Office for National Statistics

Compendium

Understanding multinational enterprises: insights from the International Business Unit and foreign direct investment statistics

The activity of the International Business Unit in Office for National Statistics and the role of foreign direct investment companies in the UK.

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1 . Challenges of measuring globalised businesses in National Statistics

Globalisation has created new opportunities and competitive challenges for multi-national enterprises (MNE), for instance, driving producers to seek more efficient ways to manufacture their products. However, in more recent years, recording the rapidly changing globalised production arrangements in National Statistics has become very difficult in terms of data collection, production and analysis.

This has become even more challenging with the requirement to adopt the concept of economic ownership (as opposed to legal ownership) within the System of National Accounts and balance of payments manual. This has especially affected the measurement of cross-border flows of goods and services.

An example of the impact that a large business restructuring and the adoption of economic ownership can have on how economic activity is recorded is the Republic of Ireland's Central Statistics Office (CSO), who published an annual real GDP growth figure of 26.3% in 2015. This striking figure can be largely attributed to a number of large multinational corporations who relocated their economic activities to Ireland, specifically their underlying intellectual property. The principle of economic ownership says that sales that are generated from the use of intellectual property now contribute to Irish GDP rather than to other countries' GDP, inflating the figure of real activity in Ireland.

The International Business Unit

To try to address such challenges, Office for National Statistics (ONS) has set up a new team (initially as a pilot) called the International Business Unit (IBU). The IBU is working closely with a small group of large MNE groups to ensure that ONS is appropriately capturing the impact of globalisation through the collection of data from our business surveys and administrative data. A multi-skilled team including a qualified accountant, national accounts and surveys expert and account managers compare all sources of available data for each MNE. This includes administrative, survey data, annual reports and financial statements to identify and resolve data discrepancies brought about through globalisation.

However, these data sources only provide part of the picture in terms of understanding the global operations of the MNEs and so this is supplemented with having well-informed and detailed conversations with representatives at the businesses. Each account manager takes responsibility for a number of MNEs, building close working relationships with the respondents. This model proposes that regular contact will be maintained by visiting the businesses on a face-to-face basis at least once a year. Such businesses will be closely monitored, allowing account managers to become experts in those groups and specific industries. Some industries have operational characteristics in common regarding how they structure themselves, and therefore it is beneficial to develop industry-specific expertise.

Working closely with these MNEs provides us with a much deeper and richer understanding of the nature of their international transactions and how these should be treated for National Accounts and Balance of Payments. For example, IBU is collecting additional information to understand the complete picture of an MNE's global operations, including mapping all the flow of goods and services between the UK and other countries. This includes tracking both the physical movements and economic ownership of these goods and services throughout the global value chain and ultimately capturing the true value added to the UK economy.

IBU is still very much in its infancy and up until this point has been run as a pilot exercise. The long-term goal for the unit is to take responsibility for data collection and validation, relationship management and consistency checking for a number of carefully defined and prioritised MNEs. Ideally, these will be the MNEs that have the greatest impact on important outputs such as gross domestic product (GDP) and Balance of Payments. ONS is drawing on the experiences of other statistical institutes who have already established similar "Large Cases Units", such as in Ireland's CSO and the Netherlands' Central Bureau of Statistics (CBS). It is important to note here, that the UK economy is very different to both those countries mentioned and so while we can learn from them, we have to adapt the IBU to what best suits the UK.

What are the main aims of the IBU?

In summary, the aims of IBU are:

- to thoroughly understand the issues involved with the restructuring of MNEs, particularly where there is the potential for a notable impact on UK economic statistics
- to gain a better understanding of the scale and extent of globalisation issues, such as contract manufacturing and cross-border use of intellectual property, and the impact that has on important data collected by ONS
- to ensure that there is consistency and coherency across all the survey and administrative data collected for every MNE in scope
- to take proactive action to understand future changes in legal regulations (for example, tax and accountancy) that are likely to have an impact on data collected, ensuring that ONS adapts accordingly
- to ensure that ONS asks the appropriate questions of the MNEs, tailored to their individual business model and to reduce the questionnaire burden placed on them.

The benefits of an IBU for ONS and external users

The main benefit is that a multi-skilled account management team will ensure the collection of more timely and accurate data from the most important MNEs at the very beginning of the economic statistical production process. This will enable a prompt reaction to data changes and the resolution of potential anomalies before they are processed by any of the statistical domains. Comparisons could be made analysing all data received from different surveys and potential issues addressed at the first receipt of data.

Another important benefit of such a unit is that a closer working relationship with the MNEs will encourage a more proactive approach by the businesses to inform ONS of potential and upcoming business structure or data changes. This will allow ONS to better understand and prepare for any impact which may result. It is important to note that changes to one MNE can affect a number of ONS economic outputs.

This team will have the appropriate skills and capability present to fully understand these global MNE groups, their accounts and the underlying global activities in order to ensure that we are capturing the correct statistical data. Some of the globalisation and digitalisation models that we are aiming to identify and treat include:

- contract manufacturing
- toll processing
- transfer pricing
- factory-less goods production (FGP)
- merchanting of goods and services
- foreign direct investment (FDI) and related income flows
- internet-related activity
- stocks and flows of intellectual property products
- special purpose entities (SPEs)

Annex 1 provides further explanations of each of these concepts and how these create measurement challenges for national statistics.

