Office for National Statistics

Article

Bilateral asymmetries in UK foreign direct investment statistics: September 2020

Summarises the main results of our continued research into bilateral asymmetries in UK foreign direct investment statistics with mirror statistics produced by other countries.

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1 . Main points

- Bilateral asymmetries occur when mirror statistics produced separately by two countries do not match; the UK is not alone in having bilateral asymmetries in foreign direct investment (FDI) statistics.
- The aim of this research is to develop our understanding of why such asymmetries exist by identifying the most likely reasons for asymmetries between UK FDI and counterpart statistics.
- Comparing UK-derived microdata for the FDI positions of the top 20 largest companies with mirror data from Germany and Spain reveals that the reasons for these asymmetries can vary between years and by direction (inward or outward).
- We also compared microdata from Italy with the UK FDI population, which confirmed that the reasons behind FDI asymmetries vary from country to country.
- Other countries had similar reconciliation results to the UK, with some companies not present in their population and different values in our results compared with their own.
- Quality indicators of FDI asymmetries showed that where the counterpart microdata could be matched in the UK FDI population, the overall asymmetry was much smaller.

2 . Our research with foreign direct investment statistics

Foreign direct investment (FDI) refers to cross-border investments made by residents and businesses from one country into another, with the aim of establishing a lasting interest in the country receiving investment. A minimum of 10% of the voting power is the main criterion used to distinguish FDI relationships from portfolio investment; direct investments are also expected to last for more than one year, whereas portfolio investment tends to be made for shorter durations. FDI statistics can be analysed in terms of:

- positions – the stock of investment at a given point in time
- earnings – income generated on that stock over a specific period of time
- flows – value of cross-border FDI transactions over a specific period of time

Detailed annual statistics are available in the directional FDI statistical bulletin with further insights found in UK FDI: trends and analysis, August 2020.

Every country can have its own inward and outward FDI populations. These populations are a collection of all businesses identified as having a cross-border investment relationship. The outward population is for all companies resident in the reporting country that directly control or influence other companies abroad. The inward population is for all resident companies that are directly controlled or influenced by foreign parent companies.

It is these populations that are used to produce FDI statistics. The options for collecting information include a survey of all companies in the population (a census) or a representative sample of companies upon which to base estimates. Alternatively, there could be direct reporting as part of a regulatory framework for foreign investors, making it a legal requirement for FDI companies to provide this information. The FDI QMI provides further details on the UK approach.

Bilateral asymmetries occur when mirror statistics produced separately by two countries do not match

The cross-border nature of FDI means that the same activity is often measured twice by the countries on either side of the transaction. In theory, one country's outward investment should equal the partner country's measurement of inward investment, and the other way around; the counterpart country's estimate is often referred to as the mirror statistic. In practice, however, asymmetries arise where these values are not equal to each other. This can occur in estimates for FDI positions, earnings and flows. Such differences can also exist in other statistics, including international trade.

Asymmetries in FDI statistics have been a long-standing issue, present in most years and for the majority of countries for which statistics are available.[1] This partly reflects the challenges of measuring cross-border activities, including direct investment. Evolving business practices also mean that it is more difficult for international statistics to measure all of these activities.

It will not be possible to completely eradicate asymmetries from bilateral FDI statistics. Instead, the aim of this research is to continue developing our understanding of the reasons why such asymmetries exist. However, the UK cannot act alone in addressing bilateral asymmetries in FDI statistics. This is among the main reasons why the UK has remained active in international collaborations on this and many other FDI-related topics.

This article follows some of the next steps from our first article on this subject. In that article, we compared UK-derived microdata for FDI positions in 2015 with mirror microdata of the top 20 largest companies from Luxembourg, the Netherlands, Germany and Belgium involving the UK. We have now extended this analysis to include similar microdata for 2016 from Germany, Italy and Spain and have received the equivalent results from Italy, Luxembourg and Spain. Just like the previous article, FDI positions statistics are used throughout this article. We mainly use information up to 2016 since this was the latest year for which complete FDI statistics were available at the time we started this research and exchanged more microdata.

Notes for: Our research with foreign direct investment statistics

1. This can be seen in the International Monetary Fund (IMF) working paper on Asymmetries in the Coordinated Direct Investment Survey: What Lies Behind? (2017) or the Co-ordinated Direct Investment Statistics (CDIS) database.

3 . Asymmetries in foreign direct investment statistics

The UK is not alone in having large foreign direct investment (FDI) asymmetries. The UK had the fourth-largest outward FDI position in the world in 2016, according to International Monetary Fund (IMF) statistics.[1] The UK also had the fourth-largest absolute FDI asymmetry with the rest of the world, at $964.4 billion (Table 1). This was equivalent to 64.6% of the UK's outward FDI position. While the absolute value was lower than the three other countries with greater asymmetries – Luxembourg, Netherlands and the US – the UK had the highest percentage of the four. As in our previous analysis for 2015, the UK was the only country with a negative outward asymmetry. This indicates that total UK FDI positions were lower values than the mirror statistics reported by other countries with the UK.

