity, thus allowing to disentangle the part of foreign investment genuinely depending on ultimate decisions by domestic firms. This presentation thus provides a broad definition of "pass-through" FDI, singling-out the amounts of FDI invested abroad, which are under ultimate control of non-domestic corporations.[6]

Following this approach, outward foreign direct investment by country *i* (investor country) into country *h* (host country) on an immediate basis can be decomposed, on an ultimate controlling parent basis, in three components:

$$FDI_{i,h} = FDI_{i,h}^{i} + FDI_{i,h}^{h} + \sum_{f \in F} FDI_{i,h}^{f} \qquad (1)$$

- a *domestic-controlled component*, $FDI_{i,h}^{i}$, which reflects investment by country i into country *h*, controlled by ultimate domestic investors based in country *i*;

[6] For an overview on the current discussions in the statistical community on the topics of FDI by UIC/UHC and pass-through FDI, see the Direct Investment Task Team guidance note "D6 Ultimate Investing Economy/Ultimate Host Economy and Pass-through Funds" at https://www.imf.org/en/Data/Statistics/BPM/DITT

- a *host country controlled (or round-tripping) component*, $FDI_{i,h}^{h}$, which reflects investment by country i into country *h*, controlled by ultimate investors from host country *h*;
- a *foreign-controlled (or third country) component*, $\sum_{f \in F} FDI_{i,h}^{f}$, which reflects investment by country i into country *h*, controlled by ultimate investors from the set of foreign (third) countries *F*

The round-tripping component and the foreign-controlled-component represent the part of outward FDI outside the ultimate control of the domestic economy and whose dynamics and underlying motivation may differ from those of domestic-controlled outward FDI. This decomposition of outward FDI is particularly relevant for analysing and understanding investment patterns by countries which host a large proportion of companies engaged in direct investment abroad which are at an intermediate level in a corporate ownership chain, as their outward FDI positions may be strongly inflated by the round-tripping and foreign-controlled components, in addition to the genuine domestic-controlled investment abroad.

Aggregating investor country's i bilateral investment links $FDI_{i,h}$ across the full set *W1* of possible host countries *h*, one obtains the investment of country i in the rest of the world: $FDI_{i,W1}$. This overall investment abroad by country i can be decomposed showing which part of a country's investment abroad is domestic-controlled, host country-controlled and third country-controlled:

$$FDI_{i,W1} = FDI_{i,W1}^{i} + FDI_{i,W1}^{H} + FDI_{i,W1}^{F} \qquad (2)$$

If we define $\theta_i = FDI_{i,W1}^{i} \,/\, FDI_{i,W1}$ as the proportion of a country's i investment abroad controlled by domestic enterprises, $(1 - \theta_i) \in [0,1]$ describes country's i propensity of being an intermediate FDI investing country. In the extreme case where $(1 - \theta_i)$ = 1, country's i investment abroad can be fully ultimately attributed to non-resident owners and thus country i acts purely as an intermediate FDI investing country.

Aggregating all outward investment positions $FDI_{i,W1}$ across the full set *W0* of possible investor countries *i*, one obtains the overall global FDI: $FDI_{W0,W1}$. The overall global FDI position can be decomposed showing how much of the global FDI is ultimately controlled by each country *i*:

$$FDI_{W0,W1} = \sum_{i \in W0} FDI_{W0,W1}^{i} \qquad (3)$$

Where, for each country i, $FDI_{W0,W1}^{i} = FDI_{i,W1}^{i} + \sum_{j \neq i} FDI_{j,W1}^{i}$ measures the amount of global FDI country i ultimately controls, either as immediate direct investor or, indirectly, by controlling intermediate investing links in countries *J*, thus showing the overall ultimate share of country i on global FDI amounts.

This type of decomposition of global FDI does not aim at directly removing any pass-through investment from the official figures: its purpose is to distribute the total amounts of FDI to the countries which are ultimately controlling the activities of intermediate FDI investors. Intermediate outward FDI linkages are not removed from the data, but they are singled-out as being controlled by a country different from that of the intermediate FDI investor.

We can illustrate the added value of this supplementary FDI framework with a real-life example. Figure 1 shows a (simplified) version of the corporate structure of the Mexican group Cemex at end-2017. The foreign operations of the Mexican group

Cemex are held by a (holding) company in the Netherlands (New Sunward Holding B.V.), which controls a Spanish subsidiary (CEMEX Espana S.A.), which in turn controls, directly or indirectly through other subsidiaries, most of the group activities in the rest of the world, including all the other group's subsidiaries in other European countries.

Within the standard FDI framework, only bilateral links between the immediate investor and host country are depicted and, in this case the following bilateral links would emerge from the initial layers[7] of the Cemex FDI structure:

- investment by Mexico into Netherlands (contributing to the aggregate Mexican FDI assets)
- investment by Netherlands into Spain (contributing to the aggregate Dutch FDI assets)
- investment by Spain into France and the UK (contributing to the aggregate Spanish FDI assets)

In the standard FDI framework there would be no trace of Mexican (equity) FDI investment in any other foreign country, apart from the FDI direct link with the Netherlands, which sits at the top of Cemex's structure; there would be no way to disentangle that e.g. part of Spanish overall FDI assets are ultimately controlled by a Mexican group.

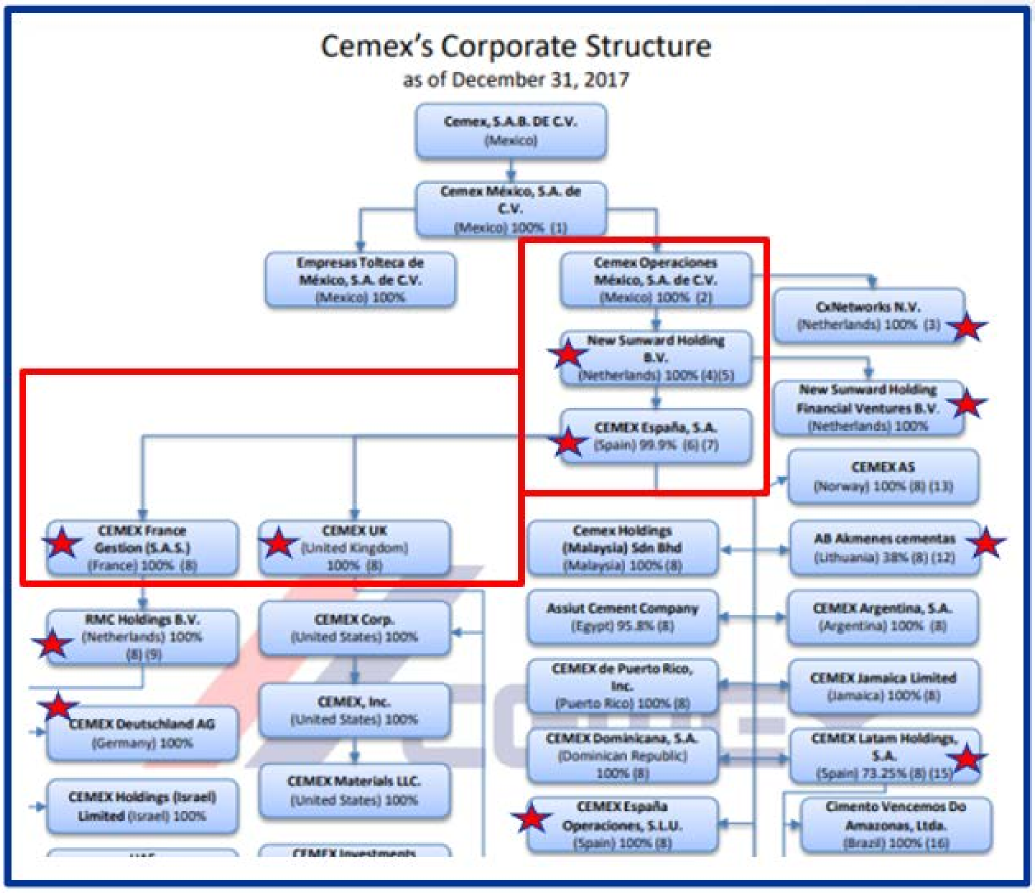
Within the supplementary framework suggested in this paper, we would be able to complement the information on the immediate bilateral links with additional information on the nationality ultimately controlling the investment chain. What would emerge would be the following decomposition of bilateral FDI links:

- investment by Mexico into Netherlands, ultimately controlled by Mexico (contributing to the aggregate Mexican FDI assets, controlled by domestic Mexican companies)
- investment by Netherlands into Spain, ultimately controlled by Mexico (contributing to the aggregate Dutch FDI assets, controlled by foreign companies)
- investment by Spain into France and the UK, ultimately controlled by Mexico (contributing to the aggregate Spanish FDI assets, controlled by foreign companies)

The suggested framework, fully consistent with the standard FDI presentation, provides useful information on who ultimately controls intermediate FDI linkages worldwide.