This is very complex work as IBU have identified MNEs that are involved in all such globalisation models. For example, one MNE confirmed that they have many different ownership models in place, representing hundreds of component parts in the production process.

What progress has been made?

A small IBU team (six staff) has been up and running for 18 months. We have been learning and increasing our understanding of how and why large MNEs structure as they do, and how this has an impact on the data collected, analysis and dissemination to national accounts.

The strong relationships that we are building with our most important MNE respondents is proving to be very valuable in terms of supporting many ONS transformational projects and developments across ONS.

Important work that IBU has supported

We worked with the International Trade teams to provide guidance regarding the different global production scenarios in place and how they impact on the import and export of goods and services and their contributions to some of the trade asymmetries.

We improved the quality of the sample frame and data collated for the FDI Survey by ensuring that the correct legal ownership structure is in place for the largest MNE groups. This included collating information on minority and associate shareholdings.

We provided advice and guidance regarding the potential impact of the changes to the International Financial Reporting Standards (IFRS) 15 and 16 by asking businesses what impact this will have on data collected and suggested methods to account for this.

One of the areas where we have made a great deal of progress is applying practical treatment to collating data on an economic ownership basis rather than legal ownership. A clear distinction between the physical movement of goods and the transfer of ownership of goods is needed. This has implications for the way ONS measures value-added and productivity, particularly surrounding the following areas.

Economic ownership of goods and services within a MNE

IBU have identified cases where the entity selling the goods is not the economic owner of the goods. This has obvious implications for data collection and measurement.

Capturing the import and export of goods

National accounts captures processing carried out across borders based on the transfer of ownership principle. Thus, the physical movement of goods across borders may not reflect actual import or export of goods.

Business activities and supply arrangements with third parties

MNEs engage in several supply arrangements, mostly to minimise operating costs. For example, firms engaged in contract or factory-less manufacturing could be classified as wholesale traders or as part of other service industries, rather than manufacturing. This has obvious implications for measuring the “correct” industrial composition of an economy.

Economic ownership of IP

Part of the production of MNEs and of their capital stock should be assigned to the country of residence of the subsidiary which holds the intellectual property (IP), even if the actual assembling of the product takes place in its entirety in a foreign country. However, understanding the economic ownership of IP is not always straightforward as the producer of the IP may be different from the economic owner.

Measurement of employment

Economic ownership creates issues in terms of the measurement of employment as value added can be credited to an entity even if it does not carry out any actual production. Therefore, it is possible to record high value added with very few or without any employed personnel. It is also possible to record high employment figures but low value added (toll processors).

Activities of foreign branches in the UK

Some MNEs provide goods and services across borders through foreign branches. Therefore, understanding the economic ownership of goods and services between legal entities and branches is important for data collection. This also happens in reverse where we have foreign branches of UK entities resident abroad.

Initial IBU results show that the majority of MNEs are engaged in a variety of global operational models and as a result a more tailored data collection model would ensure the adoption of better measurement of these activities. IBU is working collaboratively with many national accounts experts across the different statistical areas within ONS to map existing survey data requirements to business-friendly variables. We are taking into consideration the MNE’s global model; IBU tailors the questions and data variables to suit each MNE.

IBU are also part of the ONS's Census and Data Collection Transformation Programme (CDCTP), exploring potential options for offering a tailored approach (bespoke) collection service for the largest businesses. This also includes testing the feasibility of collecting direct data feeds from the MNE’s internal financial accounts systems. First results from testing a tailored approach with a small number of MNEs are very promising.

IBU requires international collaboration

Using existing European regulations, IBU has been collaborating and sharing some limited MNE microdata with counterpart European statistical institutes. The UK is involved with two European initiatives; Early Warning System (EWS), which is designed to take a proactive approach informing other NSIs of potential large business restructures; and the GNI MNE Pilot work, which is sharing microdata for 25 of Europe’s most important MNEs to ensure consistency in data treatment.

Challenges faced

The IBU has had good success during a short period, however, it has also faced a number of challenges.

Complexity

The complexity associated with understanding MNEs operational models, including mapping out all the flows of goods and services by their economic ownership, should not be underestimated. There are often hundreds (in some cases thousands) of legal entities operating within just one MNE and IBU needs to understand the relationships between them all. IBU staff are required to understand all survey data that are collected and all national accounts and balance of payments data requirements.

Careful implementation of changes

As each MNE delivers a set of new challenges to address, often with no precedent in terms of practical treatment, it can be challenging to ensure the correct implementation. Treatment is often achieved on a case-by-case basis. It is part of IBU's responsibility to ensure consistent treatment of changes across the different statistical domains. In some cases, these large businesses dominate the industry in question and therefore this needs careful implementation given potential disclosure issues.

Legal barriers and data sharing

Unlike the collection of data, which is governed by the Statistics of Trade Act 1947, there is currently no legal requirement for these companies to share any associated information such as their global group with ONS. The IBU account manager is required to convince the company by showing the long-term benefits of working closely with IBU (mainly reducing burden and having a tailored approach to each MNE). It is important to recognise that building relationships will take time and again is a long-term aim.

