

Compendium

The UK's Balance of Payments: tackling the global measurement challenges

The UK's Balance of Payments and emerging trends and challenges faced by statisticians when measuring cross-border activity.

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1 . Introduction

The UK's Balance of Payments records a country's economic transactions with the rest of the world, which has received much attention of late by economists and policy-makers. In recent years, the UK current account deficit – the extent to which the UK is borrowing from the rest of the world – has widened to levels that are high by historical and international standards. This has raised concerns around whether the UK can rely on record high levels of external financing to help fund its domestic expenditure – the reliance on the so-called “kindness of strangers”.

While the prevailing economic conditions are very different to today, the Lawson Boom of the late 1980s offers some insights on how unsustainable levels of borrowing can pose risks for the real economy and financial stability. That period was characterised by a rapid economic expansion, fuelled in part by tax cuts and rising house prices. This led to an increase in imports as domestic producers could not meet this increase in demand. However, this boom proved to be unsustainable with the economy overheating, followed by a sharp adjustment, which led to the UK entering a recession in the early 1990s.

These concerns have been further heightened by the uncertainty over the future of the UK's trading arrangements. It has been commented that, in periods of increased uncertainty, foreign investors may be less willing to invest in the UK, and if this were to happen this could potentially lead to a “sharp fall in sterling, bringing about a more abrupt demand-led narrowing of the current account deficit” (see [Office for Budget Responsibility, 2018 \(PDF, 2.5MB\)](#) for more information). These risks to the economic outlook help explain why the UK's Balance of Payments continues to be monitored closely by policymakers.

The balance of payments has also received increased coverage from a global perspective in response to the recent increase in global imbalances, as highlighted in the latest [External Sector Report](#) by the International Monetary Fund. Excessive external imbalances pose risks for individual countries and for the global economy – and recently, there has been increasing focus on how these may be creating trade tensions among countries, which reinforces the interest in understanding the dynamics in international transactions.

There has also been much interest in the statistics community, reflecting an increasing number of measurement challenges for national statistical institutes and central banks. This is in response to the increasingly globalised nature of economic activity, which has made it much more difficult to record and understand the true nature of new types of cross-border transactions, many of which pose new challenges to statisticians. These include:

- the proliferation of interlinkages in global value chains, whose economic value are not fully reflected in the traditional gross flows of trade
- the rise in capability and use of technology, enabling faster and more efficient transactions, including trade, which can in some cases be ordered or delivered electronically via the internet or other electronic means, which are less visible and harder to identify separately
- the presence of multinational enterprises, which has complicated the recording of economic activity on the basis of national boundaries and residence
- the increase in the number of complex corporate structures, whose financing structures have become much more difficult to record

These challenges do not imply that headline estimates in the Balance of Payments are being recorded incorrectly. The UK produces its estimates in line with the latest international guidelines, as set out in the latest [Balance of Payments Manual](#). However, some of these examples highlight a range of challenges for the measurement of official estimates in that a true reflection of the cross-border activity may not always be recorded. For example, this paper explains how "financial engineering" being undertaken by multinational enterprises impacts upon the recording of net investment income. There are also other topics that look to unpick the headline figures in the Balance of Payments, so that users are able to get a better handle on the nature of the trading relationships (for example, the development of Trade in Value Added estimates) for policy purposes. These currently rely on a number of assumptions and are designed to supplement, not replace, the official estimates of the Balance of Payments.

This points to the need for further research into how these developments may affect the way trade and foreign investment are recorded and analysed, providing new insights on the UK's external activity. Office for National Statistics (ONS) has made considerable strides in responding to these challenges, including the establishment of an International Business Unit and through working in conjunction with the international community to develop guidance, while further areas of research are in the pipeline.