[7] For ease of exposure we consider here only the initial layers of the structure, as encircled with red rectangles in Figure 1.

Figure 1: A (simplified) real example of a global MNE and its footprint on FDI links



Source: Authors' adaptation based on information from the Cemex corporate website
Note: The chart shows a partial view of the corporate structure shown on Cemex corporate website. The full structure is shown here: https://www.cemex.com/documents/20143/160115/corporate-structure.pdf. Only the initial layers of the corporate structure are shown. Red stars identify the subsidiaries in the corporate structure resident in the EU. The red rectangles delineate the FDI relationship described in the above text paragraph.

2.2 Building up intra-EU FDI triads from Orbis firm-level data

Our aim is to provide an enhanced dataset on intra-EU FDI positions where, for each bilateral FDI link between EU countries, the breakdown by the geography of the ultimate controlling investor is also included.[8] Since detailed information on the geography of the ultimate controlling parent (UCP) of FDI abroad is not available from standard macroeconomic data publications[9], we build-up the details of our enhanced FDI dataset from Bureau van Dijk's Orbis microdata on companies' balance

[8] We focus on intra-EU positions mainly for two reasons: first, as we are interested in the extent to which the recent surge in intra-EU FDI originates from genuine FDI activities of EU companies. Second, due to our micro-data limitations: the growing literature using Orbis microdata highlights how the coverage of information needed to build-up representative FDI linkages is rather poor for non-European countries.

[9] One notable exception is represented by Ireland, where the CSO publishes annual FDI data, with a breakdown of the outward position between domestic and foreign controlled corporations. Comparable information is also present in topical statistical publications for Austria and Switzerland.

sheet and ownership structure, in a similar fashion to the seminal works by *Kalemli-Ozcan et al (2015, 2019)*, *Borga and Caliandro (2018) and Damgaard et al. (2019)*.

As a first step, we identify in Orbis all the ownership relationships giving rise to an FDI link between EU companies, according to the standard FDI definition of intra-EU linkages, that is we extract information on all active ownership linkages between EU companies, where at least 10% of the equity capital of a (EU-resident) company is directly owned by a foreign (EU-resident) company. For each of these ownership relationships we calculate the corresponding FDI amounts, multiplying the value of the equity capital on the balance sheet of the subsidiary by the relative ownership share of each direct investor. In this way we obtain a fully-fledged micro-level FDI dataset consisting of *subsidiary-by-investor* FDI links. These micro-level linkages are in line with the standard definition of intra-EU FDI, as they show only the direct linkage between a subsidiary and its FDI immediate shareholder(s). We then transform the subsidiary-by-investor dataset into *a subsidiary-by-investor-by-ultimate controlling parent* dataset, adding to each micro-level FDI link additional information based on the residency of the ultimate controlling parent (UCP), that is the company ultimately controlling the intra-EU direct investor.[10] While the subsidiaries and direct investors in our dataset are limited to residents within the EU, the residency of the UCP is left unrestricted, so that the country of ultimate control can be both an EU or extra-EU country. At this point, we can simply aggregate the company-level FDI triads (i.e. the subsidiary-by-investor-by-ultimate controlling parent company linkages) across their country dimension, to obtain a macro-level dataset of intra-EU FDI triads : in this way, we obtain a dataset where, for each EU FDI investing country, we can identify not only the set of host EU countries, but also the set of countries (including the domestic country) ultimately controlling these bilateral links – it is the implementation of the decomposition of bilateral outward FDI as shown in equation (1).

Several important choices and assumptions had to be made when building the extended FDI dataset from the available corporate information from Orbis.

First, identification of FDI links in Orbis is possible only for equity assets, while there is no information on intra-group debt. In practice, estimation of FDI equity linkages from Orbis is done through combining information on subsidiaries' total shareholders' funds and information of direct investors ownership percentages and residency. Once all the EU enterprises with foreign subsidiaries in other EU countries are identified, their ownership percentage in their foreign subsidiaries is multiplied by the shareholders' funds to estimate the equity claim the direct investors has on the subsidiaries. While Orbis also presents balance sheet information on debt liabilities for each company, there is no immediate way to understand who the holder of this debt is. Similarly to *Borga and Caliandro (2019)* we assume debt financing follows the same pattern as equity financing in terms of the country-by-country distribution of ultimate controlling parents, thus we do not engage in any explicit estimation of FDI debt from Orbis company-links – as instead done in *Damgaard et al (2019)* on the basis of estimates from Orbis information on overall companies' debt and equity-debt proportions in macro-FDI datasets.

[10] If the company identified as immediate direct investor is not controlled by any further corporation, there will be a complete equivalence between the residency of the immediate investor and ultimate controlling parent. The same happens if the two companies differ, but they are resident in the same country.

Second, in the identification of the country of the ultimate controlling parent, we assume each immediate FDI investor is fully controlled by its ultimate controlling parent. Focusing on identifying the country of the entity that exerts control over the direct investor is fundamental in our approach since we want to understand if immediate direct investors are ultimately controlled from foreign countries or domestically. As controls assumes that an entity owns more than 50% (directly or indirectly) of the voting power in a subsidiary, ultimate control can be exercised even if the ultimate controlling parent controls (directly or indirectly) only 51% of the equity of the immediate direct investor. In this case, we attribute the full 100% of the immediate FDI relationship to the ultimate controlling parent, even if the effective control is lower.[11] This approach is referred to as the *winner-takes-all methodology.*[12]

Third, in the identification of the country of the ultimate controlling parent we focus on *ultimate corporate control*, thus not investigating if there is any further cross-border control relationship on top of the last corporate layer. While it is normally the case that the residency of the controlling entity at the top of the corporate group is the same as the natural persons who may in turn hold control of this entity, there are some particular constructs for which this does not hold true. This would be the case when a natural person from country X controls the corporate group Y, through a holding company established in country Z: our methodology would show country Z as the country of the ultimate controlling parent, while a further cross-border layer exists involving control by natural persons. Given the predominance of these holding structures in some limited jurisdictions (e.g. Luxembourg and the Netherlands), our baseline estimates may provide some over-estimation of ultimate control attributed to countries hosting these holding companies against countries where the natural persons behind the holding companies reside.

Fourth, some of the company-level triads identified in Orbis miss information on the residency of the ultimate controlling parent. In this case, for the largest missing bilateral intra-EU links (top 100 missing links for each investor country) we impute manually information from external data-sources[13] , while for the remaining links we assume that the missing information is distributed in the same proportion as the existing ultimate controlling parent information for that investor country. Overall, for each EU investor country less than 5% of value of FDI needs this additional imputation.

Finally, while our framework is based on the residency of the ultimate corporate layer as identified in Orbis, our baseline estimation provides a specific treatment for US corporate inversions and for Chinese offshore listed abroad registered companies. Information on the ultimate corporate controlling parent in Orbis reflects the place of incorporation of the ultimate controlling corporate layer in the group structure: while this information normally should provide sufficient information to establish which country hosts the company controlling EU FDI investors, in the above mentioned cases there is an evident mismatch between the place of incorporation of

[11] Please note that, instead, to build the initial immediate investor-immediate subsidiary relationship we follow the usual proportional approach where each immediate investor is attributed an FDI share in each subsidiary proportionally to the effective capital share invested in the subsidiary. This is consistent to the usual FDI definition.

