

Article

UK foreign direct investment, trends and analysis: August 2020

Provides new estimates for 2018 covering: foreign direct investment (FDI) presented by the ultimate controlling parent approach and insights on the contributions of FDI businesses to the UK economy.

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Release date:
3 August 2020

Next release:
To be announced

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1 . Main points

- EU companies immediately controlled the highest value of the UK's inward foreign direct investment (FDI) position (£579.0 billion) in 2018 whereas North American companies controlled the highest value on an ultimate basis (£629.8 billion).
- The value of “round-tripping” – UK companies investing in the UK through foreign affiliates – was £24.4 billion in 2018, equivalent to 1.6% of the total inward FDI position.
- UK companies with FDI links accounted for 30.3% of UK employment in 2018 despite representing only 2.1% of all UK businesses.
- The 25 largest inward investment companies by FDI position in 2018 accounted for 6.1% of inward turnover and 3.1% of inward employment; the top 25 outward companies accounted for 9.6% of outward turnover and 1.4% of outward employment.
- Companies with FDI links were more productive on average than UK companies without any links; among FDI companies, those with both inward and outward links were the most productive of all.
- In 2018, companies with an inward FDI link with the EU employed half (2.3 million UK employees) of those employed by companies with inward FDI links, while UK companies with outward links in the EU employed just under half (3.7 million UK employees) of those employed by companies with an outward link.
- FDI links with the South and Central Americas (inward) and North Americas (outward) gave UK companies the highest average productivity in 2018.

2 . Overview

Foreign direct investment (FDI) refers to cross-border investment made by residents and businesses from one country into another, with the aim of establishing a lasting interest in the country receiving investment.¹ Outward FDI captures the net investments made by UK companies abroad, whereas inward FDI covers net investments in the UK made by foreign companies.²

Statistics used in this analysis are presented using the directional principle. This is on the same basis as our [Foreign direct investment involving UK companies](#) statistical bulletin, published in December 2018. This principle is useful when assessing the transactions of parent company cross-border investments and for data linking. Related statistics in the balance of payments, Pink Book and in our [FDI involving UK companies \(asset and liability\): 2018](#) statistical bulletin present FDI statistics on an asset and liability basis. The differences between the calculations under these two approaches can be seen in [Foreign direct investment measurement principles explained](#).

This article is part of our continued research on FDI statistics. It includes the results from two FDI data-linking projects. The first project is in [Section 3](#), presenting UK FDI by the country of ultimate parent company, which adjusts the geographical composition of UK FDI to reflect ultimate control relationships. [Section 4](#) focuses on the characteristics of UK businesses involved in FDI relationships. This helps to understand the impact of FDI on the UK economy.

We published [Experimental insights on UK foreign owned businesses](#) on 29 July 2020. While covering similar topics to this article, the source used was [Bureau van Dijk's Orbis database](#) as opposed to the FDI survey, and other Office for National Statistics (ONS) information, which is used in this article. The Orbis-based article also provided information on financial variables such as total assets and shareholder funds, rather than FDI positions, earnings or flows.

Notes for: Overview

1. A minimum of 10% of the voting power is the basic criterion used to distinguish FDI relationships from portfolio investment.
2. Inward investment is made in the UK by non-resident companies.

3 . Foreign direct investment by country of the ultimate controlling parent

In line with international guidance, UK foreign direct investment (FDI) statistics are presented on an immediate parent company basis; as such, geographical compositions reflect direct relationships between investing parties. However, the geographical composition can become distorted, as the increase in the complexity of multinationals' corporate structures often results in investment chains crossing many borders.

Presenting FDI statistics on an ultimate parent company basis reveals the country where the ultimate risk-taker and beneficiary of the investment is based. While this affects the geographical composition of FDI, aggregate world figures will be the same whether shown on the ultimate or immediate parent company basis.

We linked FDI microdata with the Inter-Departmental Business Register (IDBR) to produce these ultimate controlling parent statistics. Further information can be found in [Section 8](#).

The value of round-tripping has been relatively stable between 2014 and 2018

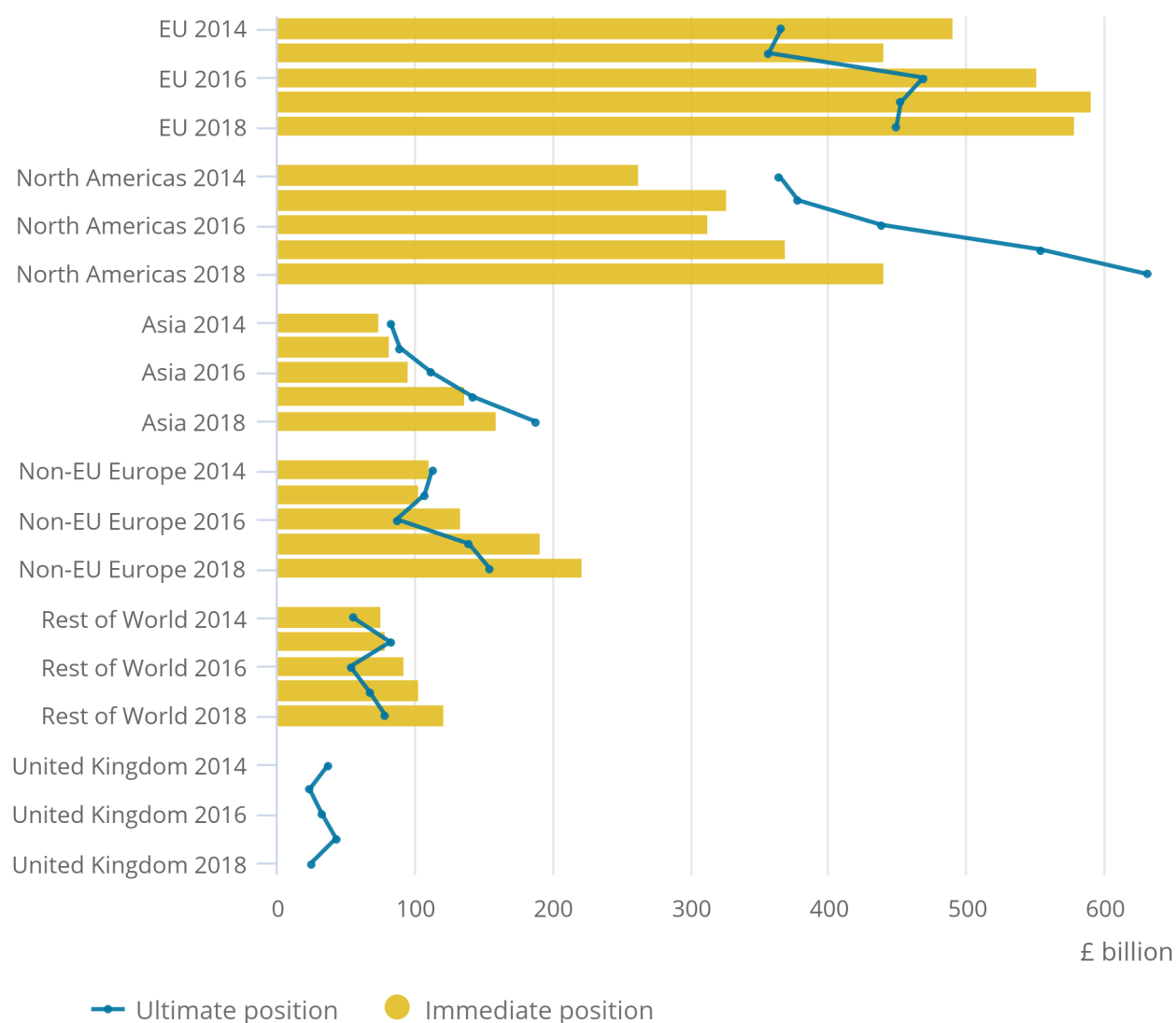
Figure 1 illustrates the continental distribution of the UK's inward investment on an immediate and ultimate parent basis. It shows that the EU had the highest inward position on an immediate parent basis in 2018 (£579.0 billion), which was considerably higher (by £130.6 billion) than on an ultimate basis (£448.4 billion).

Figure 1: The North Americas ultimately controlled the highest value of FDI in the UK in 2018

Inward foreign direct investment position by continent of the immediate and ultimate controlling parent company, 2014 to 2018

Figure 1: The North Americas ultimately controlled the highest value of FDI in the UK in 2018

Inward foreign direct investment position by continent of the immediate and ultimate controlling parent company, 2014 to 2018



Source: Office for National Statistics - Foreign Direct Investment Survey

Notes:

1. Totals might not match because of rounding.

The North Americas remained the continent controlling the highest inward ultimate position in 2018 at £629.8 billion. This was £189.4 billion higher than the immediate position (£440.4 billion). The ultimate FDI positions in the UK for North American and Asian companies have both followed upwards trends since 2014, which has also seen the gap between their immediate and ultimate positions grow too.