2 . The balance of payments

It is helpful to provide an overview of the framework of the balance of payments, which records the economic transactions between the UK and the rest of the world, so that the measurement challenges can be better understood. In summary:

- the current account records international trade and cross-border income flows associated with the international ownership of financial assets, as well as current transfers (for example, foreign aid or remittances); if a country is running a current account deficit, it is said to be a net borrower from the rest of the world
- the financial account records the change of ownership in international financial assets between UK residents and the rest of the world; it shows how net borrowing is funded or net lending is invested by recording changes in the net acquisition of foreign assets and net incurrence of liabilities to the rest of the world, and so is seen as the counterpart to the current and capital accounts ^{1,2}
- the international investment position records the total stocks of foreign assets and liabilities held by a country; it is linked by a flow-stock relationship with the financial account, though revaluation effects (for example, fluctuations in exchange rates or equity markets) also play a role in driving movements in the stocks

Current account

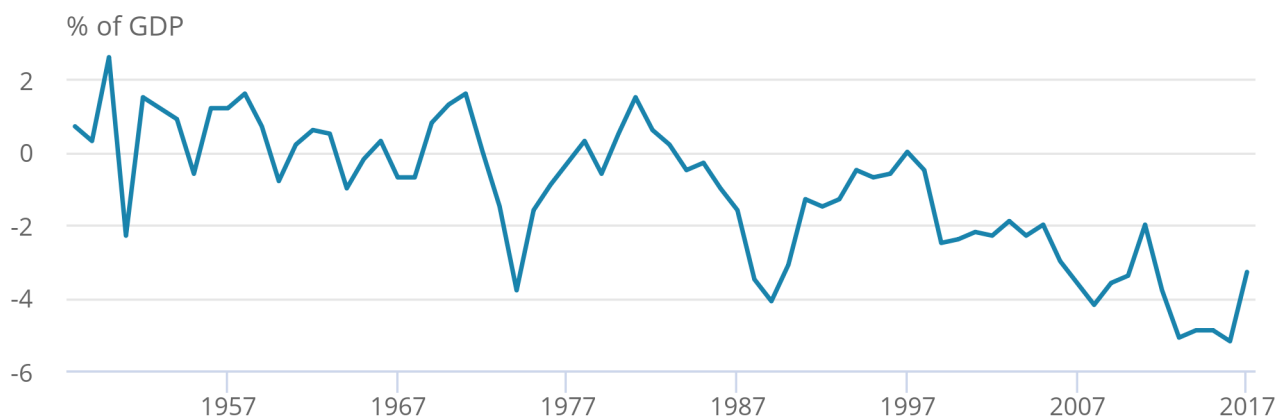
The UK has run a current account deficit for over 30 years. However, in recent years, there has been a marked widening in the UK current account deficit, peaking at a record high 5.2% of nominal gross domestic product (GDP) in 2016 (Figure 1). This has raised concerns around whether the UK can continue to run such a large current account deficit, as it requires the UK to be able to finance its net borrowing from the rest of the world – whether it be by attracting net inward capital flows, which might leave the UK potentially vulnerable to shifts in the preferences of foreign investors, and/or by selling its external assets.

Figure 1: The UK current account deficit is large by historical standards

1948 to 2017

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1948 to 2017



Source: Office for National Statistics

In contrast to previous episodes in the UK, the recent widening of the current account deficit has primarily been driven by movements in net investment income. This captures the income flows generated on cross-border investment, with the recent deterioration reflecting a fall in the net rate of return on its foreign investments. This is likely to have reflected the speed and timing of the recoveries in other countries relative to the UK over this period, such that movements in the rates of return on UK assets and liabilities have not been fully synchronised in recent years.

There has been much interest in the extent to which running a current account deficit matters. Running external deficits (and surpluses) can be beneficial for a country, provided it is in line with its economic fundamentals – for example, the demographics or levels of development of a country. Another way of looking at the current account is that it reflects the excess of national savings over national investment (see Annex). A country that runs a current account deficit (surplus) has a low (high) level of savings relative to its investment. The UK would be expected to be a net importer of financial capital, as there are likely to be a plethora of investment opportunities in the UK, which cannot be financed only by domestic savings. As such, a more efficient allocation of capital would see global savings help finance these investment opportunities, which could lead to faster economic growth.