Table 1: Top 10 differences in FDI outward statistics in 2016, $ billion unless otherwise stated

Country	Outward position	Outward derived	Asymmetry	Asymmetry (percentage outward position)
Luxembourg	4,603.7	2,550.1	2,053.6	44.6
Netherlands	5,381.6	3,408.5	1,973.1	36.7
United States	5,586.0	4,197.8	1,388.2	24.9
United Kingdom	1,492.0	2,456.4	-964.4	-64.6
Australia	432.0	202.8	229.2	53.1
Russia	334.3	132.9	201.4	60.3
Germany	1,367.7	1,200.9	166.7	12.2
Brazil	201.8	39.5	162.3	80.4
France	1,279.7	1,139.7	140.0	10.9
Cyprus	406.1	274.3	131.8	32.5

Source: International Monetary Fund and Office for National Statistics

Notes

1. The International Monetary Fund (IMF) calculate the outward derived foreign direct investment (FDI) values from the corresponding inward FDI statistics of the counterpart country which in this case is all other countries in the world.

2. The asymmetry is the value of the outward position less the outward derived position (mirror statistic).

The UK had the largest absolute asymmetry for the inward FDI position with the rest of the world in 2016 (Table 2). The asymmetry was negative $1,614.1 billion, calculated as the UK inward FDI position of $1,475.5 billion minus the inward derived value from mirror statistics of $3,089.6 billion. There were four other countries that reported inward FDI positions absolute asymmetries above $1,000 billion in 2016 and three other countries – US, Ireland and Canada – that had negative FDI asymmetries.

Table 2: Top 10 differences in FDI inward statistics in 2016, $ billion unless otherwise stated

Country	Inward position	Inward derived	Asymmetry	Asymmetry (percentage inward position)
United Kingdom	1,475.5	3,089.6	-1,614.1	-109.4
Luxembourg	3,813.0	2,397.0	1,416.0	37.1
Netherlands	4,397.6	3,019.9	1,377.7	31.3
China	2,534.5	1,210.8	1,323.7	52.2
Hong Kong	1,418.7	297.1	1,121.6	79.1
United States	3,765.1	4,289.4	-524.3	-13.9
Ireland	840.7	1,195.0	-354.4	-42.2
Singapore	984.3	633.5	350.8	35.6
Mauritius	283.3	71.4	211.9	74.8
Canada	603.6	793.5	-189.9	-31.5

Source: International Monetary Fund and Office for National Statistics

Notes

1. The International Monetary Fund (IMF) calculate the inward derived FDI values from the corresponding outward FDI statistics of the counterpart country which in this case is all other countries in the world.

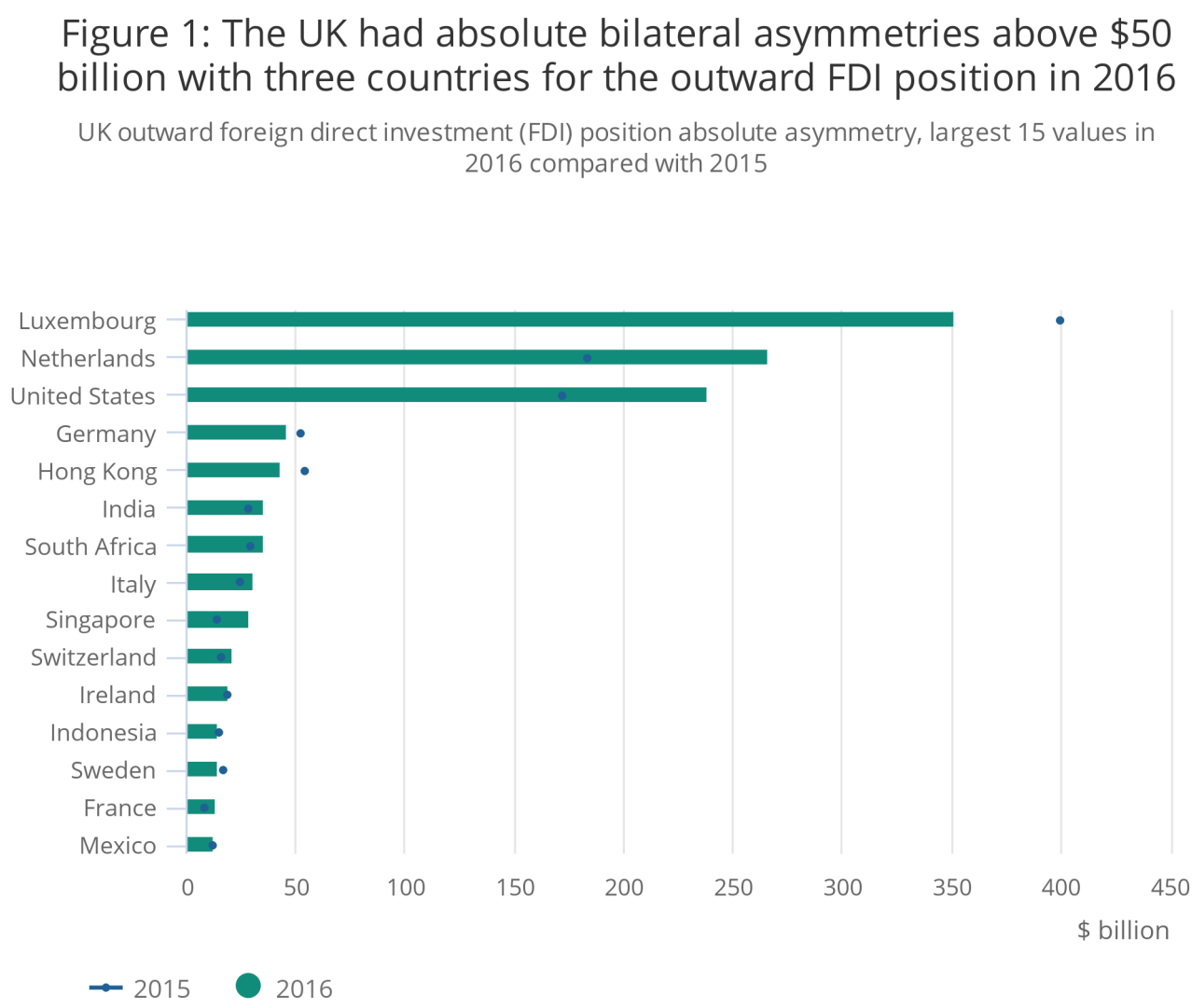
2. The asymmetry is the value of the inward position less the inward derived position (mirror statistic).