The values for the UK refer to FDI that enters the UK on an immediate basis from abroad that was ultimately controlled by parent companies based in the UK. This reflects “round-tripping”, whereby British companies’ foreign affiliates reinvest back into the domestic economy. The values have been largely stable between 2014 and 2018. UK companies ultimately controlled £24.4 billion of the UK’s inward FDI position in 2018, equivalent to 1.6% of the UK total ultimate position.

The US, Japan and Germany ultimately controlled the three highest value FDI positions in the UK in 2018

The US controlled the highest inward FDI stock in the UK on an immediate (£416.7 billion) and ultimate (£598.7 billion) basis in 2018 (Figure 2). Alongside the US, the Netherlands (£137.6 billion), Jersey (£111.5 billion) and Luxembourg (£111.4 billion) comprised the other four countries that immediately controlled more than £100 billion of direct investment in the UK that year.

Figure 2: US companies ultimately controlled the highest value of inward FDI in the UK in 2018

Comparison between the top 20 countries with the largest inward UK foreign direct investment positions on an immediate and ultimate basis, 2018

[Download the data](#)

Notes:

1. “..” denotes values suppressed to mitigate disclosure.
2. “-” indicates not applicable

On an ultimate parent basis, US companies still accounted for the highest value of inward investment at £598.7 billion, which was £182.0 billion higher than the immediate position. This was the largest increase in positions between the immediate and ultimate parent basis among all countries. This indicates that companies with ultimate parents in the US are investing in the UK through affiliates in other countries. Japan and Germany followed the US on an ultimate parent basis with positions of £104.7 billion £103.1 billion respectively.

The Netherlands and Luxembourg saw the largest decrease from immediate position to ultimate position (by £81.2 billion and £88.6 billion respectively) suggesting that a large proportion of companies that have an immediate parent company in the Netherlands or Luxembourg have an ultimate parent elsewhere.

The role of financial centres can also be seen when comparing immediate with ultimate FDI positions. Although the Netherlands and Luxembourg are not officially classified as financial centres, as listed in [Section 8](#), they are also places used by companies through which to channel their investments. Financial centres can host many “special purpose entities”, which form part of corporate structures but have less activity within the host economy. This would imply that the ultimate position should be lower than the immediate position for these countries. However, it is possible for companies to be registered in financial centres as well. One example is Bermuda, which held a slightly higher ultimate compared with immediate position in the UK in 2018.

Switzerland, the Cayman Islands and the Netherlands were among the top 10 countries through which round-tripping was linked in 2018

Through this data-linking exercise, we can identify through which countries UK parent companies are re-investing back into the domestic economy through their foreign affiliates (round-tripping). These values reflect global corporate structures of UK parent companies and how their functions have been organised internationally.

In 2018, the country through which UK companies invested the most into the UK was Switzerland. This was followed by the Cayman Islands, which also had the second-highest value in 2017. The only EU countries in Figure 3 that were involved in UK round-tripping in 2018 were the Netherlands, Luxembourg and Czech Republic. Also, of those top 10 countries in 2018, only three were recognised financial centres ([Section 7](#)). The relative position of the United States changed considerably between 2017 and 2018, going from 1st to 68th. This was from UK companies having a negative FDI position through the United States.

Figure 3: The highest value of round-tripping was controlled through Switzerland in 2018

Ten largest immediate FDI positions in the UK by country with UK-resident ultimate parent companies, 2017 and 2018

[Download the data](#)

Dutch companies ultimately controlled the highest value of the UK's inward FDI position from the Netherlands whereas US companies control the most from Luxembourg

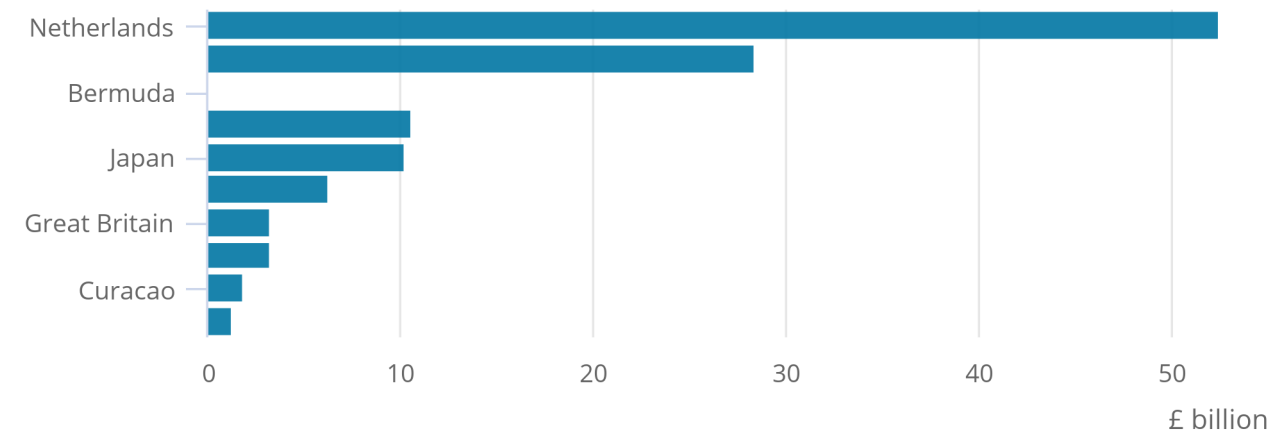
Companies outside the Netherlands are investing in the UK through the Netherlands. Figure 4 shows the breakdown of UK companies with immediate parents in the Netherlands. In 2018, Dutch companies ultimately controlled the most investment in 2018 at £52.5 billion (38.2% of the Netherlands's immediate position with the UK). A further £28.4 billion inward UK investment was ultimately controlled by US companies (20.6%). Finally, some UK-resident companies also re-invested back in the UK through their Dutch subsidiaries (round-tripping), which accounted for £3.3 billion (2.4%) of the immediate inward position from the Netherlands in 2018.

Figure 4: Dutch companies controlled £52.5 billion (38.2%) of the Netherlands’ immediate FDI position with the UK

The largest ultimate investing country for UK companies with a Dutch immediate parent, 2018

Figure 4: Dutch companies controlled £52.5 billion (38.2%) of the Netherlands’ immediate FDI position with the UK

The largest ultimate investing country for UK companies with a Dutch immediate parent, 2018



Source: Office for National Statistics - Foreign Direct Investment Survey

Notes:

- 1. Some values have been suppressed to mitigate disclosure.

By contrast with inward investment from the Netherlands, US companies ultimately controlled the highest value (£52.5 billion) of Luxembourg’s immediate inward FDI position in the UK in 2018, which was 47.1% of all inward investment from Luxembourg. Luxembourg companies controlled the second-highest proportion of inward investment at 18.7%. The amount of UK round-tripping through Luxembourg was also lower compared with the Netherlands, accounting for 0.9% of the immediate inward position from Luxembourg in 2018.

4 . Contributions of businesses engaged in foreign direct investment to the UK economy

The analysis in this section uses the results of linking foreign direct investment (FDI) microdata with both our main structural business survey, the Annual Business Survey (ABS), and the Inter-Departmental Business Register (IDBR)¹. This enables us to compare the characteristics of companies with different FDI links (inward and outward) as well as those without any links. Our [previous analysis](#) has been updated to now include 2018. This section presents statistics on an immediate basis.

It is important to note a number of points when interpreting statistics presented in this section. First, the FDI survey is designed to collect consolidated accounts for business groups in the UK, while the ABS collects granular information on business units further down in the ownership structure. As such, the microdata-linking exercise was conducted at a business-group level, where all units within a business group were marked as having a “FDI relationship” if the group was identified as receiving FDI.

Second, in contrast to other authors’ microdata-linking exercises, this analysis links the entire population of both the FDI and ABS and therefore includes both sampled returns and estimation. The approach has been used as it overcomes issues with grossing up to the whole economy where sampled businesses’ FDI statuses are assumed representative of entire non-sampled cells.

Third, these statistics cannot be used alone to determine the direction of causality between FDI and the real economy; for instance, while FDI-related companies are found to be more productive, these statistics cannot be used in isolation to deduce whether businesses in receipt of FDI become more productive, or whether productive companies attract FDI.

Fourth, note that there are a number of industry groupings that are omitted from the analysis in this section – most notably financial services – because of the industry coverage of the ABS.

[Section 9](#) includes further details on the methods for this section.