[12] For further information see the Direct Investment Task Team guidance note "D6 Ultimate Investing Economy/Ultimate Host Economy and Pass-through Funds" at https://www.imf.org/en/Data/Statistics/BPM/DITT

[13] We mainly use information from companies' annual reports and statistical business registers.

the ultimate corporate controlling company in Orbis and the country where corporate control is actually exercised. Recent studies by *Tabova (2020*) and *Coppola et al. (2020)* show how these corporate constructions have a strong distortionary impact on understanding the geography of global corporate control. Thus, we provide an exception to our framework based on the residency of ultimate corporate parents as identified in Orbis and we do the following: 1) US corporations, which had inverted to Ireland and are identified in Orbis as having an Irish ultimate controlling parent, are re-allocated to the US as the country of ultimate control; 2) Chinese corporations listed offshore and incorporated outside mainland China are re-assigned to China as the country of ultimate control. Overall, the impact is rather relevant in our sample for US-inverted companies – around 30% of Irish intra-EU FDI is reassigned from being domestically controlled to being foreign controlled from the US - while it is rather insignificant for Chinese offshore companies (only around 1bn EUR is reallocated for 2018) – due to the fact that these companies do not appear as ultimate owners behind large intra-EU FDI linkages in our dataset.

Overall, the coverage rate of our dataset compared with standard macroeconomic statistics is encouraging and in line with previous studies on constructing representative macroeconomic datasets using Orbis data: specifically, our dataset covers around 65% of intra-EU FDI positions in 2018 and provides a similar picture as official statistics with regards to the country distribution of EU immediate FDI investors.

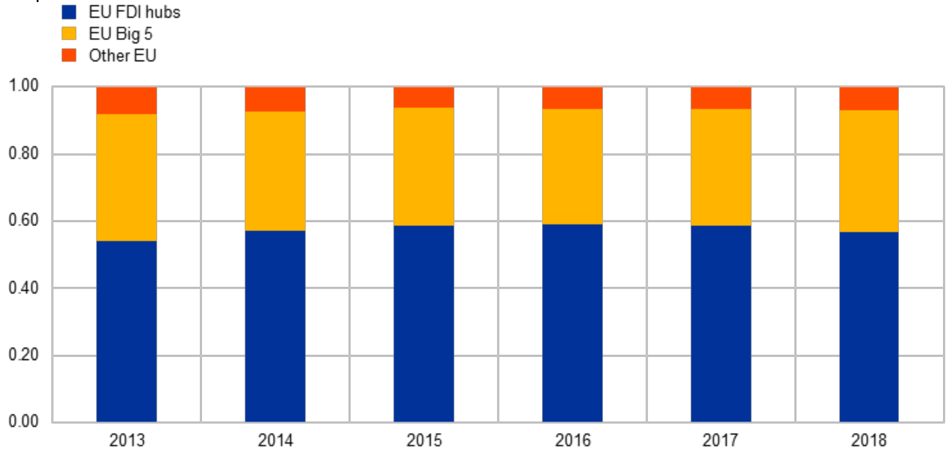
3. Main findings

Breaking down FDI linkages between EU countries following the approach shown in Section 2, we provide a novel characterization of the intra-EU FDI network, disentangling how much of outward FDI from each EU country is ultimately controlled by domestic or foreign companies.

European FDI statistics have been heavily influenced by multinational groups setting-up part of their corporate structures in several EU FDI hubs, such as the Netherlands, Luxembourg or Ireland, to benefit from tax advantages and other incentives, such as enhanced ownership rights and easy access to capital markets or sophisticated financial services. A sizeable proportion of subsidiaries set-up in these EU FDI hubs consist of holding entities, which sit at the top of other foreign activities of the group and thus have disproportionately large foreign holdings on their balance sheet, generating large amounts of FDI assets for the host country, without correspondingly generating much employment nor having any significant physical presence in the host country. When this type of corporate ownership structures emerges, countries hosting holding companies emerge as large FDI investors, even though they are mostly re-investing funds which are ultimately controlled from somewhere else. Official statistics show (see Chart 1) that a small number of EU FDI hubs (Belgium, Cyprus, Hungary, Ireland, Luxembourg, Malta, Netherlands), which combine to only around of 10% EU GDP, acts as (immediate) investor in around 60% of intra-EU FDI activity in 2013-2018, a larger investing role than the largest 5 EU economies (which contribute to around 70% of EU GDP).

Chart 1: Main intra-EU investors in official FDI statistics

Proportion of overall intra-EU FDI assets



Source: Authors' calculations based on quarterly balance of payments data, ECB.

Note: "EU FDI hubs" include BE, CY, IE, LU, MT, NL, HU. "EU Big 5" includes GB, DE, FR, IT, ES. "Other EU" includes the remaining EU countries not singled-out in the chart. EU is intended as EU-28, thus including the current EU-27 composition plus GB. FDI includes both equity and debt assets.

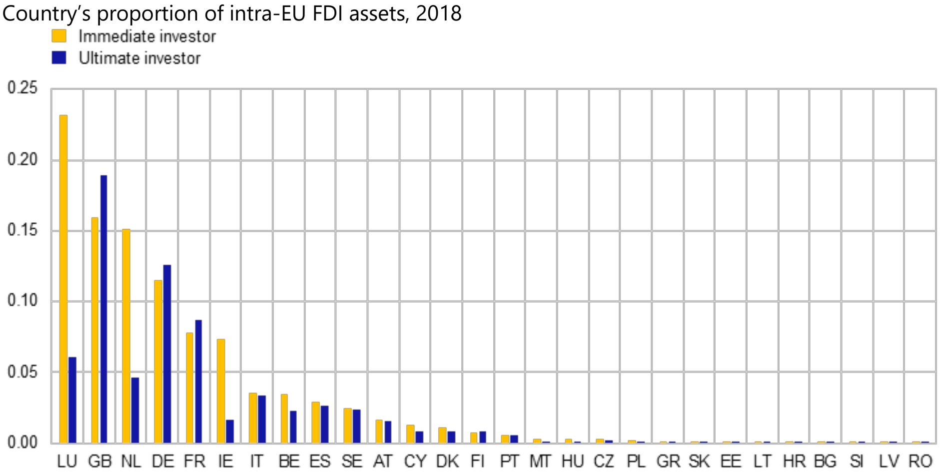
However, these figures from official statistics do not allow us to investigate what is behind the oversized role these EU FDI hubs retain within intra-EU FDI linkages: are they ultimately controlling the large FDI positions they originate as immediate investors? Or are they simply intermediating FDI linkages ultimately controlled by other large EU economies or by extra-EU advanced or emerging economies? Results from our enhanced FDI dataset, which is based on aggregating micro-level information from Orbis on immediate FDI linkages and ultimate corporate control, help us putting this disproportionate role of EU FDI hubs within the EU FDI network into context.

While Luxembourg, the Netherlands and Ireland, figure prominently among the main FDI investors within EU, accounting for around 50% of the intra-EU FDI investing activity as immediate investors, their role as ultimate investors is much more limited, as they ultimately control only around 10% of this investment activity (see Chart 2). The same phenomenon appears for the remaining FDI hubs (Belgium, Cyprus, Malta, Hungary) which have much smaller contributions as ultimate controlling investors of intra-EU FDI compared with those as immediate FDI investors. The opposite – however not fully compensating – result is observed for several large EU countries (the UK, Germany, and France) where our dataset shows that they are behind a larger share of intra-EU FDI as ultimate investors than they are as immediate investors, providing some insights that part of the investment activity they ultimately control spans through several EU countries. For the remaining EU countries our data show that their FDI positions do not substantially differ when considering them as immediate or ultimate investors behind intra-EU FDI linkages.[14]

[14] This may come from two situations: the first option is that a country's immediate FDI activity is fully domestically controlled and its domestic FDI groups do not create investment chains in other EU countries, thus having an equal value within the intra-EU FDI network as immediate and ultimate investor; but this situation of similarity of immediate and ultimate share in the EU FDI network can also materialise if a country's immediate FDI activity is only partly domestically controlled, but its domestic groups create investment chains in other EU countries.

Chart 2: EU countries' contribution to intra-EU FDI: role as immediate vs ultimate investor

Country's proportion of intra-EU FDI assets, 2018



Source: Authors' calculations based Orbis data.