Financial account

As the rest of the world is a net lender to the UK, this borrowing must be financed by net financial inflows. This can be achieved by increasing the foreign liabilities that are held by the rest of the world and/or disinvesting in previously-owned foreign assets. Solvency requires a country to be able to finance this external borrowing. The financial account records the net acquisition of financial assets and net incurrence of financial liabilities and is the counterpart to the current and capital accounts.

In the run-up to the financial crisis, the UK's net borrowing was financed through an increase in financial liabilities. There were large volumes of financial net inflows into the UK, while there were also similar sized flows out of the UK, as these gross flows of capital peaked at over 60% of GDP in 2007 (Figure 2).

These inflows were largely made up of “other” investments, which comprise loans and currency deposits, and tend to be more easily reversible. This is in contrast to longer-term investments, such as foreign direct investment and, to a lesser extent, portfolio investment. These flows are typically a more stable form of capital and so less subject to capital flight.

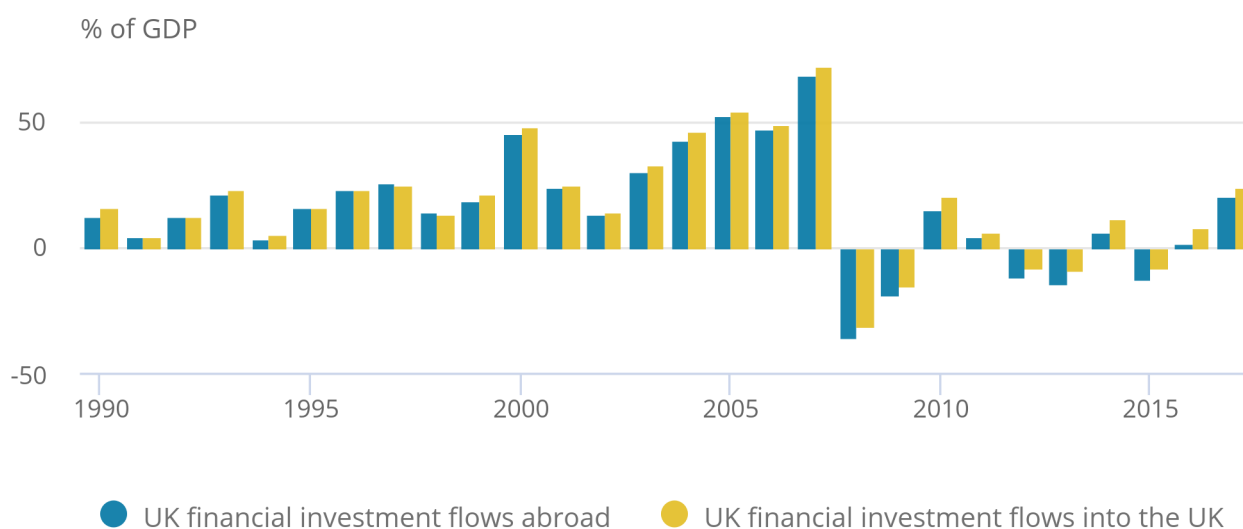
It can be seen that this financing position reversed in the immediate aftermath of the crisis, as there were withdrawals of financial capital, which likely reflected the heightened risk environment at the time. As such, the current account deficit was financed by UK investors selling more of their external assets than foreign investors selling their UK assets. This overall financing position then reversed between 2016 and 2017, resulting in an increase in the accumulation of financial liabilities, although the levels are much lower than in the period up to the financial crisis – the size of these capital inflows and outflows reached up to 25% in 2017. The latest [Financial Stability Report \(PDF, 6.8MB\)](#) highlights that there has been “mixed evidence as to investor appetite for UK assets since the EU referendum”.

Figure 2: Financial investment flows into and out of the UK peaked in the run-up to the financial crisis

1990 to 2017

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1990 to 2017



Source: Office for National Statistics

Net international investment position

While the financial account records international flows in the acquisition and disposals of financial assets, the stock positions are shown by the international investment position (IIP). The IIP provides a snapshot of the UK's external balance sheet at a specific point in time, which is linked by a flow-stock relationship with the financial account.