UK companies with FDI links accounted for 30.3% of UK employment in 2018 despite representing 2.1% of all UK businesses

Separating UK companies by type of FDI link allows an insight into the impact these companies have on employment, approximate gross value added (aGVA), and expenditure. UK companies with only an inward link are directly owned by foreign parent companies and those with only an outward FDI link are ultimate parent companies based in the UK.

Companies with both an inward and outward FDI link are companies that both control non-UK subsidiaries and receive investments from parent companies based abroad. Table 1 shows the contribution of firms with FDI links and those without to UK employment, aGVA and acquisitions of capital expenditure.

Table 1: Shares of UK business counts, employment, aGVA and acquisitions of capital expenditure attributable to firms with and without FDI links, 2018

2018

	UK businesses		Employment		aGVA		Acquisitions of capital expenditure	
	thousand	% total	million	% total	£ billion	% total	£ billion	% total
1. Any FDI link	52.8	2.1	8.8	30.3	654.4	40.8	108.2	44.7
only inward FDI link	25.6	1	1.7	5.9	135	8.4	22.3	9.2
only outward FDI link	18.1	0.7	4.3	14.9	287.8	17.9	47.2	19.5
of which: both inward and outward FDI links	9.2	0.4	2.8	9.6	231.6	14.4	38.8	16
2. No FDI link	2,446.9	97.9	20.1	69.7	949.9	59.2	133.9	55.3

Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

Notes

1. Employment figures presented in this section differ from those presented in the Annual Business Survey release as they are based on microdata from the Inter-Departmental Business Register, which uses a combination of business survey returns and administrative sources to populate employment estimates for every individual UK business. [Back to table](#)
2. aGVA statistics presented use 2018 market prices. [Back to table](#)
3. If one reporting unit from an enterprise group has any form of FDI link, then this status has been given to the whole enterprise group. [Back to table](#)
4. The sum of constituent items in tables may not always agree exactly with the totals shown because of rounding. [Back to table](#)

UK companies with FDI links are a relatively small proportion of the population yet they contribute considerably to the UK economy. Despite only 2.1% of UK businesses in 2018 having any FDI link, they employed 30.3% of all workers (8.8 million), accounted for 40.8% of aGVA (£654.4 billion) and contributed 44.7% of acquisitions of capital expenditure (£108.2 billion).

There were also differences between FDI companies. There were more UK businesses with an inward FDI link than an outward link in 2018, yet the contribution towards employment, aGVA, and acquisition of capital expenditure was always higher for the companies with only outward FDI links. This partly reflects how UK FDI statistics are collected. Our FDI survey focuses on the UK side of both outward and inward investments. A parent company in the UK is likely to have outward FDI links with a number of subsidiaries across the world, resulting in UK outward FDI being concentrated in a small number of the largest multi-nationals.

In contrast, it is companies in receipt of investment in the UK that are identified as having an inward FDI link, which means they're more likely to be smaller in size. This results in UK businesses having only an inward FDI link being more numerous than the UK businesses with only an outward FDI link, but accounting for a larger proportion of employment, aGVA, and acquisition of capital expenditure. More information on the distribution of inward and outward FDI companies by investment positions can be found in [UK foreign direct investment, trends and analysis: February 2020](#).

The distributions of turnover and employment by company size are similar for inward compared with outward links

Grouping FDI companies by descending value of inward FDI positions shows how these investments are distributed across the FDI population. In our data-linking exercise we are able to link these values to both the turnover and employment of those companies to show how these are related to the size of the FDI position.

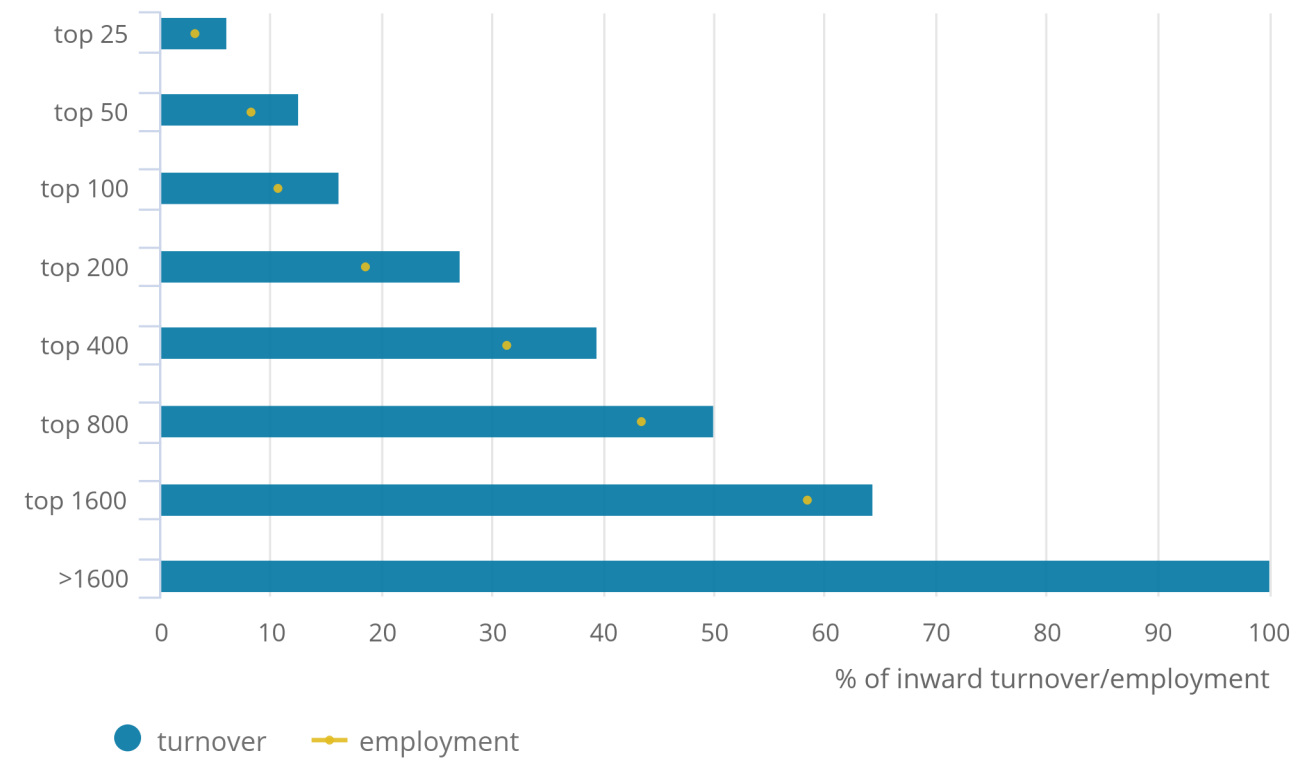
Inward turnover and employment were relatively evenly distributed among companies with an inward FDI link in 2018. Companies with the 25 highest-value stocks of inward FDI employed only 3.1% of workers and 6.1% of turnover (Figure 5). This increased to around half of turnover in 2018 and 43.4% of employment with the 800 largest companies with inward links. The differences between employment and turnover at different parts of the distribution were more similar than they are for the distribution by FDI positions.

Figure 5: The 25 largest inward FDI companies by stock value accounted for 6.1% of total UK turnover and 3.1% of UK employment

Distribution of turnover and employment, grouped by inward position in descending order, per cent, 2018

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Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

Notes:

1. The top 25 companies are not necessarily the same as those published in our February trends and analysis article as these are calculated on a directional basis. More information on these measurement principals on the differences between the calculations under these two approaches can be seen in [Foreign direct investment measurement principles explained](#).