The right engagement with MNEs

Ensuring that IBU engages with the correct people at the MNE has also been challenging. IBU has met a complete mixture of skills and level of staff ranging from Directors, tax directors, group accountants, junior accountants, financial analysts and in some cases spoken to many different staff representing different segments of the MNE.

2 . The International Business Unit can help deepen our understanding of multi-national enterprises for foreign direct investment statistics

Foreign direct investment (FDI) measures the cross-border investments of companies based on control relationships. FDI occurs when a parent company acquires more than 10% of the voting power (ordinary shares) of a business in a different country. Outward FDI refers to UK-owned companies abroad while inward FDI refers to foreign-owned companies in the UK. FDI statistics typically capture the value of the stock of FDI, the earnings on that stock and flows between parent companies and their affiliates. Therefore, insights from the International Business Unit (IBU) that increase our understanding of how some of the larger multi-national organisations are structured should help enhance these statistics further, in addition to the IBU working with businesses to develop data collection.

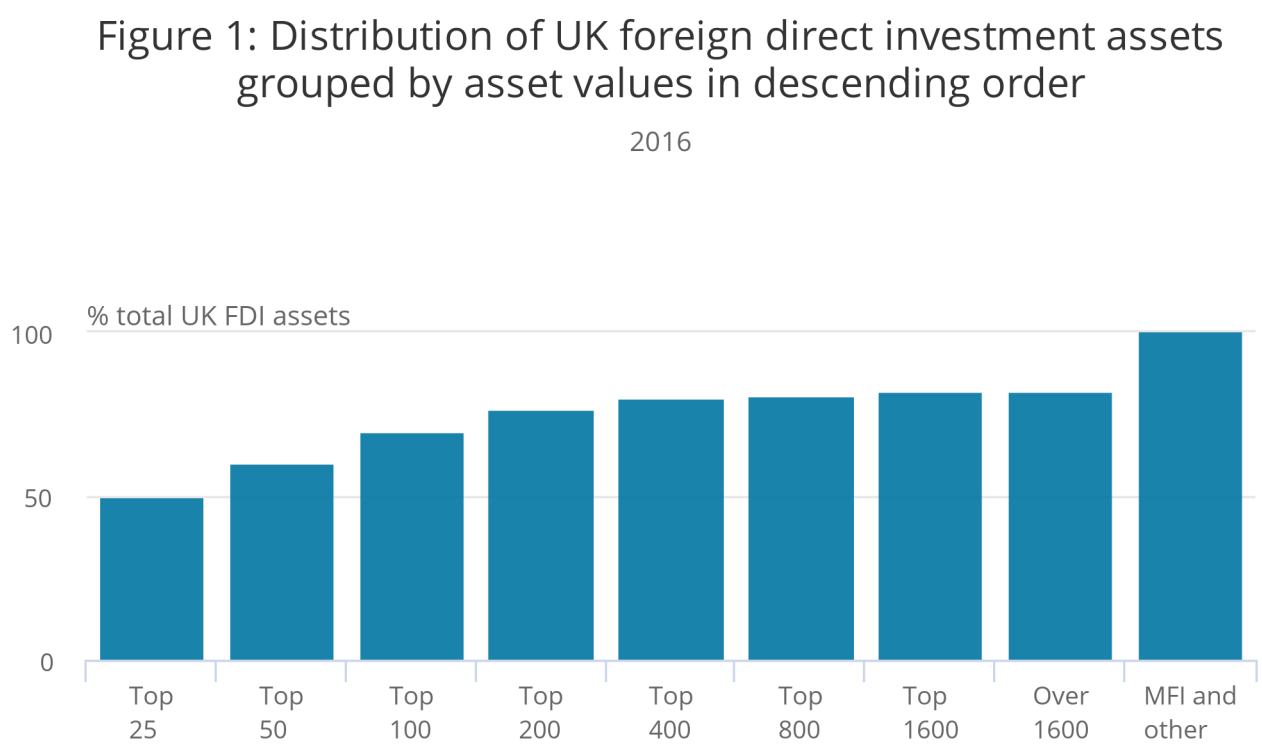
Our foreign direct investment involving UK companies bulletin is the main source of statistics in this area. We have also published other analytical articles that provide more detail on UK FDI trends. This includes assessing the impact that trends in FDI earnings have had on the UK's current account balance, the effects of sterling exchange rate movements on FDI values and experimental statistics from micro-data linking FDI with other Office for National Statistics (ONS) micro-data. It is these experimental statistics, first published in July 2018, upon which most of this section is based. This highlights the extent to which corporate structures can affect FDI statistics in addition to comparing the characteristics of companies with FDI links.

The largest 25 FDI companies accounted for half of the UK's outward stock of FDI and over one-third of the inward stock in 2016

The importance of the largest companies in UK FDI can be seen by looking at the distribution of these investments by company size. This shows that the 25 UK companies with the highest value assets from direct investments held abroad accounted for half of the total value of FDI assets in 2016 (Figure 1). This then increased by 10 percentage points to 60% when the next 25 largest outward FDI companies are added. The impact of adding each group continues to diminish despite the number of businesses within the later groups increasing. All outward FDI businesses accounted for 82% of total UK FDI assets in 2016, with the rest held by monetary financial institutions (MFIs) and other categories of investment that are counted separately.