Reflecting the openness of the UK, as well as its role as a global financial centre, the UK has a large external balance sheet with its stock of foreign assets and liabilities over five times the size of GDP. The stock positions have increased markedly over the last 30 years, which is likely to reflect the period of financial liberalisation.

The change in the IIP not only reflects the accumulation of new assets and liabilities, but also the revaluation of existing ones – including the effects of currency and price changes, which capture changes in exchange rates and movements in bond and equity markets.

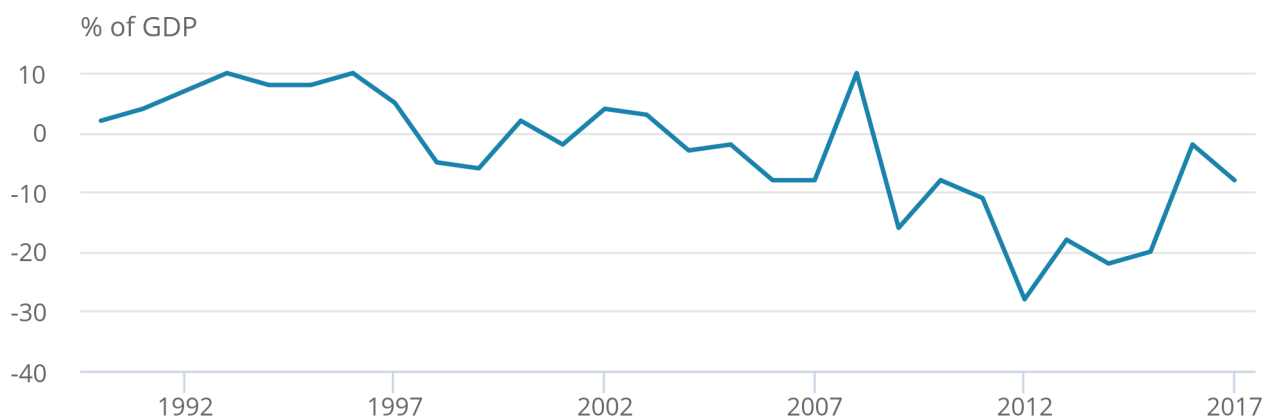
These revaluation effects impact upon the value rather than the underlying volume of assets. For example, there is a currency mismatch in the UK's balance sheet – its external assets have a relatively higher foreign currency denomination than its external liabilities – so there tends to be an improvement in the net asset position when there are large currency depreciations. This explains why there were marked improvements in the IIP in 2016 (Figure 3), with the latest estimates showing that the UK had a net liability position of 8.1% of nominal GDP at the end of 2017.

Figure 3: The recent improvement in the net international investment position reflects revaluation effects, driven by the fall in the sterling exchange rate

UK, 1990 to 2017

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UK, 1990 to 2017



Notes for: The balance of payments

1. The capital account also forms part of the balance of payments, comprising of several miscellaneous transactions. These record transactions in non-produced non-financial assets, as well as capital transfers such as debt forgiveness. As the capital account forms a very small part of the UK's international transactions, it is not discussed further.
2. In theory the capital and financial accounts should offset the current account, although in practice this is rarely the case for all countries due to errors and omissions.

3 . Global measurement challenges

In many ways the world is a much smaller place than it was just 30 years ago. It is now easier to move goods and services around the globe either for trade or as part of a wider production process. Large multi-national enterprises (MNEs) benefit from operating across national boundaries. As such the old world that had more distinct national economic boundaries and more easily recognised resident firms is diminishing. This globalisation presents a wide range of economic opportunities, but it also creates measurement challenges for statisticians.

Production is now more easily fragmented across countries in "global value chains" (GVC), where several countries may be involved in the production chain. GVCs are becoming more common and their presence requires new ways to understand and analyse trade flows around the globe.