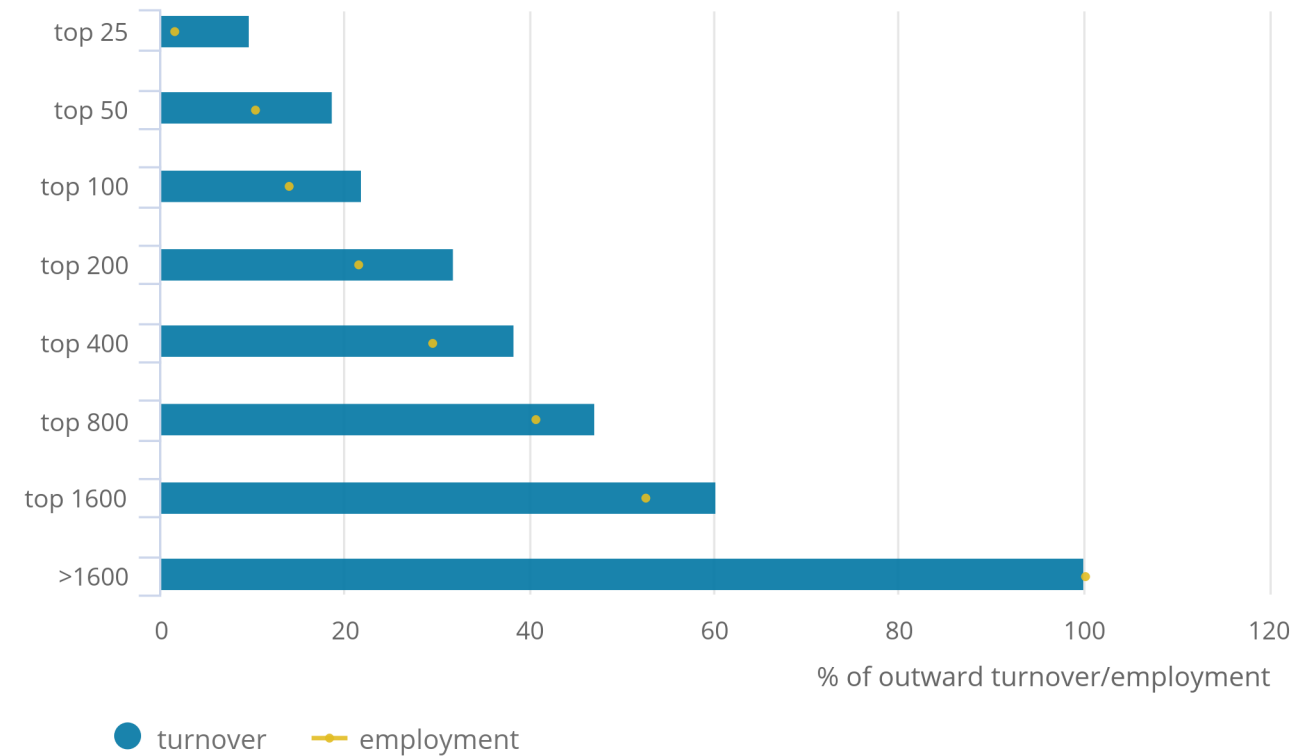
The differences between the proportions of employment and turnover by company size are greater for outward than inward companies. In 2018, the 25 largest companies by outward FDI position accounted for 9.6% of outward turnover, whereas these same companies had 1.4% of employment of workers with an outward FDI link (Figure 6). For groups outside the top 200 there are similar proportions of turnover and employment for both inward and outward FDI links.

Figure 6: The 25 largest outward FDI companies by position value accounted for 9.6% of turnover yet only 1.4% of employment in 2018

Distribution of turnover and employment, grouped by outward FDI position in descending order, per cent, 2018

Figure 6: The 25 largest outward FDI companies by position value accounted for 9.6% of turnover yet only 1.4% of employment in 2018

Distribution of turnover and employment, grouped by outward FDI position in descending order, per cent, 2018



Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

Notes:

1. The top 25 companies are not necessarily the same as those published in our February trends and analysis article as these are calculated on a directional basis. More information on these measurement principals on the differences between the calculations under these two approaches can be seen in [Foreign direct investment measurement principles explained](#).

These results also reflect the differences between companies with inward or outward FDI links. There are more companies in the UK's inward FDI population than the outward one, yet these tend to be smaller in terms of FDI stock values. The results show that the top 50 inward FDI companies accounted for a lower share of turnover, but a higher share of employment compared with outward direct investors. This hints at differences in productivity of these companies, which will be covered in more detail later in this article.

Companies with an inward FDI link were on average more productive in 2018 than those without an inward FDI link

Companies with inward FDI links have higher average (mean) employment and aGVA than those without an inward FDI link. This is particularly noticeable for businesses in production industries where companies with FDI links employ on average 180.2 more workers than those with no inward FDI link. The industry with smallest difference between companies with and without inward FDI links was in agriculture.

Table 2: Mean employment, aGVA and productivity of companies with inward FDI link relative to firms with no FDI link, by operating industry, 2018

	Mean employment		Mean aGVA (£ thousand)		Mean productivity (aGVA per worker, £ thousand)	
	FDI link	No FDI link	FDI link	No FDI link	FDI link	No FDI link
Agriculture	27	3.2	2,905.7	122.4	107.5	38.6
Construction	73.9	4	5,644.1	289.4	76.4	73
Production	192.6	12.4	23,177.1	885.4	120.3	71.3
Services	119.6	8.6	9,083.1	364.9	75.9	42.7

Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

Notes

1. Employment figures presented in this section may differ from those presented in the Annual Business Survey release as they are based on microdata from the Inter-Departmental Business Register [Back to table](#)
2. which uses a combination of business survey returns and administrative sources to populate employment estimates for every individual UK business. ,aGVA statistics use 2018 market prices. ,Productivity refers to aGVA per worker. [Back to table](#)

Companies with inward FDI links also have a higher mean aGVA than companies with no inward FDI link. This is again particularly noticeable for businesses in production industries whose value of mean aGVA was £23.2 million per business in 2018, compared with £0.9 million per business in companies with no inward FDI link (96.1% lower).

Combining aGVA with employment gives a measure of productivity. Companies with inward FDI links were more productive across each industry grouping compared with those without inward FDI links; for example, the average productivity for production industries was £120,300 aGVA per worker with inward FDI links and £71,300 aGVA per worker without.

We can also split productivity estimates by the form of FDI link (Table 3). This shows that companies with any FDI link were 58.3% more productive than those without any FDI link in 2018. There are also differences depending upon the form of FDI link. Companies with only an inward FDI link were 19.0% more productive than those with only an outward link. Businesses with both inward and outward links were the most productive and were 25.3% more productive than those with only outward links. These results could also partly explain the differences in the distribution of turnover and employment between Figure 5 and Figure 6.

Table 3: Productivity of UK companies based on form of foreign direct investment link, aGVA (£ thousands) per employee, 2018

Productivity of UK companies (aGVA/worker, £ thousands)

Any FDI link	74.7
1a. only inward FDI link	79.6
of which: 1b. only outward FDI link	66.9
1c. both FDI links	83.8
2. No FDI link	47.2

Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

All UK companies are more likely to import than export, yet those with FDI links are even more likely to trade than those with no such links

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 UK markets. The international focus of these businesses is also extended to trade, as many FDI-related businesses are part of multinationals' global value chains (GVCs).

Companies with any FDI link were much more likely to trade abroad than those without FDI links. Of all UK businesses with any FDI link in 2018, 23% of companies were exporters, 27% were importers and 16% were both importers and exporters (Table 4). Companies without such links were still more likely to be importers (7%) than exporters (4%), yet these proportions were much lower than those for companies with FDI links. Businesses with both an inward and outward FDI link were more likely overall to be either an importer (34%), exporter (40%) or both (29%) than those with only a one-way link or no link at all. This seems to indicate that companies with both FDI links are more interconnected in international markets.

Table 4: Trade in goods status of firms based on form of foreign direct investment link, percentage of UK total, 2018

	Exporter	Importer	Importer and exporter
1. Any FDI link	23%	27%	16%
only inward	21%	26%	15%
of which: only outward	22%	25%	16%
both inward and outward FDI links	34%	40%	29%
2. No FDI link	4%	7%	1%

Source: Office for National Statistics - Foreign Direct Investment Survey and Annual Business Survey

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](#)
2. The importer and exporter results in ABS are being developed and these experimental results have been included in this analysis. [Back to table](#)

Companies with immediate parent companies in the EU employed 2.3 million UK workers in 2018