Figure 1: Distribution of UK foreign direct investment assets grouped by asset values in descending order

2016



Source: Office for National Statistics – Foreign Direct Investment Survey

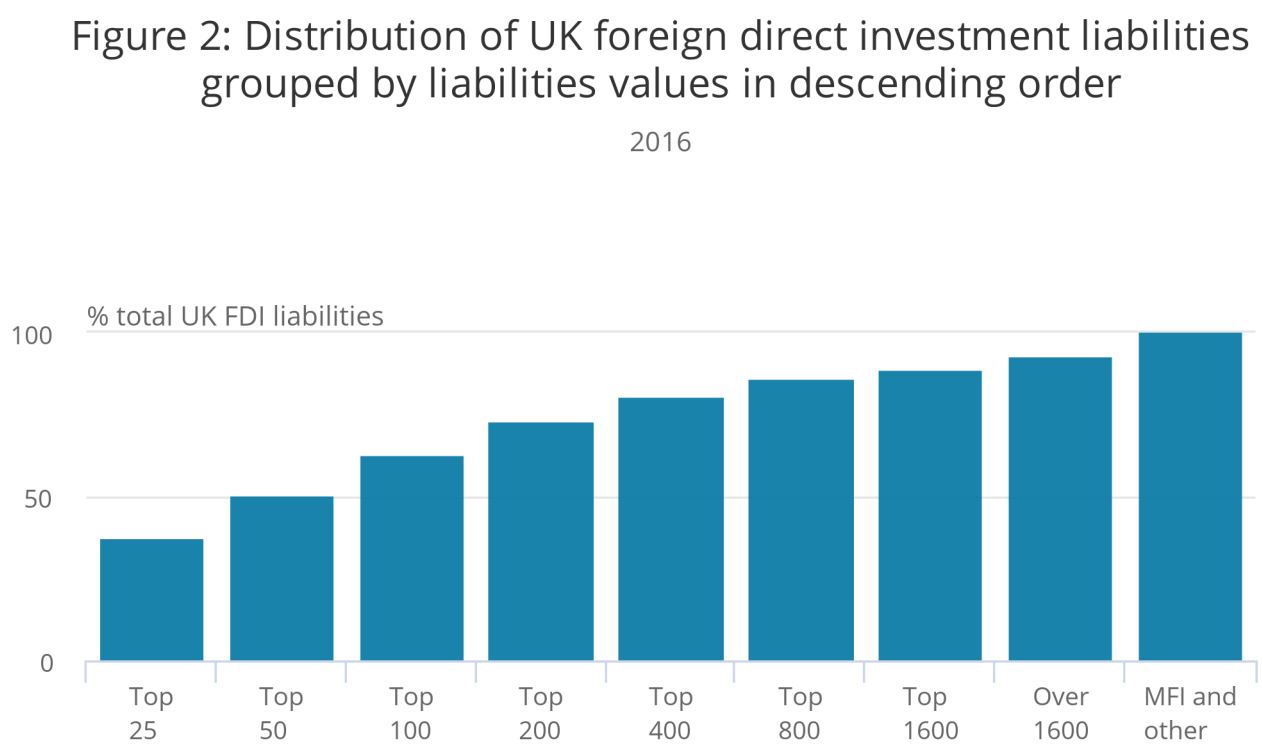
Notes:

1. These statistics were first published in Foreign direct investment, trends and analysis, January 2018 and have not been updated to reflect any subsequent revisions to our 2016 estimates.

A similar situation exists for UK liabilities – the stock of FDI in the UK controlled by non-UK companies – but the stock is less concentrated among the biggest UK companies. The largest 25 companies by value of inward investment accounted for over one-third (38%) of total UK liabilities in 2016 (Figure 2). This increased by 13 percentage points, to 51% when the next 25 largest companies are added. All inward FDI businesses accounted for 93% of total UK liabilities, with MFIs and other categories of investments comprising the remaining seven percentage points of UK liabilities.

Figure 2: Distribution of UK foreign direct investment liabilities grouped by liabilities values in descending order

2016



Source: Office for National Statistics – Foreign Direct Investment Survey

Notes:

1. These statistics were first published in Foreign direct investment, trends and analysis, January 2018 and have not been updated to reflect any subsequent revisions to our 2016 estimates.

The different distributions for outward and inward positions can be partly explained by the structure of global multi-national companies. However, this also underlines the importance of the IBU in working with the largest UK companies to understand their business structures and international activity better. This in turn should help to develop the information that we receive from them and the FDI population from which we select samples to produce our FDI statistics.

Multi-national business structures can affect the geographical composition of UK FDI

International guidelines on compiling FDI statistics require these to be presented using the country of the immediate parent company. Thus, geographical compositions reflect immediate relationships between investing parties rather than the residence of the ultimate parent or final destination of the investment. Multi-nationals often have complex corporate structures, where a parent company controls a large network of inter-linked affiliates and branches across the globe. Since published statistics report the immediate partner country, geographical compositions can be distorted in cases where a parent company invests through one or more countries before the investment reaches its final destination. While affecting geographical compositions, aggregate FDI statistics are unaffected by whether they are presented on an immediate or an ultimate basis.