The UK’s bilateral FDI asymmetries were greatest with Luxembourg, the Netherlands and the US

In 2016, the UK’s absolute outward FDI asymmetries were greatest with Luxembourg, the Netherlands and the US. These were also the three countries that had higher total absolute asymmetries than the UK. Figure 1 presents the 15 largest absolute asymmetries for the UK outward FDI position with counterpart countries in 2016.

Figure 1: The UK had absolute bilateral asymmetries above $50 billion with three countries for the outward FDI position in 2016

UK outward foreign direct investment (FDI) position absolute asymmetry, largest 15 values in 2016 compared with 2015



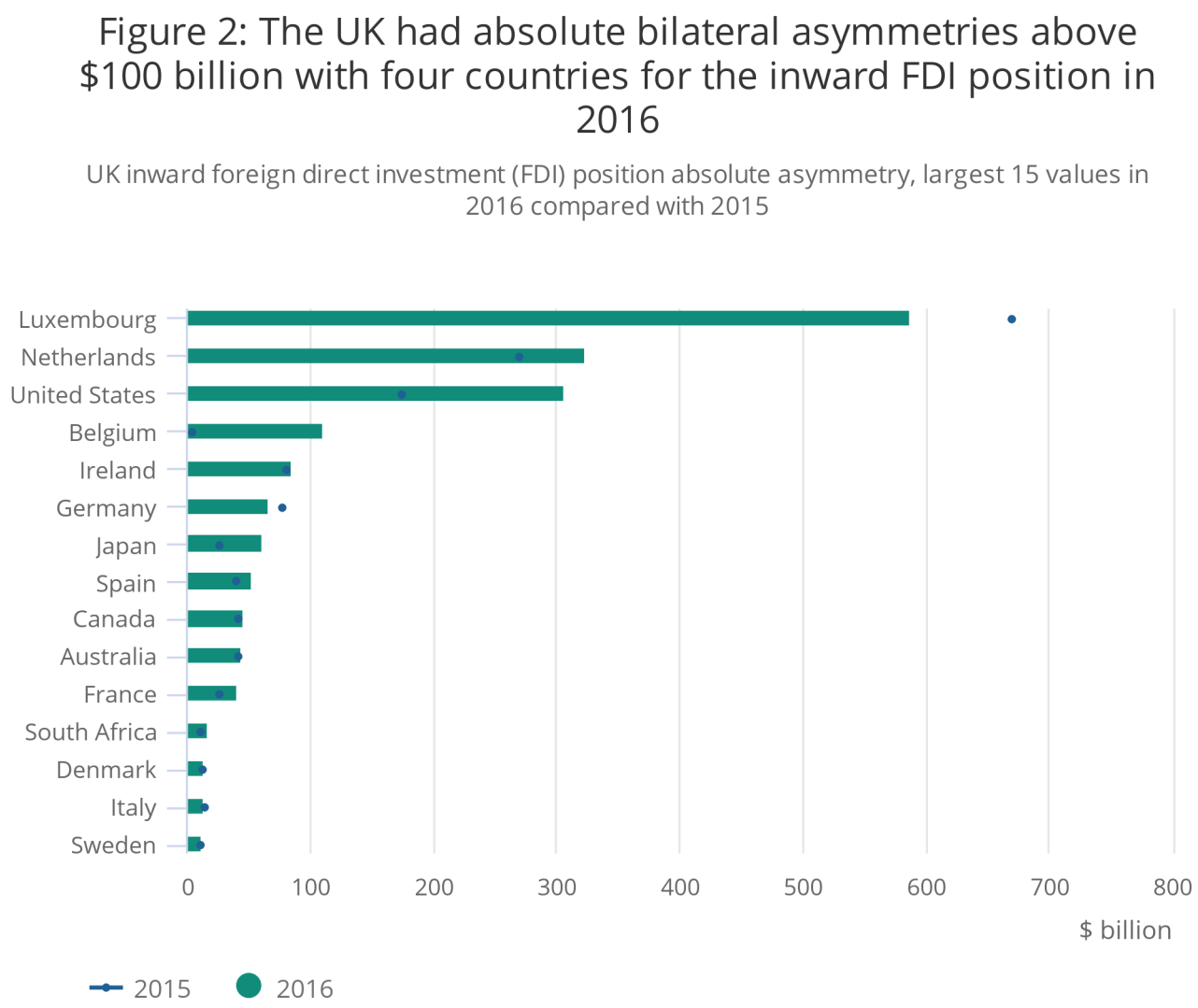
Source: International Monetary Fund – Coordinated Direct Investment Survey (CDIS)