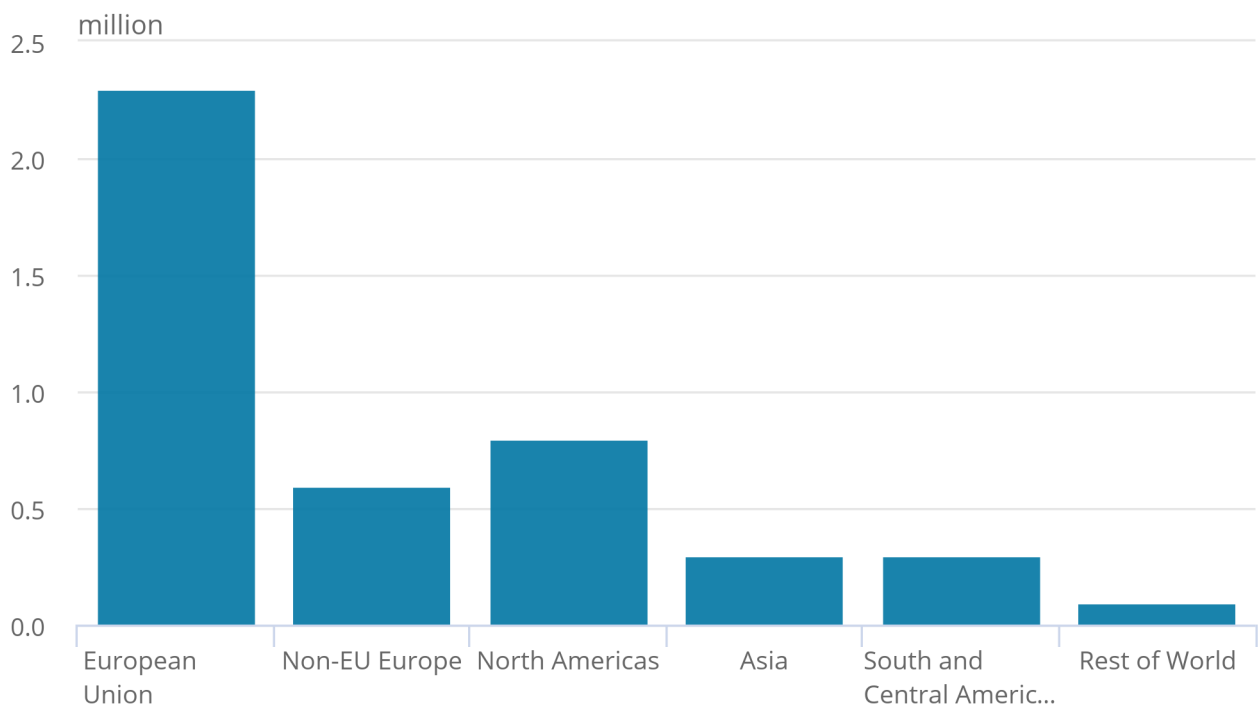
Companies in receipt of inward FDI employed over 4 million workers in 2018. Of those, more than half (2.3 million) were employed by companies with EU-based immediate parent companies (Figure 7). North American-owned companies accounted for a further 0.8 million UK employees, and non-EU European-owned companies accounted for 0.6 million UK employees.

Figure 7: EU-owned companies accounted for more than half of the total employees among companies with foreign parent companies in 2018

Employment by UK businesses involved in inward foreign direct investment by geographical region of investment, 2018

Figure 7: EU-owned companies accounted for more than half of the total employees among companies with foreign parent companies in 2018

Employment by UK businesses involved in inward foreign direct investment by geographical region of investment, 2018



Source: Office for National Statistics - Foreign Direct Investment Survey

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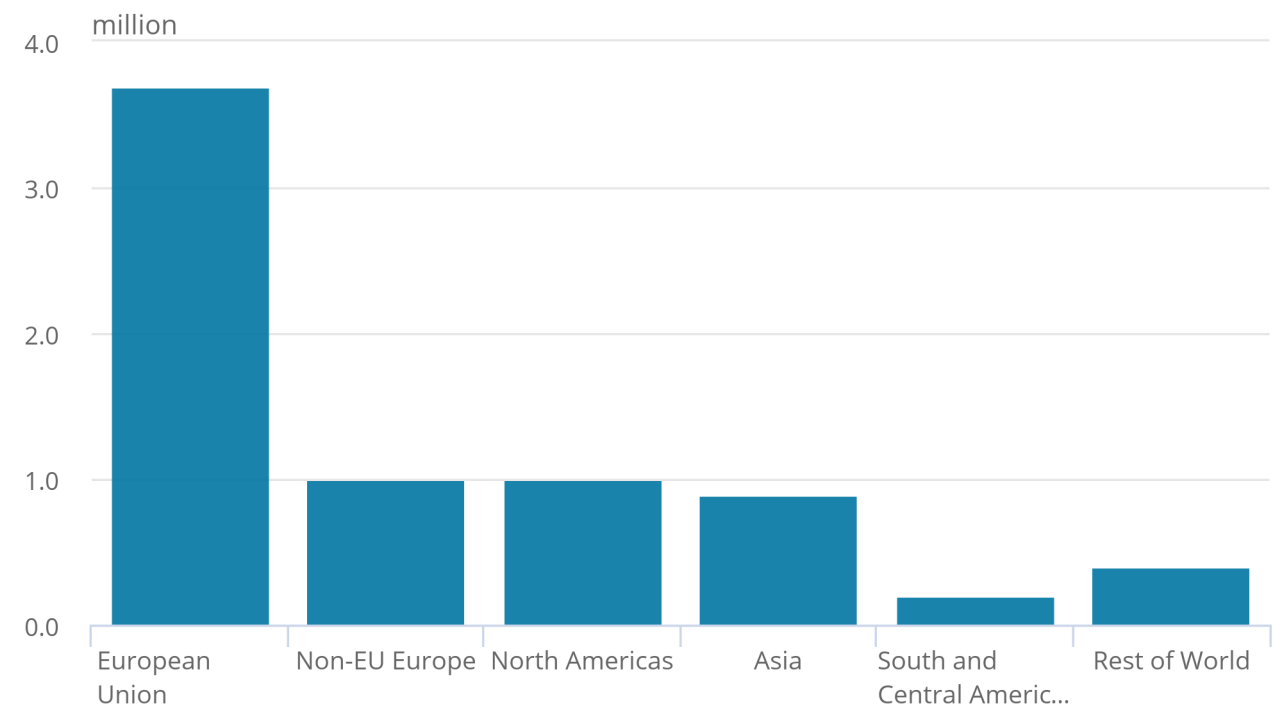
The same analysis can be completed for companies with outward FDI links. This shows that businesses with outward links to the EU employed 3.7 million UK workers in 2018 (Figure 8). UK companies with links in non-EU Europe and the North Americas employed 1.0 million each in the UK.

Figure 8: UK companies with links to the EU also accounted for the highest number among outward FDI companies in 2018

Employment by UK businesses involved in outward foreign direct investment by geographical region of investment, 2018

Figure 8: UK companies with links to the EU also accounted for the highest number among outward FDI companies in 2018

Employment by UK businesses involved in outward foreign direct investment by geographical region of investment, 2018



Source: Office for National Statistics – Foreign Direct Investment Survey

Notes:

1. Employment figures presented in this section differ from those presented in the Annual Business Survey release as they are based on microdata from the Inter-Departmental Business Register, which uses a combination of business survey returns and administrative sources to populate employment estimates for every individual UK business.

UK companies with FDI links with the EU had the highest aGVA in 2018

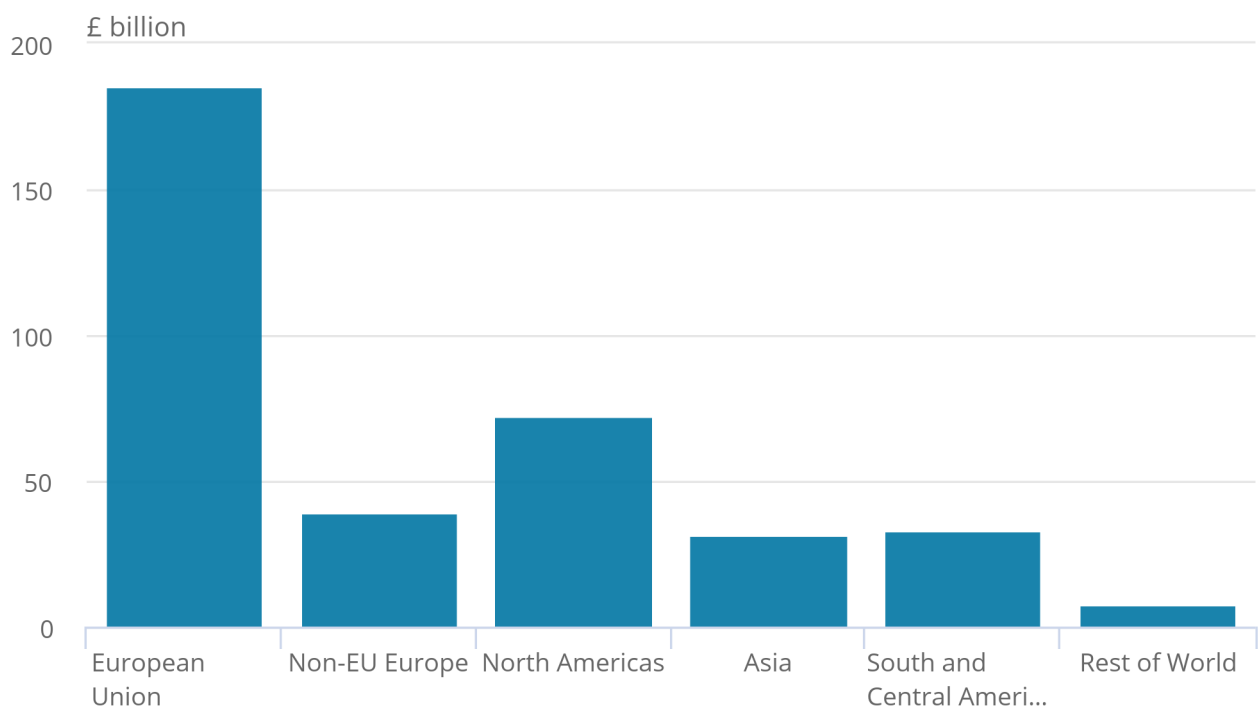
UK-based companies with inward FDI links produced around £368.4 billion of aGVA in 2018. The continent breakdown presented in Figure 9 shows that inward investments immediately controlled by EU companies generated £185.7 billion (or 50.4%) of that total in 2018. UK businesses in receipt of FDI from North America had £72.0 billion aGVA in 2018.