We have investigated these corporate structures further by linking our FDI results with information on the country of the ultimate parent company on the Inter-Departmental Business Register (IDBR). The IDBR is a comprehensive list of UK businesses used by government for statistical purposes. It provides the main sampling frame for surveys of businesses carried out by Office for National Statistics (ONS) and other government departments. It is also an important data source for analyses of business activities.

Moving from the immediate to the ultimate parent increases the value of FDI held in the UK by US companies but lowers it considerably on that from Luxembourg, the Netherlands and Jersey

The United States was the country that directly held the greatest stock of FDI in the UK. This was valued at £308.1 billion in 2016, and was closely followed by FDI from the Netherlands (£212.1 billion) and Luxembourg (£114.8 billion). These are the only countries holding more than £100 billion of direct investment in the UK using the immediate parent company. Figure 3 shows the top 20 countries by value of the inward FDI position based on the country of the immediate parent company and the ultimate parent company.

Figure 3: UK foreign direct investment (FDI) by country of the immediate and ultimate parent company, top 20 by inward FDI position, 2016

The US remains the country with the greatest value of inward FDI in the UK in 2016 on an ultimate basis. The position increased by £105.8 billion to £413.9 billion, making FDI from the US equivalent to over one-third of the UK's total inward investment position in 2016, and up from being around one-quarter of the total position on an immediate basis. Belgium becomes the country with the second-largest value of inward FDI stock in the UK, up from being the twelfth-largest on an immediate basis. Both France and Germany had similar immediate positions in the UK in 2016, of £59.9 billion and £59.8 billion respectively, ranking them fifth and sixth. The value of these respective FDI positions increased on an ultimate basis, where that from Germany rose by £15.9 billion to become the fourth-largest value and the French inward position increased by £12.5 billion to remain the fifth-highest country value.

There are 10 countries in the top 20 that had a lower ultimate position than immediate in 2016. Of these, by far the largest changes are for the Netherlands, Luxembourg and Jersey. The value of FDI from the Netherlands more than halves when moving from the immediate to the ultimate parent company, falling by £124.1 billion to £88.0 billion. Despite this, the Netherlands remains one of the largest inward investors in the UK, with the third-largest ultimate position. The inward FDI position from Luxembourg decreased by almost two-thirds to £43.2 billion, £71.6 billion lower. The ranking of Jersey falls considerably, going from the fourth-largest county on an immediate basis, to the thirteenth on an ultimate basis. The biggest change in the ranking of a country is for Singapore, moving from fourteenth to thirty-first.

These lower values of FDI on an ultimate compared with immediate position – and from the Netherlands, Luxembourg and Jersey in particular – reflects the role of corporate structures and the amount of FDI that comes to the UK through these countries from elsewhere. There are many reasons why companies may choose to channel their investments through other countries. Taxation is one of the reasons, although legal protection, clustering of similar businesses and corporate functions are also important.

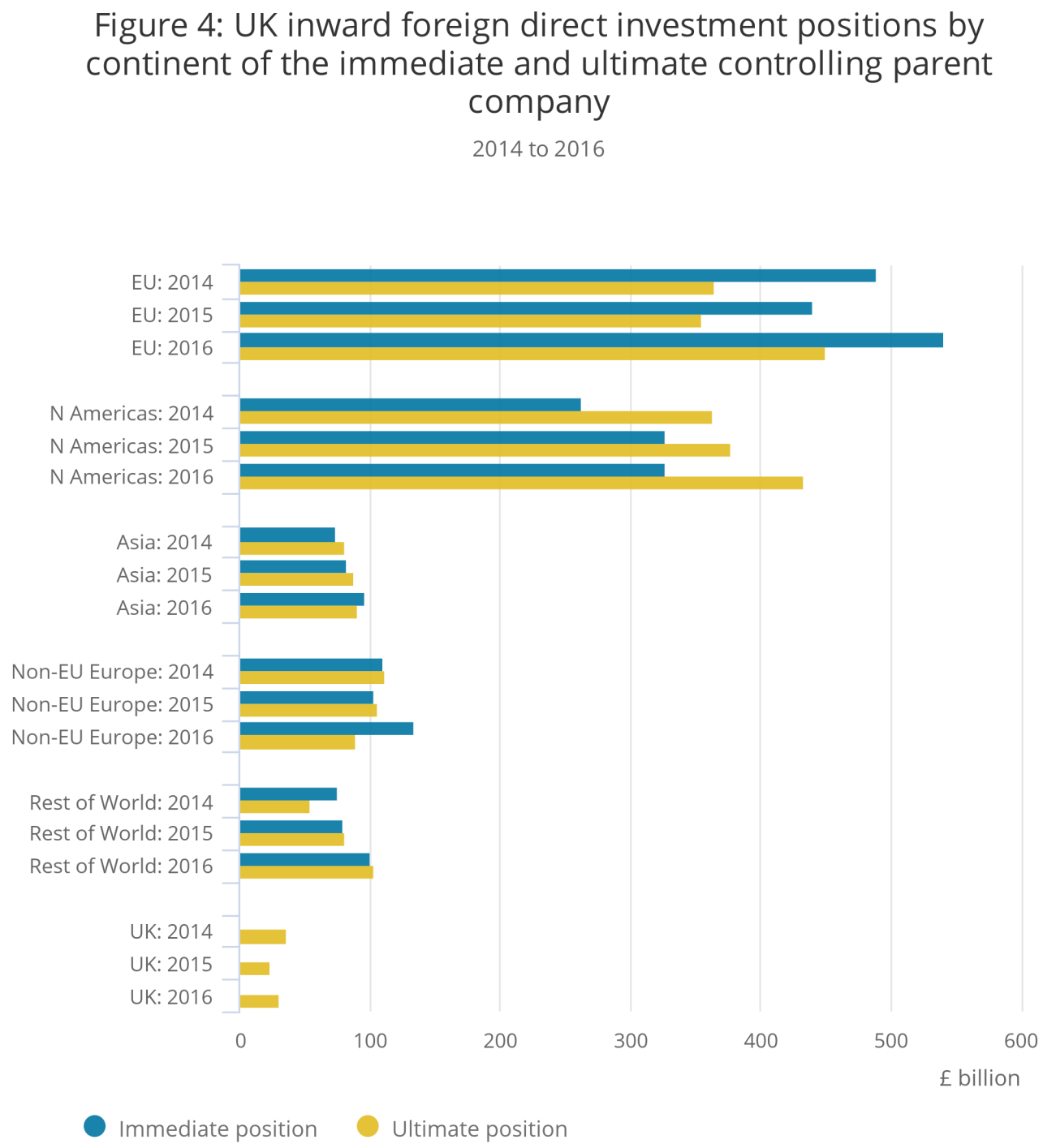
There is also a role for direct investments in the UK with a foreign immediate parent but also a UK ultimate controlling parent. This is also known as "round-tripping", where UK companies can use the wider corporate functions through which to invest in the domestic economy. In 2016, UK companies held a stock of £30.7 billion in the UK with a foreign immediate parent; this was equivalent to 2.6% of the UK's inward FDI stock.