The rise in capability and use of technology across the world has enabled faster and more efficient transactions, including trade. This "digitalisation" has brought with it measurement challenges. Many services and some goods transactions are either ordered or delivered electronically via the internet or other electronic means. This can make this trade less visible and hence harder to record.

Cross-border activities such as sending goods abroad for processing, merchanting (where goods are bought and sold in third countries and never actually enter the country of the economic owner of the goods), and factory-less production (where the physical transformation of goods can be 100% outsourced to another company in the same or another country, but the resident firm owns the intellectual property used in the production process) are all practices that have grown as a result of globalisation.

The rise in capability and use of technology has also enabled faster and more efficient transactions, including trade. This "digitalisation" has brought with it further measurement challenges. Many transactions are either ordered or delivered electronically via the internet or other electronic means, which can make these trade flows less visible and hence harder to record.

The importance of foreign direct investment (FDI) has grown rapidly in recent decades and has therefore become an important indicator of a country's interconnectedness in an increasingly globalised world. However, this rapid pace of change and increasing complexity in corporate structures has posed further challenges in how to record such activity, particularly with a view to its implications for external sustainability.

Here is an overview of some of the statistical challenges that impact upon how we traditionally record and analyse the balance of payments, including some of the recent initiatives that have been undertaken in being able to provide further insight into the UK's relationship with the rest of the world.

Trade in Value-Added

The emergence of global value chains (GVCs) has led to an increase in the number of interlinkages in the production of final goods. Imported goods can be used in the production of other goods that are then exported, while exported goods can then be used as inputs in other countries' exports. Final goods produced all over the world are increasingly composed of intermediate inputs from various countries around the world – raw materials from one country, technology from another, labour input from another country and service delivery from yet another.

The import content of UK exports is known as "backward" or "upstream" participation, whereas the contribution of UK inputs in other countries' exports is known as "forward" or "downstream" participation.

The economic value of these interlinkages is not captured in the gross flows between residents and non-residents recorded in the balance of payments. However, the value added that is embodied in exports and imports can be particularly relevant for trade policy. While gross trade flows essentially attribute the geographical origin of the product to the location of the final stage of production, this is not a true reflection of how value is added through the international production process, so additional information is required. The development of trade in value added (TiVA), which builds on the concept of input-output tables, provides insight on the value added by each country in the production of goods and services, so that the impact of GVCs can be better recorded.

The Organisation for Economic Co-operation and Development (OECD) has led significant development in this area, including the production of a [TiVA database](#), recently updated to include projections for 2016, and also providing accompanying country notes for several countries, [including the UK](#).

In response to demand, we have commissioned work from the Economic Statistics Centre of Excellence to produce early estimates of TiVA for certain UK sectors. This project has delivered and published initial findings, including "The value added from Trade for Key Business and Financial Service Industries: Initial Estimates" ([Ebell, Pilkington, Rowe and Srinivasan, 2017](#)) and "Constructing estimates for exports, imports and value added from exports of the car industry and other manufacturing industries in the UK" ([Mion, 2018](#)).

We have also worked with experts at the University of Sussex, who have been carrying out research to form a clearer picture of the business characteristics and behaviours of traders and to develop further TiVA estimates.

We are working collaboratively to provide further estimates of TiVA for the UK in our ongoing developments.

Multinational enterprises

There are now more multinational enterprises (MNEs), for whom their country of residence, the country in which their assets are owned and from which capital services are derived may all be different and not easily determined. As such, "[intellectual property assets may be accounted for in one country, but provide capital services across affiliates abroad](#)" (PDF, 771KB). Additionally, MNEs involved in a production process may use intellectual property assets (for example, computer software) across borders and utilise new approaches to create value added such as toll processing.

This is a challenge for the national accounts, which look to record economic activity on the basis of national boundaries and residence. In the balance of payments, we estimate the economic ownership and transactions between the UK residents and non-residents to show the UK's financial position with the rest of the world either as a net borrower or net lender. However, it has become more of a challenge for national statistical institutes (NSIs) to determine where the economic activity of large MNEs is located.