The UK's absolute bilateral asymmetry with Luxembourg was $351.5 billion in 2016 using IMF mirror statistics. This was followed by the Netherlands ($266.4 billion) and the US ($238.6 billion). The bilateral FDI asymmetry with Luxembourg was lower in 2016 than in 2015 but higher with the Netherlands and the US. The increased asymmetries for these two countries saw the proportion of the UK's total absolute asymmetry from these three countries increase as well, from 62.7% in 2015 to 65.0% in 2016. This does not mean that UK FDI statistics have become less accurate in 2016 compared with 2015. Instead, this is linked to the differences in information and methods that the UK has used to compile these statistics relative to that used in other countries' mirror statistics.

A similar picture emerges for asymmetries on UK inward FDI positions in 2016 (Figure 2). Once again, the UK had the largest absolute FDI asymmetries with Luxembourg ($587.1 billion), the Netherlands ($323.3 billion) and the US ($307.0 billion). The 2016 asymmetry with Luxembourg was lower than in 2015, whereas that with the Netherlands and the US were both higher. The bilateral asymmetry with Belgium also increased from $3.7 billion in 2015 to $111.4 billion in 2016. These four were the only countries for which the inward absolute asymmetry was above $100 billion and alone accounted for 72.0% of the UK's total absolute inward FDI asymmetry in 2016.

Figure 2: The UK had absolute bilateral asymmetries above $100 billion with four countries for the inward FDI position in 2016

UK inward foreign direct investment (FDI) position absolute asymmetry, largest 15 values in 2016 compared with 2015



Source: International Monetary Fund – Coordinated Direct Investment Survey (CDIS)

Notes for: Asymmetries in foreign direct investment statistics

1. From the Co-ordinated Direct Investment Survey (CDIS) database.

4 . Insights from exchanging microdata with international partners

The UK worked closely with Luxembourg, the Netherlands, Germany and Belgium to investigate the reasons for bilateral asymmetries in foreign direct investment (FDI) positions for our first article. This collaboration has continued to also include Italy and Spain. We found that the reasons contributing most to UK FDI asymmetries were different across partner countries and between years.

Eurostat's FDI Network enables the secure exchange of microdata between central banks and National Statistical Institutes (NSIs) in the EU solely for statistical purposes. EU member states are required to share information with the relevant counterpart country on cross-border direct investment positions above €3 billion. Our approach took this a step further by systematically reviewing the FDI positions of the 20 companies with the highest values of FDI with the UK reported by other countries. We received some equivalent microdata in return.

The distribution of UK FDI suggests that the largest companies account for a disproportionate amount of FDI stocks and could also generate the greatest value of FDI asymmetries. More information on the distribution of FDI positions can be found in UK FDI, trends and analysis (distribution): February 2020.

Our approach uses the microdata from each partner country and compares these with the UK results for the same companies. Therefore, we can only see the mirror microdata for the enterprises with the highest value FDI positions. The matching exercise looks for each of these companies in the entire UK FDI population, including for both directions (inward and outward). The results from comparing these top 20 outward investors to the UK and top 20 inward investors from the UK of each partner country are summarised in the rest of this section.

The results of the microdata comparisons can be grouped into six broad categories

The microdata matching presented in this section are completed from a UK perspective. This research showed six broad reasons that highlighted from where bilateral FDI asymmetries were generated among the 20 largest FDI companies for each counterpart country.

No affiliate in UK FDI population

No affiliate in UK FDI population refers to companies that are not present in the UK FDI population but have an affiliate reported by the partner country. For outward FDI, the UK parent company would have overseas affiliates in other countries but not the one for which we are comparing microdata.

A similar situation can exist for inward FDI, where we cannot match the affiliates of the overseas parent company for which we are comparing microdata in the UK population. In both cases, the UK value is zero, leading to a negative FDI asymmetry.

Sampled and matched

Sampled and matched refers to companies that have been matched to the relevant UK population and that were sampled in 2016. The asymmetry here is the difference between the UK sample results and those for the same company in the partner country microdata. A positive asymmetry indicates that the FDI position reported in the UK survey was higher than that from our partner country and the other way around for a negative asymmetry.