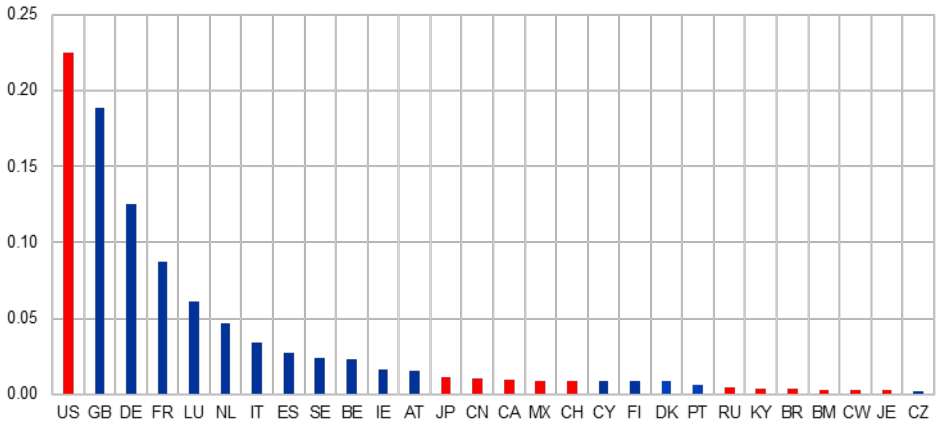
Note: Yellow bars represent EU countries' contribution to intra-EU FDI as immediate source of FDI investment: they sum up to 1; blue bars represent EU countries' contribution to intra-EU FDI as ultimate sources of FDI investment: they do not sum-up to 1 as some of the intra-EU FDI is ultimately controlled by extra-EU countries.

Overall, EU countries appear as ultimate controlling investors of less than 70% of the immediate intra-EU FDI links: the remaining part of the intra-EU immediate FDI links are thus ultimately controlled by companies from outside the EU. Our dataset shows how non-EU countries have a sizeable role as ultimate investors behind intra-EU FDI linkages, with an outsized role of the US. In fact, ranking individual countries by the share they ultimately control in intra-EU FDI (see Chart 3), the US turns out as the largest individual investor, ultimately controlling more than 20% of the FDI linkages between EU countries. This shows that a sizeable part of intra-EU FDI linkages ultimately depends on investing decisions by US corporate groups and thus may react to different incentives and conditions than corresponding intra-EU links controlled by EU groups. These differences in the ultimate source of control of intermediate FDI linkages are not visible in standard FDI datasets, while they can be disentangled in the enhanced framework we propose. In addition to the US, albeit with a minor role, also other advanced and emerging non-EU economies, such as Japan, China, Canada, Mexico and Switzerland, have some relevant role as ultimate investors behind intra-EU linkages: each of them ultimately controls around 1% of intra-EU FDI and combined control more than the intra-EU FDI ultimately controlled by Italy or Spain. With a minor share also Russia and Brazil appear as ultimate investors into intra-EU FDI links, with a similar importance (less than 1%) as some offshore financial centre such as Cayman Islands, Bermuda, Curacao, and Jersey.[15]

[15] As mentioned in Section 2, the importance of these offshore centers as ultimate investors may be overstated in our dataset due to our assumption of stopping at the last corporate layer and not to look-through the nationality of natural persons behind this last corporate control layer. For example, if a British person has set-up a holding corporate structure for some FDI investments in Jersey, the ultimate controlling country identified in our procedure will be Jersey and not the UK.

Chart 3: Who is ultimately behind intra-EU FDI linkages?

Ultimate controlling parents of intra-EU FDI assets, proportion of overall intra-EU FDI, 2018



Source: Authors' calculations based on Orbis data.

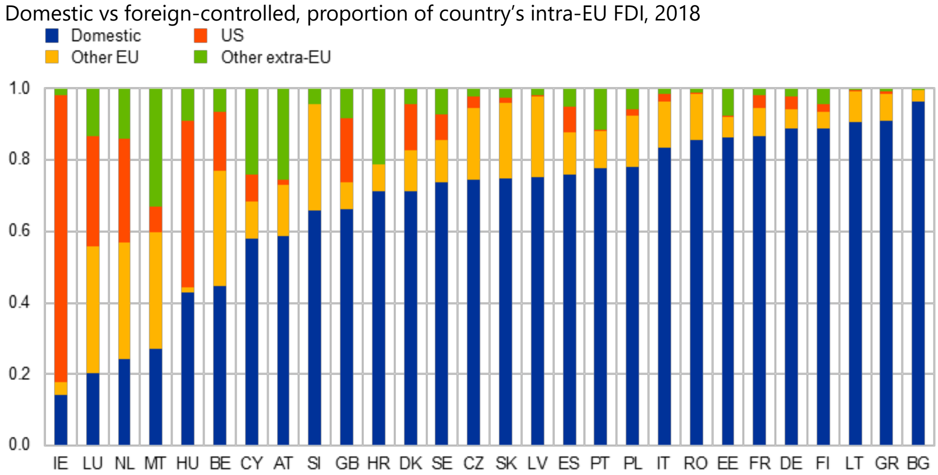
Note: Countries highlighted in red are extra-EU countries. Only countries which contribute individually (as ultimate corporate owners) to at least 0.2% of intra-EU FDI are shown. Overall, the countries shown in the chart contribute, as ultimate corporate owners, to around 98% of intra-EU FDI.

Turning to the decomposition of each country's intra-EU outward FDI, our dataset shows that for EU FDI hubs the majority of their FDI activity is ultimately foreign controlled (see Chart 4). For Ireland, Luxembourg, and the Netherlands, who stand among the largest intra-EU immediate FDI investors, only less than a quarter of their intra-EU FDI assets are actually controlled by domestic groups, thus considerably downplaying these countries' outsized role in the intra-EU FDI network. While for Luxembourg and the Netherlands it is corporate groups from both other EU countries and the US controlling the largest share of their FDI activity in a similar proportion (around 30% each) – plus a smaller, but significant (more than 10%) share of ultimate control from other non-EU groups – it is US groups fully dominating Ireland's FDI outward activity into other EU countries (controlling around 80% of Irish intra-EU FDI).[16] US companies also have a disproportionate influence on intra-EU FDI investment by Hungary, where around 50% is ultimately controlled by US companies. US companies also control a sizeable size (more than 10%) of intra-EU FDI from Belgium, the UK and Denmark. Companies from other extra-EU countries have a sizeable control over intra-EU FDI by Malta and Cyprus, where they ultimately control more than 20% of intra-EU FDI activity. For these two FDI hubs, we see considerable ultimate control coming from offshore centres (e.g. Bermuda, Bahamas, British Virgin Islands), which may signal the presence of a chain of holding structures set-up with the ultimate corporate parent registered directly offshore – but the natural persons behind these investments structures are most likely nationals of third countries rather than nationals of offshore centres. For Cyprus we also see a non-negligible ultimate control from Russian ultimate controlling (corporate) parents.

[16] Please note that, as mentioned in Section 2, we consider US companies which had gone through corporate inversions (i.e. redomiciled companies) to Ireland as ultimately controlled by the US in our dataset. These companies alone stand behind around 30% of Irish intra-EU FDI ultimately controlled by the US in our dataset. The outsized role of US companies for Irish FDI is also visible in the publication of annual Irish FDI by the CSO which shows around 40% of outward Irish FDI in 2018 is being controlled by US redomiciled companies: https://www.cso.ie/en/releasesandpublications/ep/p-ia/internationalaccountsq12021final/redomiciledplcs2020/ .

Chart 4: Domestic vs foreign-controlled FDI assets

Domestic vs foreign-controlled, proportion of country's intra-EU FDI, 2018



Source: Authors' calculations based on Orbis data.

Note: The blue part of the stacked bat represents the percentage of EU countries' intra-EU FDI which is controlled by domestic corporate groups; the yellow part shows its intra-EU investment ultimately attributable to corporate groups from other EU-countries; red bars for its intra-EU investment controlled by US corporate groups; green for its intra-EU investment controlled by corporate groups from outside the EU (and not US groups).