Figure 9: EU-owned companies in the UK accounted for half of the aGVA of all companies with inward FDI links in 2018

Approximate gross value added by UK businesses in receipt of inward foreign direct investment by geographical region of investment, 2018

Figure 9: EU-owned companies in the UK accounted for half of the aGVA of all companies with inward FDI links in 2018

Approximate gross value added by UK businesses in receipt of inward foreign direct investment by geographical region of investment, 2018



Source: Office for National Statistics – Foreign Direct Investment Survey and Annual Business Survey

Notes:

1. aGVA statistics presented use 2018 market prices.

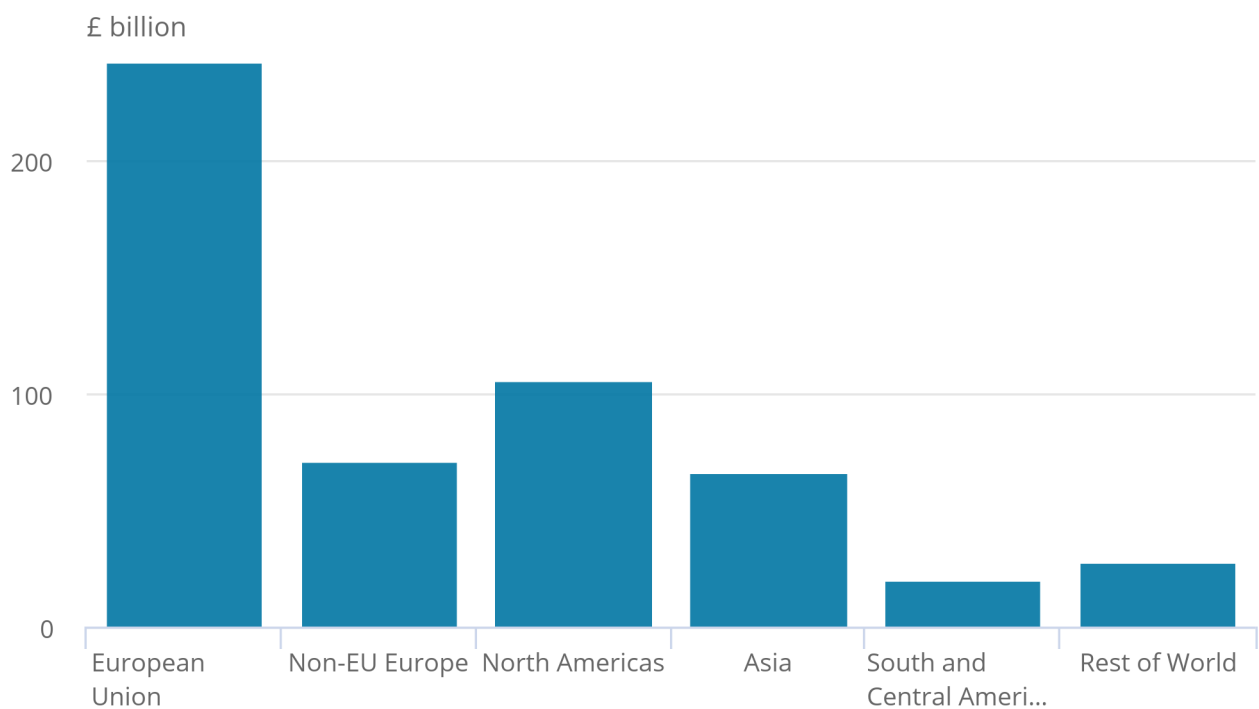
UK companies with direct investments in the EU accounted for the largest value of aGVA in 2018 with £242.3 billion. This was equivalent to 45.4% of the total, and lower than the proportion of aGVA that EU inward investors generated. UK businesses investing in the North Americas generated £105.4 billion aGVA, followed by those investing in Non-EU Europe with £71.3 billion (Figure 10).

Figure 10: Just under half of the aGVA of UK companies with outward FDI links control investments in the EU

Approximate gross value added by UK businesses in receipt of outward foreign direct investment by geographical region of investment, 2018

Figure 10: Just under half of the aGVA of UK companies with outward FDI links control investments in the EU

Approximate gross value added by UK businesses in receipt of outward foreign direct investment by geographical region of investment, 2018



Source: Office for National Statistics – Foreign Direct Investment Survey and Annual Business Survey

Notes:

- 1. aGVA statistics presented use 2018 market prices.

Links with the South and Central Americas (inward) and North Americas (outward) gave UK companies the highest average productivity in 2018

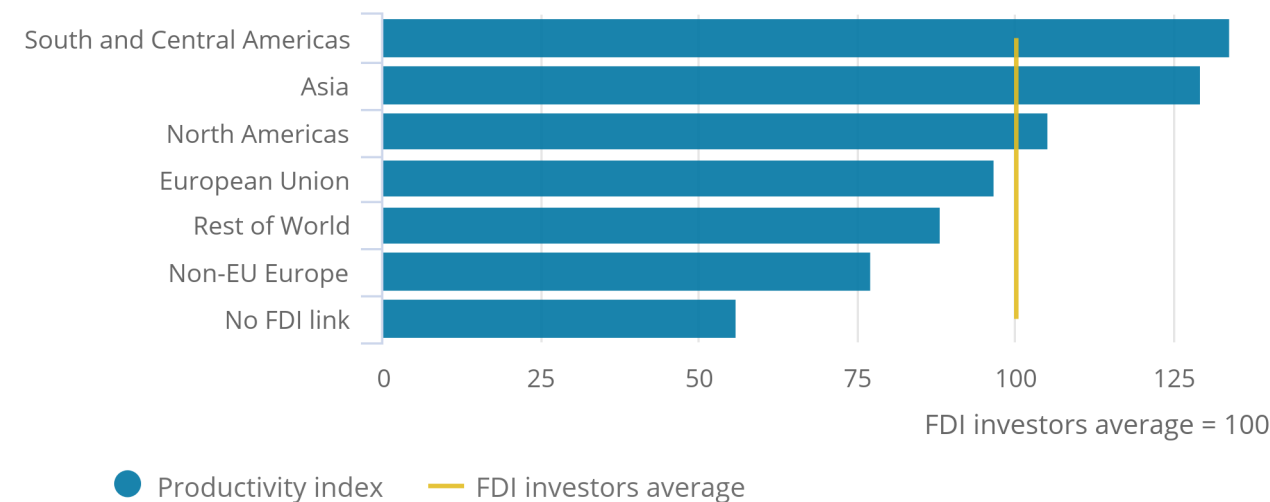
Despite links with the EU accounting for the highest amount of employment and aGVA among UK companies with foreign immediate parent companies, the productivity of those companies was below the average of all companies with inward FDI links. This is shown in Figure 11 where productivity values have been indexed to the world average productivity of FDI companies in each year. Any value below 100 indicates lower productivity on average than all FDI companies with inward links.

Figure 11: Inward FDI companies with Asian or South and Central American parent companies were more productive than average inward FDI companies in 2018

Productivity index of UK businesses in receipt of inward foreign direct investment by geographical region of investment, index, average of all companies with FDI links = 100, 2018

Figure 11: Inward FDI companies with Asian or South and Central American parent companies were more productive than average inward FDI companies in 2018

Productivity index of UK businesses in receipt of inward foreign direct investment by geographical region of investment, index, average of all companies with FDI links = 100, 2018



Source: Office for National Statistics – Foreign Direct Investment Survey and Annual Business Survey

Notes:

1. Productivity refers to aGVA per worker.

The most productive inward direct investments in the UK were from South and Central Americas, with an index value of 134.0 in 2018. This implies that those businesses were 34.0% more productive than the average of inward FDI companies, while FDI from Asia was the second-most productive (29.2%).