As such, it has become more difficult for NSIs to identify the location of the economic ownership of assets of the capital services derived from their assets, as well as the wider partners in trade or foreign direct investment relationships. This is why we have established an International Business Unit and invested in analysis of MNEs and FDI relationships including ultimate parent companies, to better understand how MNEs operate and to improve how we record their economic activities. These developments are touched on a little later in this article and are the topic of a further article in this [Economic review](#).

FDI by the ultimate investing parent and ultimate host country

The emergence of global production networks and the incentives to minimise tax and regulatory burdens help explain why the financing structures of multinational enterprises has become more complex in recent years, in which these multinational corporations have investment chains spanning several borders. Official FDI statistics that use balance of payments concepts are based on the immediate counterpart country, which can incorporate investment chains spanning multiple economies. However, in analysing the residence of the investor, it is often the case that the ultimate investing company in some of the larger and more intricate multinational corporate structures is of more interest from a policy perspective.

For example, inward FDI may be channelled through financial centres, such as the Netherlands and Luxembourg. If an investor holds an affiliate indirectly in this manner, the inward FDI of the ultimate host country is attributed to the country of the financial centre – and not the country of the ultimate investor. This raises challenges when trying to understand who ultimately controls FDI in a country. FDI statistics by ultimate investing country (UIC) help establish the beneficiaries and risk-takers of such investments, while by ultimate host country (UHC) analyse where investments ultimately reach (Figure 4).

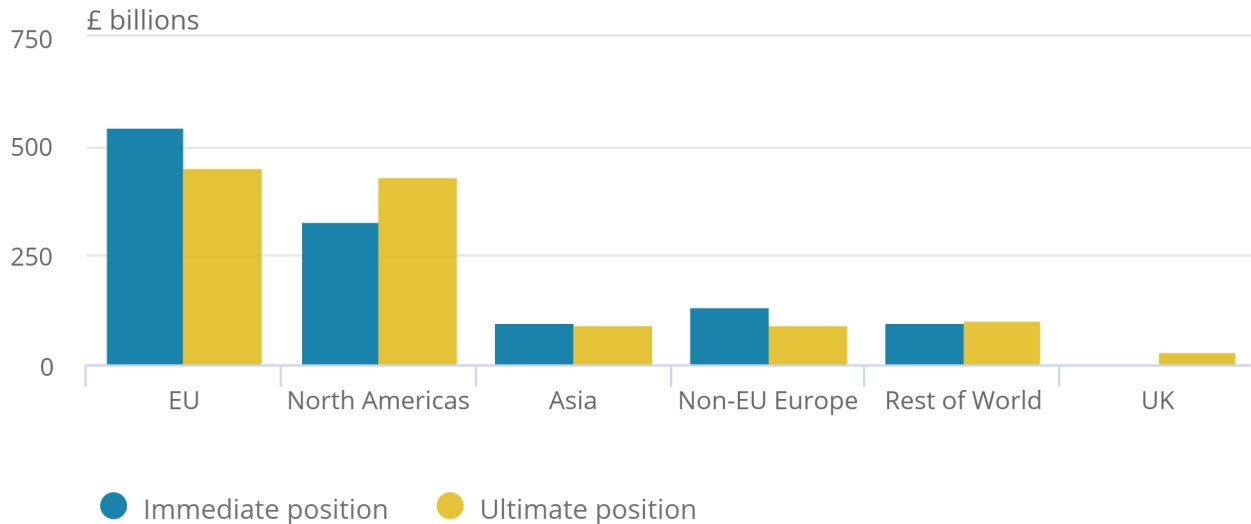
We have worked with international colleagues – particularly as part of the Eurostat Task Force on FDI – to share respective expertise and to develop new methods and guidance for developing these new statistics. We have used this useful engagement to develop a new methodology for producing FDI statistics by UIC, and continue to explore potential approaches for estimating FDI by UHC.