Unsampled and matched

The UK does not survey every company in the outward and inward FDI populations. Therefore, we only have detailed results for the proportion of the population that were sampled. FDI values for the remaining companies are estimated using the results from sampled companies. Any company sampled that does not respond to the survey in time has their results imputed from their previous returns. Likewise, we estimate FDI values for unsampled companies using the results of similar businesses that have been sampled.

Therefore, these companies are present in both the UK and partner country populations, but the difference in values stems from the UK's imputed or estimated results. A positive value indicates that the UK's value for that company was higher than that recorded by our partner country for the same company and the other way around for negative.

Unmatched for 2016, matched in different years

Company structures can change over time, and so the FDI population alters to reflect these changes. However, there can be differences in when these changes appear in the FDI population relative to our partner countries.

The unmatched for 2016, matched in different years category is used when we cannot find the precise outward (UK parent and overseas affiliate) or inward (UK affiliate with overseas parent) relationship in 2016 but that relationship is present in other years. In this case, the asymmetry is negative because the FDI position for the UK is zero.

Unmatched but present in the other population

While the UK has two separate populations for outward and inward FDI, there are a number of companies that have both inward and outward links. These can be both UK parent companies controlling other direct investments in the UK through overseas subsidiaries or UK companies that are in a chain of control with both foreign parent and affiliate companies.

The asymmetry here stems from only one of these relationships being present. In this case, it is a negative asymmetry because the UK value is zero.

Unmatched

Unmatched refers to companies where the precise FDI relationship reported by our partner country cannot be identified in the relevant UK population. The UK records FDI results consolidated at the enterprise group level. Therefore, several large legal units in our partner country's FDI population might not appear in the UK population as these are consolidated with other affiliates in the UK's results. In this case, the UK's value is zero, creating a negative FDI asymmetry.

The reasons for the inward FDI asymmetry with Germany were different in 2016 compared with 2015 but more similar for the outward asymmetry

Asymmetries in UK FDI statistics with Germany were negative in 2015 and 2016, albeit to a much smaller extent than those with the Netherlands, Luxembourg and the US. Our previous research comparing microdata for 2015 found that 43.0% of the asymmetry comparing the top 20 outward direct investors from the UK to Germany was from differences in sampled company results. These results are included in Table 3, along with new results for 2016. This shows a slightly lower proportion (40.3%) of the total outward asymmetry from sampled and matched companies in 2016 compared with 2015.

In both years, companies appearing only in the other UK FDI population accounted for the second highest percentage as well. It was slightly higher for UK outward FDI in 2016 at 26.8% than in 2015 at 22.0%. A further 16.8% of the UK outward asymmetry related to companies in the German inward FDI population but with no German links in the UK outward population.

Table 3: Reasons for FDI asymmetries with Germany among the top 20 outward and inward investors by counterpart FDI position value, 2015 and 2016, percentage of the top 20 asymmetry

	2015		2016	
	Outward	Inward	Outward	Inward
Overall asymmetry (UK less German value)	Negative	Negative	Negative	Negative
Reason:				
no German affiliate in UK FDI population	13.7	2.1	16.8	0.0
sampled & matched	43.0	-5.7	40.3	-10.6
un-sampled & matched	3.0	11.4	4.3	42.1
un-matched in year, matched in different year(s)	14.8	34.3	4.4	2.1
un-matched but present in the other population	22.0	33.5	26.8	27.7
un-matched	3.4	13.1	7.2	17.6

Source: Office for National Statistics – Bilateral asymmetries in UK foreign direct investment statistics

Notes

1. If the overall asymmetry is negative then this means that the value of the foreign direct investment (FDI) position of the top 20 companies of the other country was higher than that for the same companies in the UK FDI population.

2. Negative percentages imply a movement in the opposite direction to the overall asymmetry. Therefore, a negative proportion of a negative overall asymmetry indicates a positive value for the UK, or the UK FDI position for those companies was higher than that reported by the counterpart country.

3. These percentages are calculated for the asymmetry among the top 20 German companies with links to the UK and not the total value of the bilateral asymmetry.

4. Percentages may not sum to 100 because of negative percentages and rounding.

The reasons for the UK inward FDI asymmetry among the 20 largest FDI companies were different in 2016 compared with 2015. Companies that were unsampled but matched to the German microdata accounted for 42.1% of the asymmetry in 2016 compared with 11.4% in 2015. The differences related to companies appearing in the other population had the second highest proportion in 2016, accounting for 27.7% of the top 20 asymmetry compared with 33.5% in 2015. The change between these two years for matching in different years fell by much more, from 34.3% in 2015 to 2.1% in 2016.

Where companies were matched and sampled, the UK reported a greater difference in survey values compared with Germany among the top 20 largest inward investors in the UK. Differences in survey responses contributed negative 5.7% to the negative asymmetry in 2015, implying that UK survey values for FDI positions were higher than those reported by the same companies to Germany. This difference increased in 2016, accounting for negative 10.6% of the asymmetry.