For the remaining of the EU countries, domestic groups are controlling the majority of their outward FDI investment activity into other EU economies, with some heterogeneity on the share of FDI domestically controlled and the geography distribution of the residual part, which is foreign controlled. For Germany, France, Italy and Spain more than 80% of the investment into other EU countries is ultimately controlled by domestic groups, in line with the traditional view that outward FDI represents decision to invest abroad by the investing country and not simply pass-through of investment controlled from elsewhere. For the UK it is only around two thirds of their FDI activity being domestically controlled, with a sizeable role of US companies behind the remaining part. However, foreign control of outward FDI does not necessary signal that the intermediate FDI investor is just a pure holding structure, with no economic impact on the resident economy or any autonomy of decision. In fact, a considerable part of UK FDI abroad which is US-controlled also simply mirrors the fact that several large UK companies with sizeable foreign FDI operations were acquired by US companies over the past decades. Another interesting case among EU countries is Austria: while not often considered among FDI pass-through centres within the EU, our dataset shows that only less than 60% of Austrian FDI into other EU countries is domestically controlled, while around a quarter is controlled by companies from outside the EU, with a strong role by Russian companies as ultimate controlling parents. These results from Austria are in line with their official FDI data, sowing that a non-negligible part of their overall FDI assets (around 15%) are invested abroad by resident special purpose entities.[17] Our approach can be used to enhance this information by providing the geography of the ultimate controlling parent behind these pass-through funds.

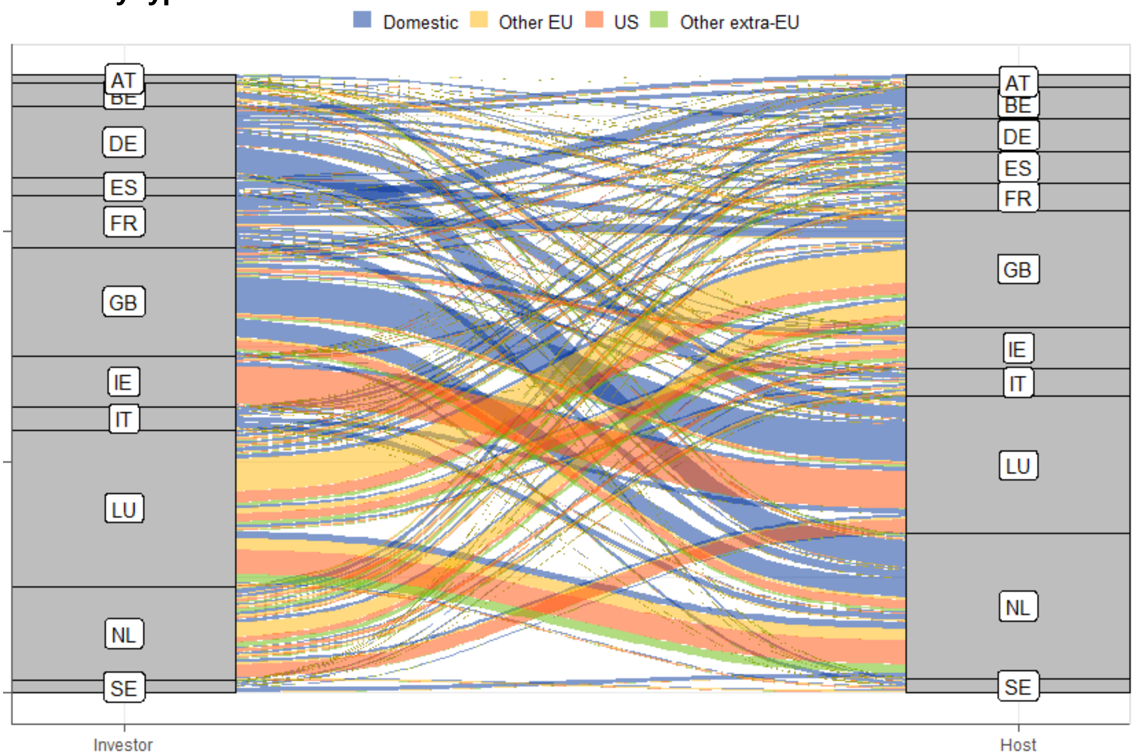
Extending the view to the bilateral intra-EU FDI network, the suggested enhanced presentation provides some additional insights on ultimate control behind bilateral

[17] According to OECD data for 2018: https://stats.oecd.org/index.aspx?DataSetCode=FDI_FLOW_PARTNER#

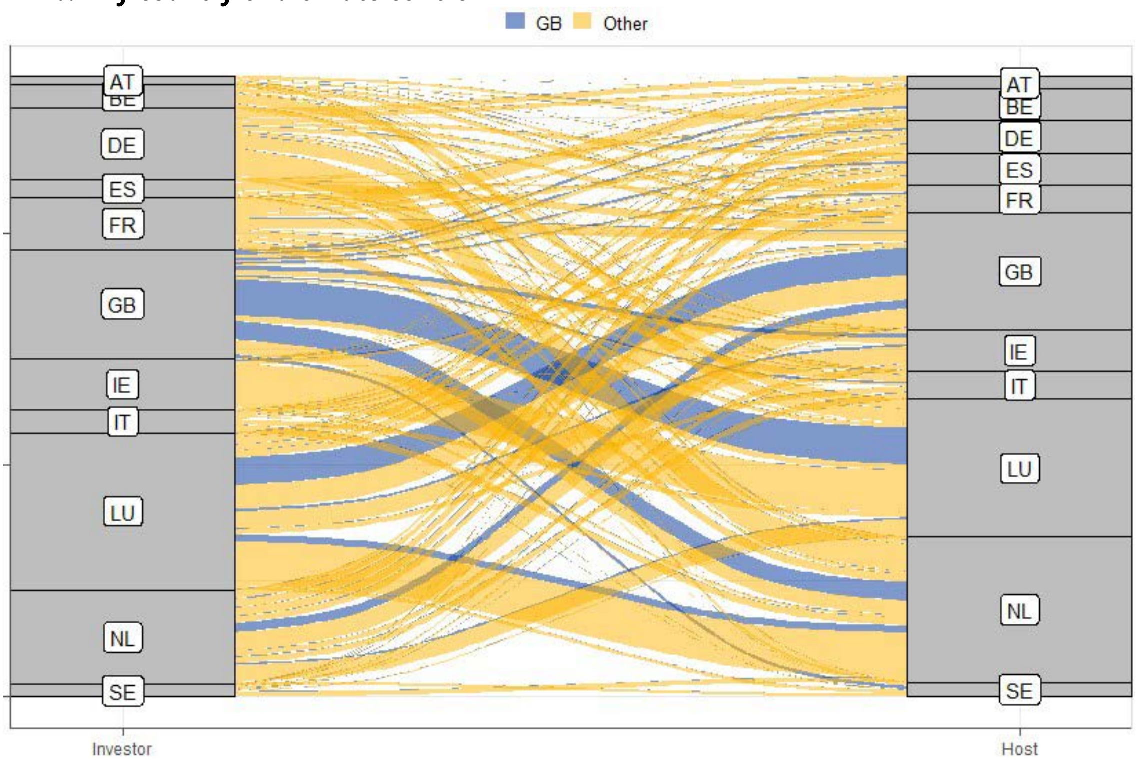
FDI linkages and helps us understanding what is behind large bilateral position between EU countries. It is clear how the largest EU economies, even though their FDI assets in other EU countries are mostly controlled by domestic firms, are still contributing to overall pass-through of FDI funds as they are mostly directing their FDI activity to the largest EU FDI hubs (see Chart 5a). A considerable part of British, German and Italian (domestically-controlled) FDI is directed towards the Netherlands and Luxembourg, most of which will be then re-invested in third countries (both within and outside the EU) or possibly back into the original investing country (round-tripping). The importance of intermediate corporate holding structures within the EU emerges by focusing on the bilateral intra-EU links ultimately controlled by a single EU country (see Chart 5b for the UK - labelled as "GB"). It is evident how UK companies, ultimately controlling around two thirds of UK intra-EU FDI, direct the majority of their direct FDI assets in subsidiaries resident in Luxembourg and the Netherlands (see the large blue links between the UK as investor and Luxembourg and the Netherlands as hosts). However, our representation allows us to also see which part of Luxembourgish and Dutch investment into the EU is ultimately controlled by UK firms and where it is invested to. It is clear how several UK companies have set-up some rather complex corporate structures within the EU with an initial layer in Luxembourg or the Netherlands and then a second layer back in the UK, as shown by the large UK-controlled FDI assets by Luxembourg and the Netherlands in the UK.