Figure 4: Inward foreign direct investment stocks according to the country of the ultimate and immediate parent country

UK, 2016

Figure 4: Inward foreign direct investment stocks according to the country of the ultimate and immediate parent country

UK, 2016



Source: Office for National Statistics

Notes:

1. Data featured in this chart were first released in an [analysis paper published July 2018](#).

Special purpose entities

A salient development in this area has been the increasing role special purpose entities (SPEs) have in cross-border corporate structures, which are utilised by multinationals to manage their access to capital markets, financial risks, and regulatory or tax burdens. The measurement of SPE activity is important for ensuring FDI statistics accurately capture financial flows and corporate structures, while the ability to isolate SPEs from these data is increasingly required by users who wish to analyse the true beneficiaries and risk-takers of cross-border investment in terms of both the countries and entities involved.

We use FDI surveys as the main source for producing UK FDI statistics; however, while these surveys help to identify whether foreign parents and subsidiaries are (non-resident) SPEs, they do not currently include questions for identifying resident SPEs. As a member of the International Monetary Fund's Task Force on SPEs, we have worked with other members to develop an international definition of a SPE. We are also utilising this definition to develop a decision tree for identifying resident SPEs in the UK's FDI statistics.

Financial engineering

The main reason for the recent widening in the UK current account deficit has been a fall in net FDI income. It has been proposed in a recent article by the National Institute of Economic and Social Research that “[financial engineering](#)” (PDF, 166KB) has played a role here, arising from a shift in a company’s headquarters to a foreign location for the purposes of tax-planning activities of multinational corporations. Such “engineering” affects recorded net investment income as profits are re-allocated to the foreign location, even though there has been no shift in the real cross-border activities of that company.

The article concludes that “substantial investments by national and international agencies in the gathering and analysis of more granular financial data are required if cross-border financial transactions and linkages are to be understood with any degree of accuracy”. In response, we produced firm-level analysis to provide [further insights into these cross-border financial linkages](#) to see whether financial engineering was taking place in the UK, concluding that there was little evidence that companies re-domiciling their headquarters overseas have been having an adverse effect on UK FDI statistics in recent years.

Modes of supply

For service economies such as the UK, international trade in services play an ever more important role in the UK’s transactions with the rest of the world. Trade in services statistics are by nature more challenging to produce, largely due to their intangible nature. It is relatively straightforward to measure the number of cars that are imported and exported through UK ports, but capturing the amount UK advertisers generate from providing services to overseas clients is much more challenging.

In addition, policy-makers are increasingly interested in how trade in services is conducted. This type of information is critical for understanding what barriers businesses face when wishing to trade, and assists policy-makers engaged in trade negotiations.

The World Trade Organisation’s General Agreement on Trade in Services (GATS) defines trade in services as being conducted through four modes:

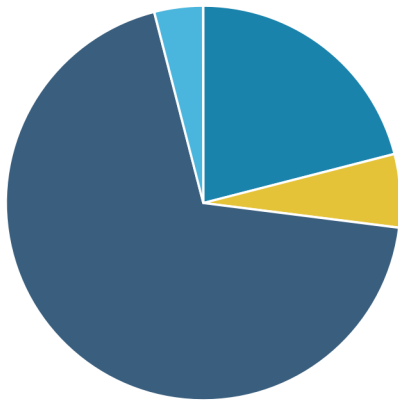
- Mode 1: Cross-border supply of services products, where both the supplier and consumer remain in their respective territories (for example, legal advice or financial services being supplied remotely via email or an online platform)
- Mode 2: Consumption of services products abroad, where the customer visits the supplier’s territory (for example, tourists travelling abroad)
- Mode 3: Commercial presence abroad, where a supplier sets up a commercial presence in another country to provide services to a new market (for example, a telecoms company establishing a foreign subsidiary to provide mobile phone services abroad)¹
- Mode 4: Provision of services abroad by natural persons, where personnel working for the supplier travel abroad to provide services to the customer (for example, the supplier sending an architect or business consultant to the customer’s site to provide services)

An important challenge is that while these concepts are familiar to statisticians and trade negotiators, they are generally not recorded by businesses in their accounts. As such, requesting businesses to provide detailed breakdowns of their exports and imports, by product, country and mode of supply is likely to be very burdensome, if even possible. Nevertheless, as part of various task forces, we have worked closely with international organisations and other countries to share understandings of user needs and potential solutions.