Some of these differences between 2015 and 2016 will be reflecting composition effects of the top 20 largest companies in both the UK and German FDI populations as well as differences in sampling and response rates. Furthermore, any corporate changes that took place between these two years might not be reflected in the UK and German populations at the same time. Yet, it is interesting to note that the reasons for the difference among the 20 largest companies was more stable for outward FDI to Germany than inward FDI from Germany. Differences in survey returns accounted for the highest proportion of the UK outward asymmetry in 2015 and 2016. By contrast, unsampled companies accounted for the highest proportion of the UK inward asymmetry in 2016 compared with companies that were unmatched in 2015 but were matched in different years.

There were marked differences in the reasons contributing the most to the asymmetry between UK and Spanish FDI statistics

Bilateral asymmetries in FDI positions with Spain were also bigger for inward FDI to the UK from Spain than for UK outward FDI to Spain for 2015 and 2016. Spain had the UK's eighth-largest inward FDI absolute asymmetry in both years, with actual values of negative $39.8 billion in 2015 and negative $52.8 billion in 2016. By contrast, the UK's outward FDI asymmetry with Spain was positive $5.8 billion in 2015 and negative $0.4 billion in 2016; in absolute terms, Spain had the UK's 26th and 52nd highest absolute outward asymmetries in those years respectively. This provides an opportunity to explore the differences among the top 20 UK–Spanish FDI companies where the asymmetries are different depending upon the direction.

Even though the overall asymmetry with Spain for outward FDI was positive and close to zero in 2015 and 2016, the asymmetry among the top 20 largest FDI companies by position value was negative in both years and both directions (Table 4). This indicates that for outward FDI, the negative asymmetry among the larger companies is offset by positive bilateral differences among the smaller companies in the UK population compared with the Spanish population. Furthermore, for outward FDI, sampled and matched companies accounted for the majority of the asymmetry (94.3%) in 2015 and more than half (51.9%) in 2016. Unmatched companies accounted for a further 37.1% of the difference among the top 20 UK outward investors in 2016.

Table 4: Reasons for FDI asymmetries with Spain among the top 20 outward and inward investors by counterpart FDI position value, 2015 and 2016, percentage of the top 20 asymmetry

	2015		2016	
	Outward	**Inward**	**Outward**	**Inward**
Overall asymmetry (UK less Spanish value)	Negative	Negative	Negative	Negative
Reason:				
no Spanish affiliate in UK FDI population	0.0	0.0	-9.7	24.3
sampled & matched	94.3	22.2	51.9	-1.1
un-sampled & matched	0.0	37.8	0.4	0.0
un-matched in year, matched in different year(s)	5.7	9.5	0.0	31.9
un-matched but present in the other population	0.0	3.7	-0.9	2.6
un-matched	0.0	26.8	37.1	40.2

Source: Office for National Statistics – Bilateral asymmetries in UK foreign direct investment statistics

Notes

1. If the overall asymmetry is negative then this means that the value of the foreign direct investment (FDI) position of the top 20 companies of the other country was higher than that for the same companies in the UK FDI population.

2. Negative percentages imply a movement in the opposite direction to the overall asymmetry. Therefore, a negative proportion of a negative overall asymmetry indicates a positive value for the UK, or the UK FDI position for those companies was higher than that reported by the counterpart country.

3. These percentages are calculated for the asymmetry among the top 20 Spanish companies with links to the UK and not the total value of the bilateral asymmetry.

4. Percentages may not sum to 100 because of negative percentages and rounding.

By contrast, the reasons behind the UK's inward FDI asymmetry with Spain were different in 2015 compared with 2016. For 2015, the biggest difference was from companies that were matched in the UK population but not sampled (37.8%). In this case, these differences in values are from UK methods to estimate these values compared with Spanish results. This was followed by unmatched companies, accounting for a further 26.8% of the inward FDI asymmetry. On the other hand, it was the unmatched companies that contributed to the greatest asymmetry among the top 20 Spanish inward investors in 2016, with 40.2%. A further 31.9% of that difference then came from companies that were not present in the UK population in 2016 but were found in other years.

Another result of this analysis highlighted the role of monetary financial institutions (MFIs) in these bilateral FDI asymmetries between the UK and Spain. The FDI of banks between both countries had higher values in Spain's populations than in other countries. The Bank of England collects information on the cross-border investments of UK MFIs, which for FDI are added to our survey results. In Spain, the Banco de España collects all FDI data to compile their statistics. A future stage of this research into FDI asymmetries could explore the bank results in more detail and for Spain in particular.

The reason for FDI asymmetries in 2016 with Italy were concentrated in one or two reasons

The UK's FDI asymmetries with Italy in 2016 were bigger for UK outward than for UK inward FDI. The outward FDI asymmetry was negative $30.8 billion in 2016 compared with negative $13.3 billion for inward. These differences are also shown in the ranking of the UK's absolute asymmetry with Italy between these two directions: 8th highest of the outward and 14th highest for inward. As with most of the other countries with whom we have exchanged microdata, the asymmetries of the 20 largest UK–Italian direct investors were negative, showing that these companies had higher values in the Italian mirror data than we have on the UK side.