Values of the inward stock of FDI in the UK from the North Americas and EU become very similar when linking to the country of the ultimate controlling parent.

FDI in the UK can also be presented by continent on both an immediate and ultimate controlling parent basis. The majority of FDI held in the UK between 2014 and 2016 was controlled by companies in the EU. UK companies with an immediate parent in the EU accounted for £541.6 billion (or 45.2% of the total inward FDI stock). This decreased by £90.8 billion to £450.8 billion (37.6%) using the country of the ultimate controlling parent. This pattern for the EU is also repeated in every year presented in Figure 4, where the ultimate position held in the UK is lower than the immediate position.

Figure 4: UK inward foreign direct investment positions by continent of the immediate and ultimate controlling parent company

2014 to 2016



Source: Office for National Statistics – Foreign Direct Investment Survey

The North Americas was the only continental group where the stock of FDI in the UK was higher on an ultimate compared with immediate basis in every year since 2014. In 2016, FDI from the North Americas was £326.7 billion on an immediate basis (or 27.2% of the UK's inward FDI position). That value was the same as the one reported in 2015. However, allocating FDI to the country of the ultimate controlling parent saw the value increase by more in 2016 than in 2015; up by £107.3 billion to £434.0 billion in 2016 compared with an increase of £50.5 billion to £377.2 billion in 2015. Reporting UK inward FDI stocks on an ultimate basis saw the values for the EU and North Americas become very similar in 2016: £450.8 billion for the EU compared with £434.0 billion for the North Americas. This is much smaller than the £214.9 billion difference using the country of the immediate controlling parent.

Reporting FDI statistics on the ultimate rather than the immediate basis also has an impact on the other continental groups. The largest change among these was for FDI from non-EU Europe in 2016. This decreased by £44.5 billion using the ultimate controlling parent, further highlighting the role of non-EU European financial centres in corporate structures. There was also a slight fall (£5.4 billion) in 2016 in the ultimate position compared with the immediate for Asia. However, the ultimate position was higher than the immediate for both Asia and non-EU Europe in 2014 and 2015, perhaps signalling a shift in the control structures through a wider range of countries with foreign-owned direct investments in the UK.

Companies with FDI links display different characteristics to those without such links on average

The current FDI survey only collects information from sampled companies to enable the estimation of FDI statistics. While this does include the industry and country within which this investment takes place or originates, it cannot describe the economic activity of these enterprises. However, such insights become possible by taking the FDI to IDBR linked data set and further linking this to results from the Annual Business Survey (ABS [1]). These statistics can also benefit from the IBU through any changes that are made to the ABS, IDBR and the FDI survey.

Companies with FDI links in both directions were the most productive on average in 2016

It is possible to distinguish between the different types of FDI links. We can identify companies that receive FDI from overseas, however some of those companies will also be outward direct investors as well. To this, we can also add the UK parent companies that only hold investments abroad. The proportion of UK businesses with any of these FDI links was 1.8% in 2016. Yet these businesses accounted for 29.4% of UK employment and approximate gross value added[2] (aGVA) of 40.1% of the total.

Combining output with employment produces a measure of productivity. This shows that companies with any FDI link were more productive on average than those businesses without such links. In 2016, they had £73,800 mean aGVA per worker compared with £45,900 (Table 1) for those without FDI links. However, there are also differences between the types of FDI link. Companies with both inward and outward FDI links were the most productive on average, with £87,300 aGVA per worker. Despite accounting for a lower amount of employment and aGVA, inward FDI businesses are more productive on average than outward direct investors; £81,400 aGVA per worker compared with £63,300 aGVA per worker. These results could be partly due to knowledge transfers from overseas parent companies to their UK affiliates making those businesses more productive, in addition to those productive UK companies being more attractive target companies for mergers and acquisitions.