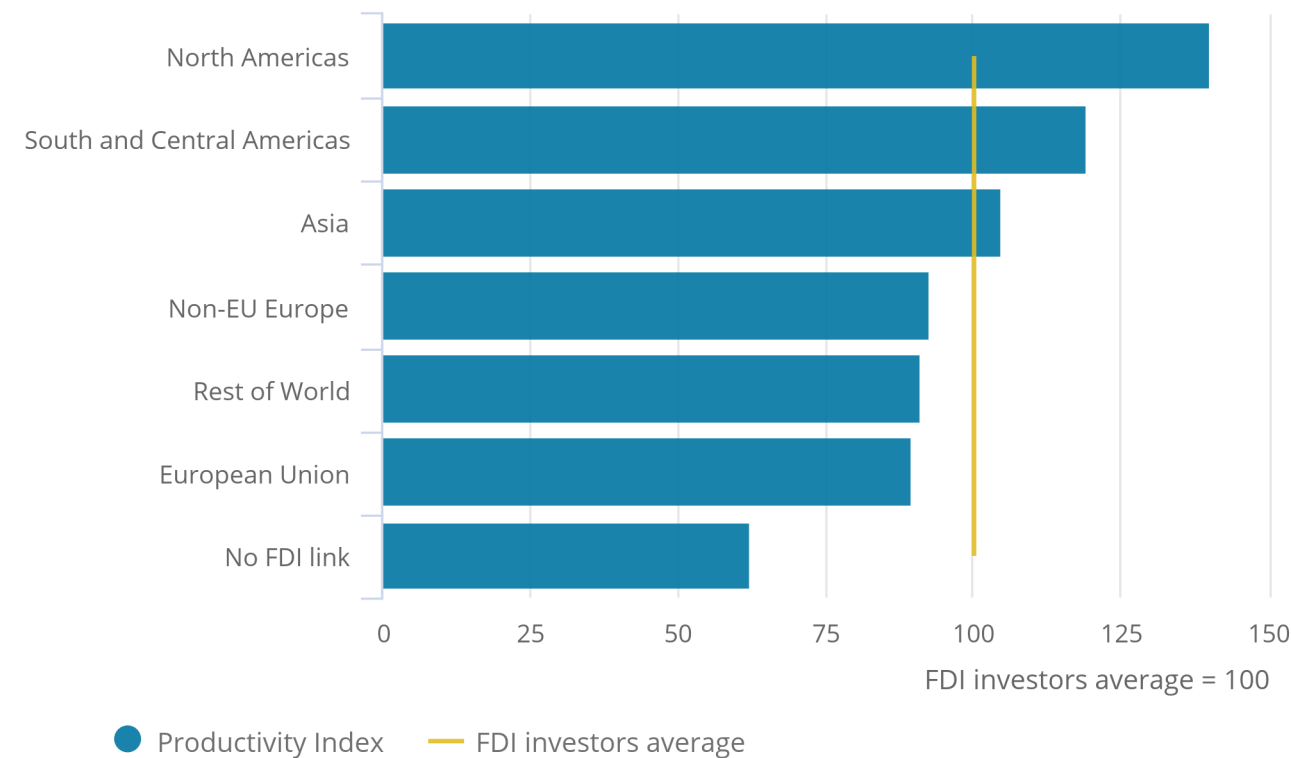
UK outward investments in the North Americas were the most productive on average in 2018 (Figure 12). These were 40.3% more productive than the UK's world average outward investments. Despite having the lowest amount of employment, UK companies with outward FDI links with South and Central America were more productive than the average outward FDI investments with an index value of 119.2 (19.2% above the average).

Figure 12: UK companies with outward FDI links in the North Americas, South and Central Americas, and Asia were more productive than the average outward direct investor in 2018

Productivity index of UK businesses in receipt of outward foreign direct investment by geographical region of investment, index average of all companies with FDI links = 100, 2018

Figure 12: UK companies with outward FDI links in the North Americas, South and Central Americas, and Asia were more productive than the average outward direct investor in 2018

Productivity index of UK businesses in receipt of outward foreign direct investment by geographical region of investment, index average of all companies with FDI links = 100, 2018



Source: Office for National Statistics – Foreign Direct Investment Survey and Annual Business Survey

Notes:

1. Productivity refers to aGVA per worker.

5 . Acknowledgements

Authors: Andrew Jowett and Aphra Smith, Office for National Statistics.

The authors would like to acknowledge the contributions of Laura Garcia Blasco, Lee Mallett and Rob Morgan.

6 . Quality and methodology

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Foreign direct investment \(FDI\) QMI](#).

7 . Financial centres by continent

Asia

Bahrain, Hong Kong, Lebanon, Philippines, Singapore.

EU Europe

None.

Non-EU Europe

Andorra, Gibraltar, Guernsey, Isle of Man, Jersey, Liechtenstein.

North America

None.

Central and South America

Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Cayman Islands, Curacao, Dominica, Grenada, Montserrat, Panama, Saint Lucia, Sint Maarten, St Kitts and Nevis, St Vincent and the Grenadines, Turks and Caicos Islands, British Virgin Islands, US Virgin Islands.

8 . Estimating FDI by country of the ultimate controlling parent company

Presenting foreign direct investment (FDI) statistics by the ultimate controlling parent requires matching company microdata from the Inter-Departmental Business Register (IDBR) and Foreign Direct Investment (FDI) survey. The IDBR contains business-specific information such as the ultimate parent company obtained through survey data and procured from Dun and Bradstreet (D&B) – a commercial data source. The FDI survey contains information on companies' cross-border investment positions, financial flows and income flows on an immediate parent basis. By linking the two files, we aim to establish from where inward FDI ultimately originates. This section outlines how IDBR data were linked to the FDI population.

The Inter-Departmental Business Register

The Inter-Departmental Business Register (IDBR) is a comprehensive list of 2.6 million UK businesses in all parts of the UK economy, other than the very small businesses (those without employees and with turnover below the tax threshold) and some non-profit making organisations. It is used by the government for statistical purposes and is fully compliant with the EU regulation on harmonisation of business registers for statistical purposes (EC No 177/2008).

The IDBR provides the main sampling frame for surveys of businesses carried out by the Office for National Statistics (ONS) and other government departments. It is also an important data source for analyses of business activities.

The two main sources of input are the Value Added Tax (VAT) system and Pay As You Earn (PAYE income tax) from HM Revenue and Customs (HMRC). Additional input comes from Companies House, Dun and Bradstreet, our business surveys and contact with the largest multinational businesses through profiling. All data on the IDBR are treated as Official Sensitive and are protected by the Code of Practice for Statistics and by specific legislation.

The Foreign Direct Investment (FDI) Survey population

The FDI population is produced from four sources. Data from the IDBR and Dun and Bradstreet (D&B) are combined to identify the target population and sampling frame for the FDI survey. Auxiliary variables, such as the number of affiliates, are not used to produce FDI estimates directly, but are used by the ONS to stratify the outward survey sample. The D&B inputs are sourced from D&B's Who-owns-Whom database of world linkages of companies. An annual data extract is procured at the start of the calendar year. These are then adapted and matched to the IDBR. The resulting data extract provides information on majority share ownership only (more than 50% of ordinary shares).

We also maintain a separate database for enterprises that have previously been identified to be engaged in FDI either through the FDI or Mergers and Acquisitions surveys. This database includes minority share relationships (between 10% and 49% of ordinary shares) that are not included in the IDBR and D&B extract but are relevant for FDI statistics.

The FDI population is also updated regularly using new information from the ONS Mergers and Acquisitions Survey, which is conducted on a quarterly basis and collects information on domestic and cross-border acquisitions and disposals involving UK companies.

Throughout the year our Large Cases Unit (LCU) profiles the largest multinational businesses to ensure the correct structure for all ONS surveys; there is a pool of 2,000 businesses for the profilers to maintain. A sub-section of LCU also maintains the linkages between businesses throughout the year. This information is obtained from ONS surveys, Companies House and data from HMRC.

In contrast to most ONS business surveys, where sampled returns are weighted to estimate for the non-sampled population, FDI estimation methods predict values for all non-sampled businesses, allowing for aggregate estimates to be derived simply by summing over the domains of interest. While uncommon in the ONS, this method is not unique and has a sound, academic basis. This approach provides a rich microdata set for the whole population, with returned and estimated values for each company.

Linking the IDBR to the FDI population

Data linking was carried out in SAS by binding the IDBR extract to the FDI population. The IDBR extract includes the country code of the ultimate parent. As the IDBR holds information only on majority share ownership (above 50%) while FDI includes minority share ownership (between 10% and 49%) information, there are some gaps in the provided IDBR extract.