In both directions, it was companies in the Italian populations with the UK but not in the UK populations that accounted for the greatest differences among the top 20 largest investors by FDI position values. These differences accounted for nearly half (48.6%) of the top 20 asymmetry for UK outward FDI to Italy and almost three-quarters (74.1%) for Italian direct investors in the UK, as shown in Table 5. The second-largest differences in both directions then came from matched companies. For outward FDI, these were companies that were not sampled and so have estimated values in the UK population, contributing 35.3% of the top 20 asymmetry. It was differences in sampled returns that gave the second-highest asymmetry (12.6%) for UK inward FDI with Italy in 2016.

Table 5: Reasons for FDI asymmetries with Italy among the top 20 outward and inward investors by counterpart FDI position value, 2016, percentage of the top 20 asymmetry

	Outward	Inward
Overall asymmetry (UK less Italian value)	Negative	Negative
Reason:		
no Italian affiliate in UK FDI population	48.6	74.1
sampled & matched	-7.5	12.6
unsampled & matched	35.3	10.3
unmatched for 2016, matched in different year(s)	0.0	0.0
unmatched but present in the other population	5.1	0.0
unmatched	3.5	3.1

Source: Office for National Statistics – Bilateral asymmetries in UK foreign direct investment statistics

Notes

1. If the overall asymmetry is negative then this means that the value of the foreign direct investment (FDI) position of the top 20 companies of the other country was higher than that for the same companies in the UK FDI population.

2. Negative percentages imply a movement in the opposite direction to the overall asymmetry. Therefore, a negative proportion of a negative overall asymmetry indicates a positive value for the UK, or the UK FDI position for those companies was higher than that reported by the counterpart country.

3. These percentages are calculated for the asymmetry among the top 20 Italian companies with links to the UK and not the total value of the bilateral asymmetry.

4. Percentages may not sum to 100 because of negative percentages and rounding.

5 . Feedback from partner countries reconciling our FDI microdata with their FDI populations

This collaboration with other European countries has seen us exchange UK microdata on the 20 largest foreign direct investment (FDI) companies at the same time as receiving equivalent information from our partners. The UK has also shared some of the reconciled files over the FDI Network and received equivalent analyses as well. At the time of writing this article, we had received our FDI microdata reconciled against the respective populations of Italy, Luxembourg and Spain.

Other countries found similar results to the UK in this reconciliation exercise. There are some companies that appear in the UK populations but not in their own. Likewise, there can also be some large differences in the values for matched companies in the respective populations. Some of this could be from the UK reporting consolidated results for each company by industry and country compared with any counterparts that record unconsolidated results. Therefore, each UK parent company’s operation in their country should be included together rather than just the affiliate names on our survey. This could explain some examples where we report a negative FDI asymmetry with a partner country and they also report a negative asymmetry for the same direction with us.

Looking at the results in more detail also showed that in some cases, the differences can be relatively small among the top 20 UK investors. For example, Spain found that the differences in their outward FDI results for the UK's 7th to 20th highest-value inward investors had absolute asymmetries within €100 million in 2014 and 2016. This applied to the top 10 to 20 UK inward investors from Spain in 2015. By contrast, the absolute asymmetries for all UK outward investors in Spain compared with Spain's results for those companies were below €1 billion in 2014 and then below that value for all except two and three companies in 2015 and 2016 respectively.

The results returned to the UK show that there are common reasons for the asymmetries among the top 20 bilateral direct investors. Furthermore, the asymmetries themselves can be dominated by a few companies, with UK results more similar to those recorded in counterpart countries. However, the different approach of the UK, recording consolidated results by country and industry, can make this reconciliation more difficult to interpret.

6 . Asymmetry indicators for FDI microdata

The European Commission and European Central Bank (ECB) have been co-ordinating efforts to understand bilateral asymmetries in foreign direct investment (FDI) statistics between member states. Part of this approach has seen measures of quality developed to quantify this aspect of asymmetries. The two measures used for this article are:

- Internal Country Geographical Quality (ICGQ): takes account of the inward and outward FDI asymmetry for the reporting country
- External Country Geographical Quality (XCGQ): compares differences between the totals of the reporting compared with counterpart mirror statistics

For both measures, the results lie between zero and one; a value of zero is "optimal". European efforts have assessed bilateral asymmetries in total FDI earnings statistics and components. However, these indicators can also be applied to FDI positions. We used the ICQG and XCGQ indicators with our reconciliation of company-level microdata from partner countries compared with the results for the same companies in our FDI populations (Table 6). There is also a third indicator for relevance (RELV) to the overall asymmetry that could be used. These returned values greater than one in some cases when applied to microdata, which probably reflects that we took the top 20 companies from our counterparts to be the whole population.