Chart 5: Intra-EU FDI Network, enhanced breakdown
2018 data

a. By type of ultimate control



b. By country of ultimate control



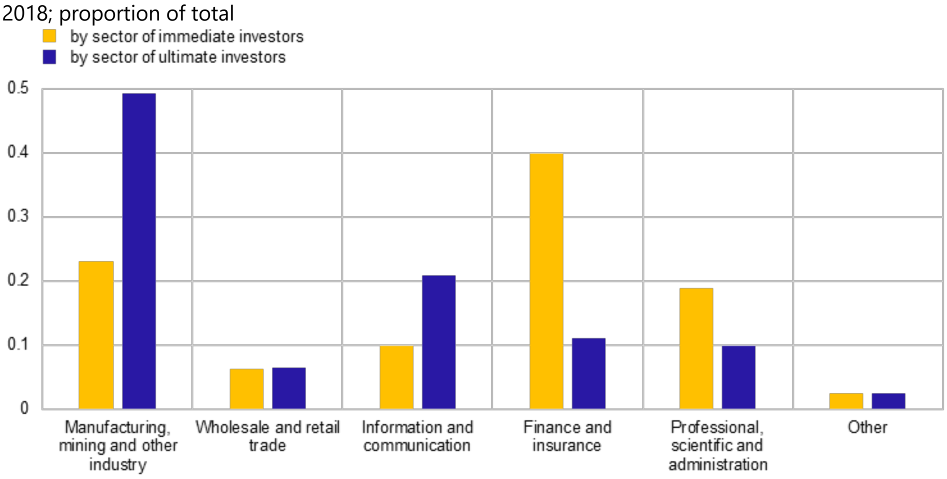
Source: Authors' calculations based on Orbis data.

Note: Only EU countries representing at least 1% of intra-EU FDI as immediate investors in our dataset are shown. The size of the grey boxes (nodes) on the Y-axes represents the country's proportion of intra-EU FDI as immediate investor and immediate host. The size of the links shows the proportion of bilateral FDI linkages with respect to the intra-EU FDI. The colouring of the links represents enhanced information on the ultimate controlling parent behind otherwise standard bilateral FDI links.

Some additional evidence of the importance of pass-through for FDI within the EU can be seen by the sectoral classification of EU FDI investors (see Chart 6). Traditional FDI datasets, based on the immediate investor-host concepts, show a disproportionate share of investment abroad coming from economic sectors associated with the activity of holding companies and other special purpose entities. This phenomenon is visible in our dataset where immediate FDI investors from finance and insurance NACE sectors represent almost 40% of intra-EU FDI. These sectors are not traditionally linked to FDI activity. Our additional framework provides information on the sector of the ultimate corporate group behind the immediate FDI linkages and here we observe that the economic sectors traditionally associated with large multinationals, like manufacturing, mining and other industry as well as information and communication, account for around 70% of intra-EU FDI links. This additional sectoral view of FDI by sector of ultimate investing economy is thus very useful to disentangle the economic sectors ultimately behind FDI within the EU.

Chart 6: Most relevant economic sectors of intra-EU FDI investors

2018; proportion of total



Source: Authors' calculations based on Orbis data.

Note: Only Orbis linkages with information on the NACE code for both immediate and ultimate investors are used. Only individual FDI links larger than 1 million EUR are taken into account.

4. Conclusion

Traditional FDI data do not only reflect linkages from production and trade networks, but also multinationals' fiscal optimisation and financial engineering purposes.

When complex corporate structures exist, with the presence of several layers of intermediate holding companies, interpreting FDI data becomes challenging as positions from intermediate financial centres are inflated by their role as intermediate investors. As several FDI hubs appear as the largest FDI investors worldwide, traditional FDI datasets do not allow to disentangle which part of their investment activity is ultimately controlled by domestic companies and which part is instead ultimately controlled and funded by foreigners, thus providing evidence of FDI pass-through. This additional information is provided in the framework suggested in our paper, which suggests decomposing outward FDI by the residence of the ultimate controlling parent. Providing this additional dimension to standard FDI data helps putting in context the large role of financial centres as global FDI investors. When large share of FDI activity is generated by foreign-controlled corporate groups, the overall size of FDI assets does not (fully) reflect domestic-decision making and may react to different determinants.

Exploiting Orbis company-level data on corporate ownership structures, we break down each EU country's contribution to the intra-EU FDI network into a domestic and foreign ultimately controlled part. We showed that for a group of EU FDI hubs (Ireland, the Netherlands, Luxembourg, Malta, Hungary, Belgium, and Cyprus), foreign groups ultimately control most of the outward foreign investment activity. We also showed that more than a quarter of intra-EU FDI is ultimately controlled by non-EU corporations, with the US as the largest ultimate owner of intra-EU FDI – even exceeding all individual EU countries. We also provided additional evidence on the sectoral characterisation of intra-EU FDI, with a large share of FDI ultimately originating from manufacturing and ICT groups, which is being intermediated in the EU by holding companies and other special purpose entities.

As also highlighted by *Borga and Caliandro (2018)*, despite the relevance of pioneering studies and estimates of supplementary FDI breakdowns based on detailed corporate level microdata via Orbis, it would be optimal for additional breakdowns of FDI data between domestic and foreign controlled to be directly collected and published by the statistical authorities responsible for national FDI datasets. Our exercise thus wants to provide some initial, encouraging results on the level and amount of information which could be additionally obtained by researchers and users of FDI data if these estimates were to be made available for a large set of countries worldwide. The work of the statistical community for the next update of the international methodological manuals should provide an additional push in this direction.

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Who stands behind European FDI investors?

A novel characterisation of pass-through within the EU

11th Biennial IFC Conference

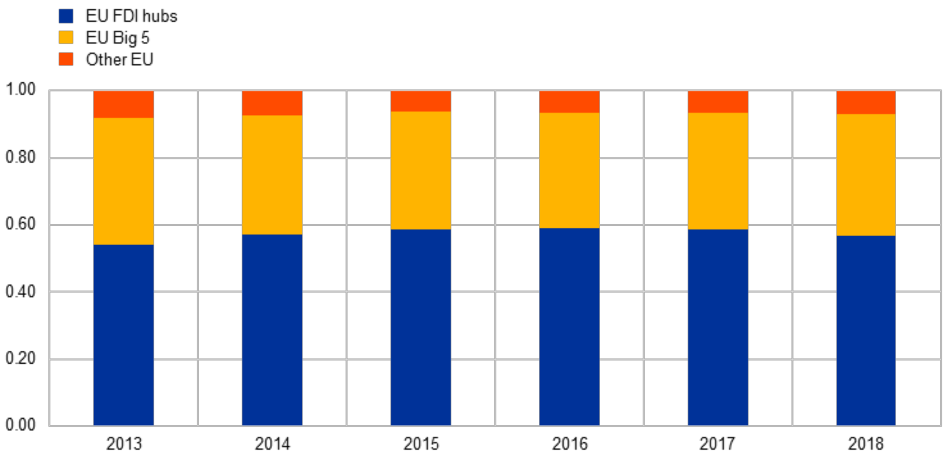
Basel, 25-26 August 2022

F. Pastoris, M. Schmitz, C. Gómez Llabrés
European Central Bank

1. Introduction

Starting point: oversized importance of EU financial centers as FDI investors

Chart 1: Main intra-EU investors in official FDI statistics
Proportion of overall intra-EU FDI assets



Source: Authors' calculations based on quarterly balance of payments data, ECB.
Note: "EU FDI hubs" include BE, CY, IE, LU, MT, NL, HU. "EU Big 5" includes GB, DE, FR, IT, ES. "Other EU" includes the remaining EU countries not singled-out in the chart. EU is intended as EU-28, thus including the current EU-27 composition plus GB. FDI includes both equity and debt assets.

Traditional FDI dataset → EU FDI hubs responsible for almost 60% of intra-EU FDI activity as immediate investors in recent years

Not possible to distinguish who is ultimately behind these large FDI investments

- Is it EU FDI hubs themselves?
- Is it other EU large countries?
- Is it other extra-EU advanced or emerging markets?