Table 1: Productivity of UK companies based on form of foreign direct investment link, aGVA per employee, £ thousands, 2016

		Mean productivity of UK companies (aGVA per worker, £ thousands)
1) Firms with any FDI link		73.8
	of which:	
	only inward FDI link	81.4
	only outward FDI link	63.3
	both inward and outward FDI links	87.3
2) Firms with no FDI link		45.9

Source: Office for National Statistics

Notes

1. Productivity refers to approximate gross value added (aGVA) per worker. Back to table

Businesses that have FDI relationships are more likely to trade internationally in goods

The ABS also collects information on whether or not a UK business trades internationally, either through exports, imports or both. Businesses that invest abroad or that are in receipt of FDI are exposed to international investors, who may have either invested to set up a UK presence or acquired UK businesses to access local markets. The international focus of these businesses is also extended to trade, as many FDI-related businesses are part of multinationals' global value chains.

Analysing the trade in goods status of companies reveals that a higher proportion of companies with FDI links also engage in trade compared with firms without such links. In 2016, 18% of businesses with any FDI link were both an importer and an exporter of goods (Table 2). This is much higher than the 2% of businesses that trade internationally but do not have any FDI links. Separating importers and exporters reveals that UK companies are more likely to import than export. This also applies to those without any FDI links, where 7% of non-FDI businesses imported compared with 5% that exported in 2016. Yet the differences were still large compared with companies with FDI links, 29% of them exported and 24% imported. Furthermore, companies with both inward and outward links also had the greatest proportion of exporters or importers, followed by those companies with only inward FDI links.

Table 2: Trade in goods status of firms based on form of foreign direct investment link, percentage of UK total, 2016

		Exporter	Importer	Importer and exporter
1) Firms with any FDI link		24	29	18
of which:				
	only inward FDI link	23	29	16
	only outward FDI link	22	26	17
	both inward and outward FDI links	37	41	30
2) Firms without any FDI link		5	7	2

Source: Office for National Statistics

Notes

1. If one reporting unit from an enterprise group is an exporter, importer or both, then this status has been given to the whole enterprise group. Back to table

Notes for: The International Business Unit can help deepen our understanding of multi-national enterprises for foreign direct investment statistics

1. Further information on the ABS can be found in the ABS Quality and Methodology Information (QMI).

2. Approximate gross value added (aGVA) measures the value of goods and services produced and is closely linked to gross domestic product (GDP), although GDP includes taxes minus subsidies in production.

3 . We will continue the role of the International Business Unit in economic statistics and developing our foreign direct investment statistics

Office for National Statistics (ONS) has recognised the value and importance of the International Business Unit (IBU) and plans to continue the work of the IBU through defining the scope (including the number of multi-national enterprises (MNEs)), resources and responsibilities of the unit. In the meantime, the team are continuing to build relationships with important MNEs and improving the quality of survey data collated.

Foreign direct investment statistics (FDI) can be presented using the asset and liability or directional measurement principle. A new statistical bulletin for Foreign direct investment statistics involving UK companies (asset and liability): 2017 will be published on 11 April 2019. This bulletin will use the same tables as our directional bulletin, but present FDI statistics using the asset and liability principle, which is used in the balance of payments and Pink Book. Both measurement principles meet international standards on compiling FDI statistics and use the same survey inputs. The difference between FDI calculations on a directional and an asset and liability basis can be found in Foreign direct investment measurement principles explained. While the two measurement principles are different, estimates of net values (outward less inward, or assets less liabilities) are broadly comparable.

We are also planning to update our statistics on FDI by the country of the ultimate controlling parent company and on the characteristics of companies with FDI links by summer 2019.

4 . Annex 1: Globalisation and digitalisation concepts explained

Contract manufacturing

A contract manufacturer is a manufacturer (principal) that contracts with a firm for components or products. It is a form of outsourcing where a principal supplies raw materials or components to a processor (a toll processor) who carries out manufacturing services on the supplies. The processor is only carrying out a manufacturing service (mostly for a fee), while the economic ownership of the finished product remains with the principal who owns the raw materials, finished goods and intellectual property (IP).

A real example of a simple contract manufacturing case that IBU have researched can be described as follows:

The manufacturing principal is a UK entity. It owns all of the intellectual property relating to the goods, the raw materials and the final produced goods. A legal entity in Indonesia manufactures the goods under a contract with the UK entity. In this case, the raw materials (owned by UK) are physically sourced from France to Indonesia for manufacturing. The finished goods are sold across the world.

In this scenario, aspects of trade data will not be captured in current data sources. The finished goods do not cross the UK border, however the goods are sold by the UK entity to a global market so Office for National Statistics (ONS) will miss this customs export data. It may also have been picked up as an import if transferred from Indonesia to the UK but this will need to be excluded from trade data as there has been no change of economic ownership.