Moreover, our FDI survey is supplemented by data on Monetary Financial Institutions (MFIs), bank holding companies, public corporations and property data, which are collected from other sources such as the Bank of England and the Balance of Payments team in the ONS. These do not contain business identifiers that can be linked to IDBR data (contributing to the gaps in the IDBR extract). These gaps were replaced with the immediate country code information from the FDI survey. This affected 15.0% of the total FDI positions.

Since the IDBR only collects information on the majority shareholder of a company, this can lead to some country estimates being overestimated. This is an approach accepted internationally, and discussions suggest this approach can be more appropriate with FDI positions than with earnings. As the majority shareholders have effective control of the target companies, these are also the companies that bear the ultimate risk of the investment.

Method for estimating round-tripping

As the IDBR only contains information on the ultimate parent country for majority shareholders, information will not be available for any minority shareholders (even if they are an ultimate controlling parent of that minority stake). Therefore, if a UK company had a UK-resident majority shareholder (even if they only held 51% of voting power) and an overseas-based minority shareholder (holding less than 50% of the voting power), the previous methodology would allocate the entire value of the FDI stock to the country of the majority shareholder. In this example, that would be classed as the UK and would be categorised as round-tripping.

Attempting to resolve this overestimation, validation of the largest of such examples by FDI stock was carried out using additional data sources. Where companies were shown to have a marginal UK-resident majority shareholder relationship, and signs of significant voting power from foreign parents were evident, the ultimate controlling country was allocated to be the country of the immediate parent.

9 . Linking FDI microdata with Annual Business Survey microdata

Overview

This data-linking project involves matching company microdata from the Annual Business Survey (ABS) and Foreign Direct Investment (FDI) Survey. The ABS collects information on business characteristics such as turnover, employment and gross operating surplus, while the FDI survey contains information on companies' cross-border investment positions, financial flows and income.

By linking the two files, the project aims to develop understanding of the characteristics of businesses engaged in FDI relationships and answer some important questions such as:

- are UK companies that have FDI links more productive?
- are they more likely to trade internationally?
- do they invest more in fixed capital within the UK?
- are UK companies that receive investment more productive than UK companies that invest abroad?

This annex outlines how the ABS sample was expanded to the Inter-Departmental Business Register (IDBR) before linking to the FDI population.

The Annual Business Survey population

Following the collection and processing of the ABS results, these data are held as two separate files: a “universe” or population dataset, consisting of 2.1 million reporting units within the ABS sample frame; and the “contributor” or respondent dataset, which contains survey returns from the 56,000 reporting units who responded to the business surveys.

We collect data for Great Britain, which are combined with survey data from the Northern Ireland Statistics and Research Agency (NISRA) Annual Business Inquiry (ABI) to create a UK-wide measure. Each reporting unit is given a unique identifier so it is possible to link the two datasets.

The population file is extracted from the IDBR – which is the source for all Office for National Statistics (ONS) business surveys. It contains a small number of variables on the business’s core attributes, including the type of industry, regional location, employment and turnover measured at a point in time.

The industry, region (whether England and Wales, Scotland, or Northern Ireland) and size of the business are used to create the cells from which the ABS and Annual Business Inquiry (ABI) samples are selected. They are selected using a stratified random sample design; large businesses (with employment of 250 or more) are selected each year as they are dominant contributors to the estimated total values. Further information on our sample selection and ABS methodology can be found in the [ABS Technical Report](#).

The respondent file contains nearly 2,000 variables extracted or derived from the completed survey forms. Each business has a design weight that reflects the business’s probability of selection and a calibration factor to correct for any potential bias in the sample. To produce aggregated totals, a business’s response is scaled by the design weight and calibration factor.

For continuous variables, to expand the ABS population file to include value data for all businesses in the sample universe, the aggregated totals for each variable has to be distributed across the non-sampled businesses in the ABS universe, at a cell level. Where a business provided a response to the survey, their unweighted values are removed from the aggregated totals. The difference is then distributed across the non-sampled businesses in the cell, based on employment held for the business. This employment, extracted from the IDBR ahead of the ABS sample selection, provides an indication of each business’s relationship to other businesses within their sample cell.

Where the variable is a discrete or logical variable, the value for each non-sampled business has been based on a probability function. For example, if we had a cell with 20 businesses with five respondents, the ratio of the actual responses to a “yes” or “no” question could be three to two. In this instance, the probability of any of the non-sampled businesses being “yes” is 0.6. Using a uniform random number function for each non-sampled business, if the random number for the business is less than 0.6, the estimated variable is recorded as a “yes”. This differs from the methodology used for the ABS: Great Britain non-financial business economy exporters and importers release, which sums the weighted values of any business with a “yes” response, therefore assuming that the estimated response from all of the unsampled businesses that the respondent represents is “yes”.

The Foreign Direct Investment (FDI) Survey population

The FDI population is produced from four sources. Data from the IDBR and Dun and Bradstreet (D&B) are combined to identify the target population and sampling frame for the FDI survey. Auxiliary variables, such as the number of affiliates, are not used to produce FDI estimates directly, but are used by the ONS to stratify the outward survey sample. The D&B inputs are sourced from D&B’s Who-owns-Whom database of world linkages of companies. An annual data extract is procured at the start of the calendar year. These are then adapted and matched to the IDBR. The resulting data extract provides information on majority share ownership only (more than 50% of ordinary shares).

We also maintain a separate database for enterprises that have previously been identified to be engaged in FDI either through the FDI or Mergers and Acquisitions surveys. This database includes minority share relationships (between 10% and 49% of ordinary shares) that are not included in the IDBR and D&B extract but are relevant for FDI.

The FDI population is also updated regularly using new information from the ONS Mergers and Acquisitions Survey, which is conducted on a quarterly basis and collects information on domestic and cross-border acquisitions and disposals involving UK companies.

Throughout the year our Business Profiling Team (BPT) investigates the largest multinational businesses to ensure the correct structure for all ONS surveys; there is a pool of 2,000 businesses for the profilers to maintain. A sub-section of BPT also maintains the linkages between businesses throughout the year. This information is obtained from ONS surveys, Companies House and data from HM Revenue and Customs (HMRC).

In contrast to the ABS and most ONS business surveys, where sampled returns are weighted to estimate for the non-sampled population, FDI estimation methods predict values for all non-sampled businesses, allowing for aggregate estimates to be derived simply by summing over the domains of interest. While uncommon in the ONS, this method is not unique and has a sound, academic basis. This approach provides a rich microdata set for the whole population, with returned and estimated values for each company.

Linking the ABS and IDBR population to the FDI population

Data linking was carried out in SAS by merging the expanded ABS and IDBR population to the FDI population. The FDI population used for the linking included only four variables – the Who-owns-Whom reference (wownt), the business unit reference number (ruref), the FDI position, and the Standard Industrial Classifications 2007 (SIC 2007) industry. Multiple enterprise reference numbers can exist in the FDI population, which reflect an enterprise having more than one FDI investor.

Prior to data linking, businesses in the FDI population that were recorded as Monetary Financial Institutions (MFIs), bank holding companies, public corporations and property were removed. Data on these are collected from other data sources, such as the Bank of England and the Balance of Payments team in the ONS, and do not contain business identifiers to allow linking with the ABS.

To overcome differences in which enterprise units return surveys for respective sampled businesses (FDI tends to sample the parent enterprise, while the ABS samples lower reporting units in the UK ownership tree), values relating to the subsidiaries of the same enterprise group are summed in the FDI population to make them unique (and therefore represent the inward investment relationship of the entire enterprise group).

The two files were then merged using the enterprise reference number. In instances where there were multiple subsidiaries with the same enterprise reference numbers on the ABS population, the investment relationship of the overall enterprise group is replicated for each reporting unit on the ABS; therefore, the FDI relationship on the final dataset represents the FDI relationship for the enterprise rather than that specific reporting unit.

The merged file was then separated into two – a dataset containing businesses that have been linked between the expanded ABS and IDBR population and FDI population, and a dataset containing businesses on the expanded ABS and IDBR population that do not have FDI links.

Further merging exercises were undertaken between the unmatched FDI businesses to the unmatched expanded ABS and IDBR population, which involved using identifiers relating to unique reporting units lower down in the UK ownership tree.

Finally, the matched ABS and FDI file on an enterprise and reporting unit basis and the unmatched businesses were combined into one dataset, which provides the entire expanded ABS and IDBR population along with matched FDI values where relevant. The merging exercise successfully matched a range of between 70% to 80% of the approximately 30,000 enterprises in the FDI population to the expanded ABS and IDBR population over the time series.

There are some unmatched FDI businesses, which can be because of factors such as differences in the industry coverage of both surveys. The ABS excludes: finance and insurance, public administration and defence, public provision of education, public provision of health and all medical and dental practice activities; FDI excludes: MFIs, public corporations, bank holding companies and property data.