2. Methodology

Decomposing standard outward FDI by global ultimate owner (GUO)

$$FDI_{i,h} = FDI_{i,h}^{i} + FDI_{i,h}^{h} + \sum_{f \in F} FDI_{i,h}^{f} \qquad (1)$$

Standard bilateral FDI from country *i* to *country h* decomposed in:

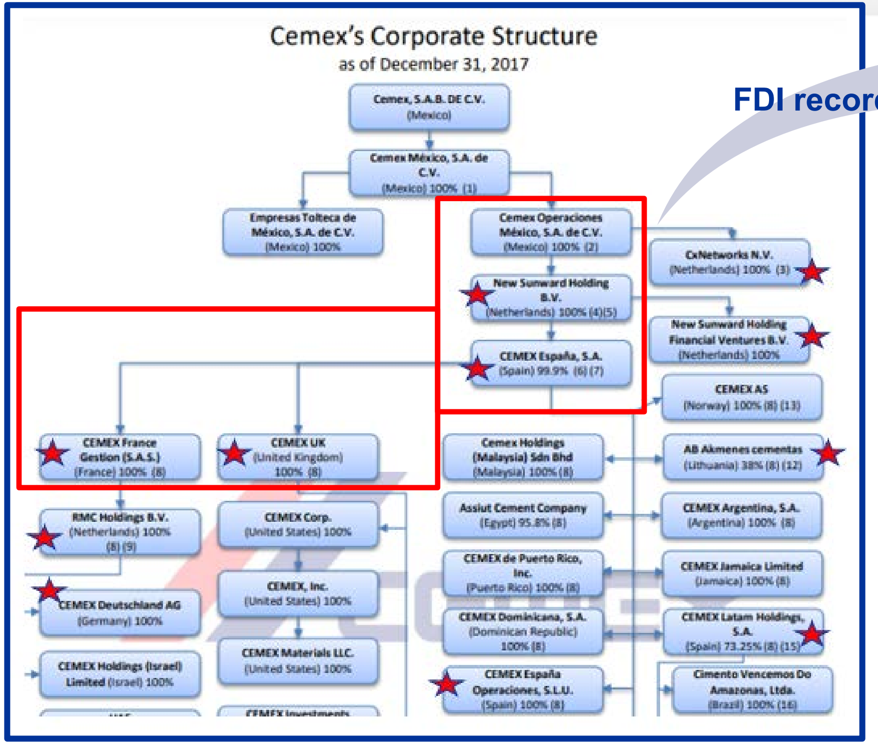
- a **domestic-controlled component**, $FDI_{i,h}^{i}$,
- a **host-country controlled** (or round-tripping) component, $FDI_{i,h}^{h}$
- a **foreign-controlled** (or third country) component,$\sum_{f \in F} FDI_{i,h}^{f}$.

Aggregating *country i's* investment over the set *W1* of host countries, *country i's* FDI position can then be decomposed into **domestic-controlled** and **foreign-controlled** (including round-tripping component).

$$FDI_{i,W1} = FDI_{i,W1}^{i} + FDI_{i,W1}^{F} \qquad (2)$$

2. Methodology

A (simplified) real example of a global MNEs corporate structure and extended FDI recording



FDI recording

Standard FDI data: INV.HOST bilateral info

MX.NL → MX.W1
NL.ES → NL.W1
ES.FR; ES.UK → ES.W1

Extended FDI data: (UCP)_INV.HOST triad info

(MX)_MX.NL → (DOM)_MX.W1
(MX)_NL.ES → (FOR)_NL.W1
(MX)_ES.FR; (MX)_ES.UK → (FOR)_ES.W1

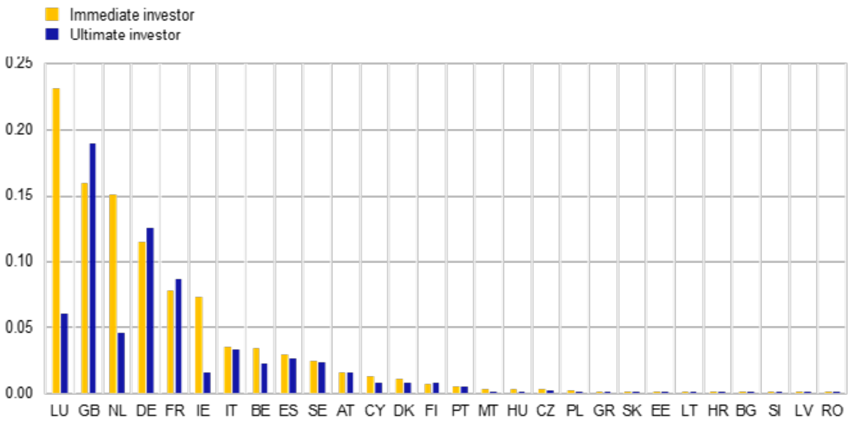
- Allows to separate countries' FDI positions in domestically and foreign controlled
- Fully consistent with standard FDI presentation
- Provide info on who ultimately controls FDI links worldwide

★ → Subsidiaries in the EU
UCP → Ultimate controlling parent

3. Main findings

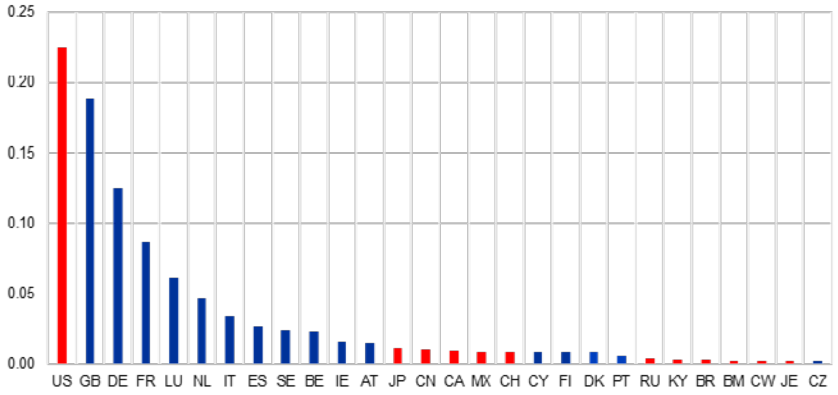
Stark discrepancy in EU countries' relevance as immediate vs ultimate owners of intra-EU FDI

Chart 2: EU countries' contribution to intra-EU FDI
Country's proportion of intra-EU FDI assets, 2018



Source: Authors' calculations based Orbis data.
Note: Yellow bars represent EU countries' contribution to intra-EU FDI as immediate source of FDI investment: they sum up to 1; blue bars represent EU countries' contribution to intra-EU FDI as ultimate sources of FDI investment: they do not sum-up to 1 as some of the intra-EU FDI is ultimately controlled by extra-EU countries.

Chart 3: Who is ultimately behind intra-EU FDI linkages?
Ultimate controlling parents of intra-EU FDI assets, proportion of overall intra-EU FDI, 2018



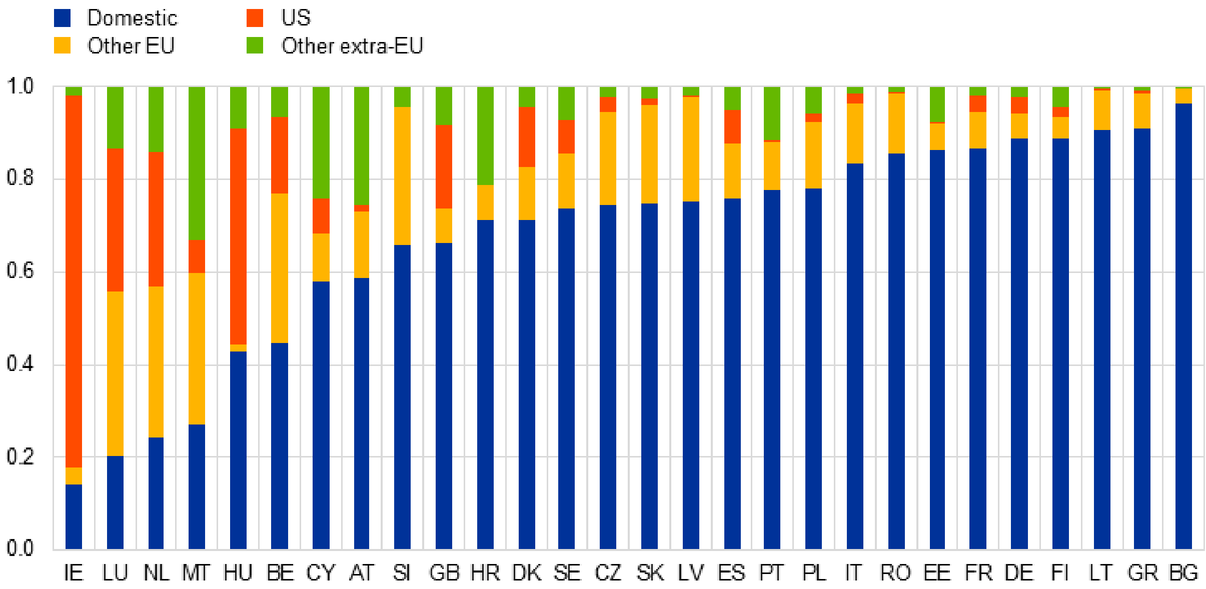
Source: Authors' calculations based on Orbis data.
Note: Countries highlighted in red are extra-EU countries. Only countries which contribute individually (as ultimate corporate owners) to at least 0.2% of intra-EU FDI are shown. Overall, the countries shown in the chart contribute, as ultimate corporate owners, to around 98% of intra-EU FDI.