Table 6: Quality indicators comparing other countries' 20 highest value inward and outward direct investors with the UK population, 2015 and 2016

	2015				2016			
	All 20 companies		Excluding companies not in the UK FDI population		All 20 companies		Excluding companies not in the UK FDI population	
	ICGQ	XCGQ	ICGQ	XCGQ	ICGQ	XCGQ	ICGQ	XCGQ
Belgium	0.45	0.44	0.21	0.20	-	-	-	-
Germany	0.65	0.57	0.15	0.09	0.71	0.53	0.23	0.10
Italy	-	-	-	-	0.81	0.72	0.19	0.13
Luxembourg	0.80	0.80	0.11	0.11	-	-	-	-
Netherlands	0.55	0.29	0.15	0.08	-	-	-	-
Spain	0.72	0.49	0.52	0.30	0.75	0.60	0.06	0.03

Source: Office for National Statistics – Bilateral asymmetries in UK foreign direct investment statistics

Notes

1. The weight used in all calculations was 0.5; this gives equal weight to bilateral asymmetries for inward and outward foreign direct investment (FDI) positions.

2. ICGQ is the Internal Country Geographical Quality indicator; XCGQ is the External Country Geographical Quality indicator.

3. Values lie between zero and one, with zero being “optimal”.

Most of the internal quality (ICGQ) indicators for all 20 companies in our counterpart countries’ FDI populations with the UK were greater than 0.50. This suggests that there are some large asymmetries between these companies in the respective FDI populations. The highest values were for Italy in 2016 (0.81), Luxembourg in 2015 (0.80) and Spain in 2016 (0.75). The majority of the other internal indicators were between 0.50 and 0.75 with the exception of Belgium in 2015, which was 0.45. This indicates that the FDI asymmetries for UK FDI statistics with Belgium were generally smaller per company compared with those asymmetries for Italy.

In all cases, the external indicator (XCGQ) was lower than the internal (ICGQ) with the exception of Luxembourg in 2015. In some cases, the differences between these two indicators were large. For example, asymmetries with the Netherlands in 2015 had an external value of 0.29 compared with 0.55 for internal for all 20 companies. In contrast, the internal and external indicators for Belgium were very similar in 2015 (0.45 and 0.44 respectively).

These differences suggest slightly different reasons for the asymmetries. Each asymmetry can either be positive or negative. Positive results show a higher value in the UK FDI population for that company than in the counterpart’s mirror results; negatives indicate a lower value for the UK compared with the mirror result. The internal indicator looks at the size of all asymmetries, whereas the external also takes account for the direction of the asymmetry too. So, with the results for the Netherlands, there were results where the UK had higher positive asymmetries that were offset by negative asymmetries, compared with Belgium where those positive asymmetries were of a lower value or less common; the majority of values in the Luxembourg mirror results were higher than the UK results for those companies, making the two indicators the same.

It was also possible to calculate these indicators excluding the companies that were not present in the UK FDI population but were reported by a counterpart country for links to the UK. This removes the effect of companies not in the UK population from these indicators. In most cases, both quality indicators are below 0.50, ranging between 0.03 (external with Spain, 2016) and 0.52 (internal with Spain, 2015). This captures the parts of these bilateral FDI asymmetries that stem from differences in compilation methods. This includes from estimated or imputed UK results or in differences reported by companies in our survey results compared with these counterpart countries. This also ultimately underlines the role that differences between the UK FDI populations plays in UK FDI asymmetries.

7 . Future developments

The UK will continue to engage in international discussions to develop our knowledge of the potential causes of bilateral asymmetries in foreign direct investment (FDI) statistics. We will also continue to collaborate with other countries wherever possible to deepen our understanding of how the UK FDI population and results compare with those of our main counterparts.

We published a development plan for FDI statistics in July 2019. It outlined how we planned to transform FDI statistics. This included reviewing the existing population frame, data collection processes and results systems. This forms part of our FDI Transformation Programme. Over the past year, we have been exploring how we collect information on FDI from companies. We have procured a dataset from Bureau van Dijk's ORBIS database, producing our first experimental insights in July 2020. We are also developing the FDI Survey to consider adding new questions that would provide more detail on FDI involving UK companies.

8 . Data sources and quality

UK statistics on foreign direct investment (FDI) are compiled from data collected in our annual FDI Survey. The latest year for which detailed FDI statistics are available is 2018. We mainly use information for 2015 and 2016 since these were the latest years for which complete FDI statistics were available at the time we started this research and exchanged microdata. More information on UK FDI statistics and methods can be found in the FDI QMI.

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9 . Related links

Foreign direct investment involving UK companies: 2018
Bulletin | Released 3 December 2019
Investment of UK companies abroad (outward) and foreign companies into the UK (inward), including investment flows, positions and earnings, by country, component and industry.

UK foreign direct investment, trends and analysis: August 2020
Article | Released 3 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.

Developing foreign direct investment statistics: 2019
Article | Released 29 July 2019
An overview of our progress and priorities for developing FDI statistics from 2019.

Using synthetic indicators to assess the quality of macroeconomic statistics via mirror data
Statistics paper | Released March 2020
European Central Bank (ECB) statistical paper describing three synthetic indicators that have been developed with a view to assessing whole groups of countries. In the specific context of an economic union' s external account, they assess the quality of geographic breakdowns by country and the contribution that an individual country makes to the aggregate asymmetry for that group of countries. Those indicators are applied in the context of euro area FDI statistics.