Toll processing

A toll processor manufactures a product on behalf of the manufacturing principal who owns all of the raw materials and the IP. In the National Accounts, the company that owns the materials, and IP of the goods and the output (manufacturing principal) is viewed as the manufacturer, while the other toll manufacturer is providing services as a contract manufacturer. Where this happens across international boundaries, it means activity undertaken outside a country can be counted towards its gross domestic product (GDP). Figure 5 provides a relatively simple example of a toll processing model.

Figure 5: Example of a simple toll processing model

Factory-less goods producer

A factory-less manufacturer only provides manufacturing IP. Parts of production (value added) can be assigned to the economic owner of the IP. Such models can be extremely difficult to identify given that they often have very small employment and could be classified to holding companies or be special purpose entities (SPEs).

Merchanting

Merchanting is usually referred to in the context of global wholesaling services or commodity trading where a trader resident in country A purchases goods in country B and sells the goods – without substantial transformation - to a third party in country C without the goods ever crossing the border of country A.

Merchanting can also be a global manufacturing arrangement in which a parent enterprise in country A arranges for goods to be delivered from a manufacturing affiliate in country B to an affiliate in country C without the goods passing through country A. The ownership of the goods is transferred from B to A and from A to C and the goods are not subject to any transformation while owned by the enterprise in country A.

The difference with the processing arrangements of contract manufacturing is that the principal does not own the material inputs and does not control the production process. The goods are not transformed during the period in which the merchant or principal owns the goods.

In national accounts, these arrangements can affect related economic measures because the goods involved do not cross the principal's national border.

Transfer pricing

When companies engage with their customers or suppliers ("third parties") it is assumed that each party is out to get the best deal possible for themselves and that the resulting prices set for the trade will reflect that fact. These are called "arm's length prices". However, when two companies are under common ownership, the best overall result for the multinational company to which they belong often includes minimising their tax liabilities. Under transfer pricing rules, companies are obliged to set "arm's length prices", meaning a "fair market" value for goods and services they trade within the group. This is believed to result in a just allocation of profit to the country where it was generated.

Multinational companies trading between two subsidiaries of the same group can choose to adjust "arm's length" transfer pricing rules by reducing the cost of products and services sold from higher tax regime countries to another company in a lower tax regime country and then increasing the costs of the same products sold on from the new country, which pockets the difference as reduced-tax profit.

There may be no way of determining the market price for some products transferred across international borders, such as the price of a part-finished component that will never be sold in that state to a customer or the cost of using a company's logo.

E-commerce businesses

Traditionally, multinational corporations have sought to penetrate foreign markets by setting up physical intermediaries within the targeted markets. The picture changes with the availability of e-commerce opportunities. Many multi-national enterprises (MNEs) now effect the greater part of their market research, advertising, marketing and sales through a website.

The anonymity of internet transactions means that internet activity is difficult to trace. Businesses are constantly changing their business models; it is quite easy lose the ability to classify and measure these businesses accurately.

Cross border use of intellectual property

One of the challenges that MNEs present for macroeconomic measurement is the issue of assigning economic ownership of Intellectual Property (IP) to the various fractions of a global value chain and therefore to domestic economies.

MNEs may use IP assets as vehicles for tax planning. The goal of such tax planning is to shift revenue to units within the MNE structure that are tax resident in low tax jurisdictions and therefore minimise the global tax liability of the MNE. This is often achieved through the use of royalty and licence agreements linked to IP assets.

Units of an MNE will typically be required to pay a royalty charge to another unit within the MNE for the right to produce or use assets intrinsic to the production process. In doing so profit from sales in higher tax jurisdictions can be transferred to units in lower tax jurisdictions, minimising the global tax liability for an MNE. The lack of a physical presence of IP assets lends themselves to such constructions as they can be easily located and relocated around the world at little cost.

In national accounts, these arrangements can affect production and related income measures such as GDP and operating surplus because legal ownership of intellectual property is an important factor in determining economic ownership for practical purposes. Furthermore, part of the production of MNEs and of their capital stock should be assigned to the country of residence of the subsidiary which holds the IP, even if the actual assembling of the product takes place in its entirety in a foreign country. Thus, understanding and identifying the economic ownership of IP is very important even though it is not always straight forward, as the producer of an IP may be different from the economic owner.

Special purpose entities

A trend in the last couple decades is for MNEs to include holding companies or special purpose entities that are created for purposes other than production.

Companies set up what are called intermediate holding companies or special purpose entities. The intermediate location is chosen for having low tax rates on dividend or royalty income received. Little or nothing happens in the intermediate locations, except that they collect income from the subsidiary companies they own and then usually loan, but not pay as dividends.

One common arrangement among MNEs is a series of sublicensing transactions or cost sharing arrangements on intellectual property that results when the intellectual property is legally owned, in whole or in part, by a special purpose entity in a low-tax jurisdiction. In national accounts, these arrangements can affect production and related income measures such as GDP and operating surplus.

Another common arrangement is the characterisation of a financial instrument as debt in one jurisdiction and as equity in another jurisdiction to take advantage of differences in taxability of interest and dividend flows. In this case, national accounting measures such as gross national income (GNI) can be affected as a result of interest and dividend flows.

The consequences of these and similar arrangements is a wedge between the location of production, the location of underlying factors of production, and the location of means for financing production, which affects the interpretability of important national accounting measures.

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