3. Main findings

For EU FDI hubs foreign companies ultimately control >50% of outward FDI

Chart 4: Domestic vs foreign-controlled intra-EU FDI assets

Domestic vs foreign-controlled, proportion of country's intra-EU FDI, 2018



FDI hubs' FDI largely controlled by foreign groups

US groups particularly relevant for FDI by IE, HU, LU and NL

Other EU groups particularly relevant for FDI by LU, NL, MT, BE

Other extra-EU groups particularly relevant for FDI by MT, CY, AT

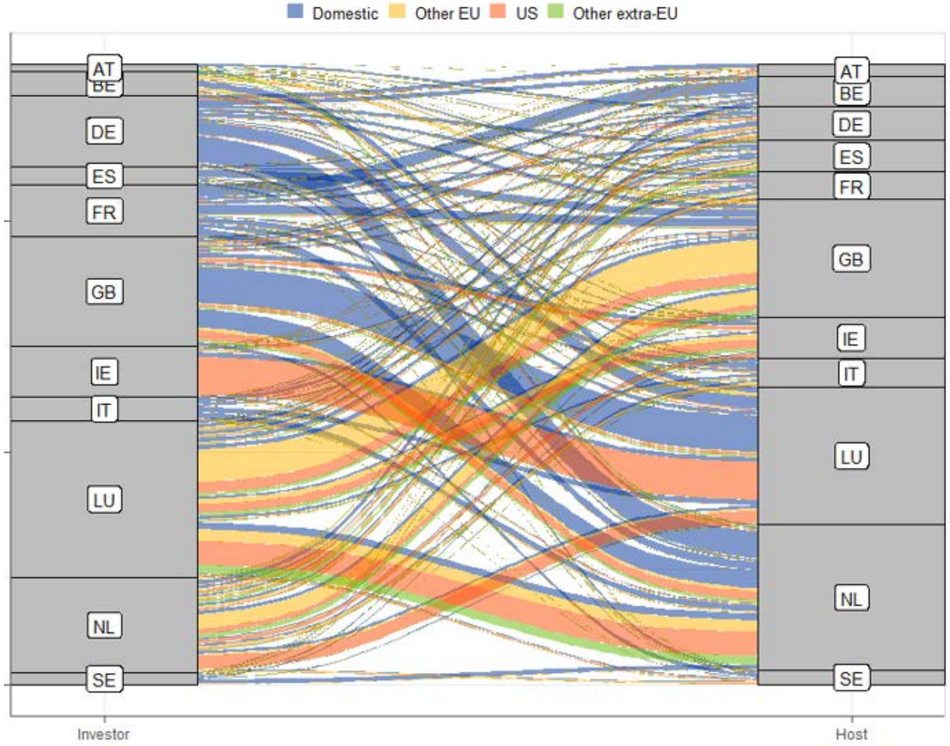
Source: Authors' calculations based on Orbis data.

Note: The blue part of the stacked bat represents the percentage of EU countries' intra-EU FDI which is controlled by domestic corporate groups; the yellow part shows its intra-EU investment ultimately attributable to corporate groups from other EU-countries; red bars for its intra-EU investment controlled by US corporate groups; green for its intra-EU investment controlled by corporate groups from outside the EU (and not US groups).

3. Main findings

Decomposing the intra-EU bilateral FDI Network by country of ultimate owner

Chart 5: Intra-EU FDI linkages, by type of ultimate owner
EUR billion, 2018



Considerable part of domestic-originated FDI from large EU countries is invested to EU FDI hubs:

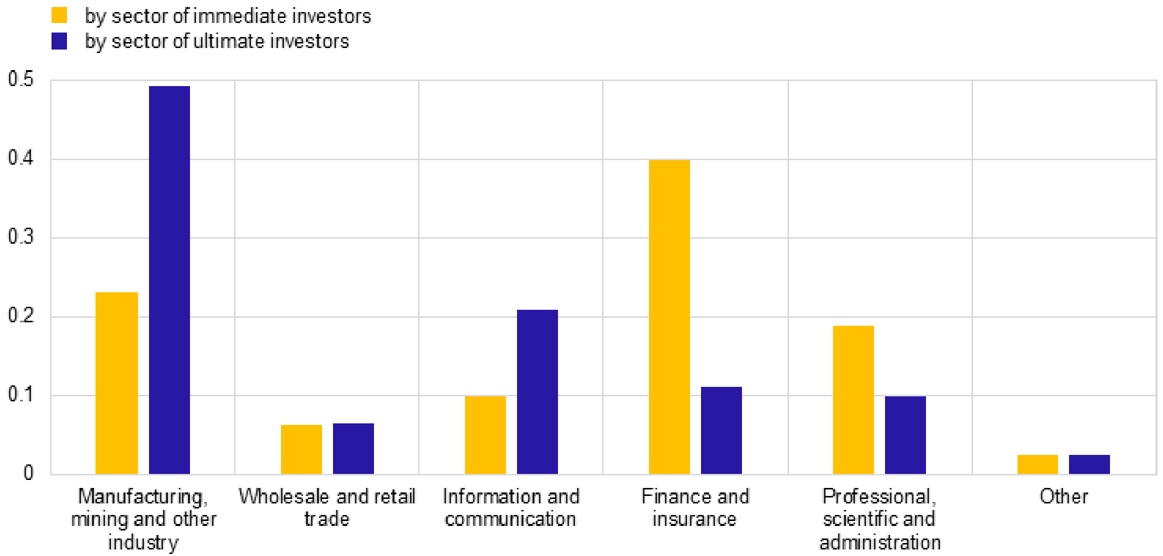
- Stays in the country
- Re-invested in other EU countries
- Round-tripping
- Re-invested outside the EU

Source: Authors' calculations based on Orbis data.
Note: Only EU countries representing at least 1% of intra-EU FDI as immediate investors in our dataset are shown. The size of the grey boxes (nodes) on the Y-axes represents the country's proportion of intra-EU FDI as immediate investor and immediate host. The size of the links shows the proportion of bilateral FDI linkages with respect to the intra-EU FDI. The colouring of the links represents enhanced information on the ultimate controlling parent behind otherwise standard bilateral FDI links.

3. Main findings

Stark discrepancy in sectoral relevance as immediate vs ultimate owner of intra-EU FDI

Chart 6: Most relevant economic sectors of intra-EU FDI investors
Proportion of total, 2018



FDI by **sector** of ultimate investors provides additional insights on sectors behind FDI

Finance and insurance and *Professional, scientific and administration* see a reduced role (SPEs, holding/head office)

Manufacturing, mining and other industry and *ICT* see an increased role

Source: Authors' calculations based on Orbis data.
Note: Only Orbis linkages with information on the NACE code for both immediate and ultimate investors are used. Only individual FDI links larger than 1 million EUR are taken into account.

4. Conclusions

Main takeaways

- Providing an additional dimension to standard FDI data helps putting in context the **large role of financial centers** as global FDI investors
- If a large share of FDI activity is generated by **foreign-controlled corporate groups**, the overall size of FDI assets reflects domestic-decision making only to a limited extent
- Information on the **ultimate owners** of resident FDI investors could be rather easily available to FDI compilers and can thus be added as a **supplementary dimension to standard FDI datasets**
- A **sectoral breakdown** of the ultimate owners behind intermediate FDI linkages improves the understanding of the **global network of FDI linkages by industry**