One approach that is readily available was developed by Eurostat in 2017, which apportioned trade in services products by mode of supply, based on guidance received from statistical experts from a number of countries (Figure 5).

Figure 5: EU-28 outward supply of services (experimental)

Figure 5: EU-28 outward supply of services (experimental)



Source: Eurostat

Notes:

1. Data featured in this chart were published in a [Eurostat working paper](#).
2. Modes of supply breakdowns presented here follow the World Trade Organisation's definition of Trade in Services as detailed in the General Agreement for Trade in Services (GATS). These definitions are broader than those used to report trade in services statistics in the balance of payments.

However, this is only illustrative in nature and the Eurostat method does not meet the requirements of many users of Office for National Statistics (ONS) trade statistics, many of whom have emphasised the need for UK-specific estimates collected from businesses.

In response, we have commissioned a project to investigate the feasibility of collecting data on modes of supply from businesses. The project first reviewed different countries' experiences of collecting this data, and engaged with businesses that conduct trade in services to better understand the data available to them. Based on this information, we explored the feasibility of asking businesses to provide estimates of trade that is conducted remotely (Mode 1) through adding new questions to the International Trade in Services (ITIS) survey, in line with a similar approach being considered by the USA's Bureau of Economic Analysis.

In September 2018, a sample of 100 businesses were selected to test the new survey questions for the ITIS survey. There was little change in the response rate amongst the pilot sample and most businesses were able to respond, so we decided to add the new questions to the annual ITIS survey for 2018 for 5,000 businesses who are known to engage in international trade in services. This larger sample will enable us to further test the quality of responses that are received, and to potentially produce new UK-specific estimates for trade in services by modes of supply through producing a hybrid method that combines results from the new survey questions with the Eurostat method. We hope to produce a methods article in summer 2019, including progress of the project so far and initial findings.

Greenfield FDI

There is increasing user desire to link FDI statistics to the national accounts concepts, such as capital investment². FDI statistics focus on financial relationships between affiliated businesses, capturing their equity positions, debt and cash injections. While some of these financial flows will fund investment in fixed capital – referred to as “greenfield FDI” – other flows are used to finance other expenditures such as mergers and acquisitions (M&A) activity and corporate restructures, which often dominate headline estimates. Furthermore, foreign-controlled businesses are unlikely to rely solely on financing from their parent company to invest, but can also utilise local financial markets – activity that is not captured in the balance of payments.

Several approaches have been discussed and shared internationally on how best to address this requirement, including breaking flows down by purpose, or by estimating the total domestic investment of foreign-owned businesses. We are continuing to engage in these international discussions and are considering the use of data-linking techniques, similar to those we utilise to produce experimental statistics that describe the contributions of businesses engaged in FDI to the UK economy.

Asymmetries

Trade and FDI asymmetries have been a global phenomenon for decades, which is where statistics produced by different countries on the same bilateral relationships are not equal. These stem from the fact that national statistical institutes (NSIs) produce statistics independently.

While international guidelines have helped harmonise concepts and methods, asymmetries remain due to many reasons including differences in the data sources, estimation methods, definitions and valuations methods. Further efforts are therefore required to enable statisticians to collaborate internationally to understand and address the main drivers behind asymmetries.

Asymmetries are a challenge as they result in multiple estimates being available to users for the same bilateral relationship. To understand the underlying issues, we are working with international partners to exchange information and data via Eurostat's FDI Network and through working closely with other European countries' institutions with which the UK has the largest FDI relationships.

The ambition of these efforts is to identify the main drivers of asymmetries, determine whether they are systematic and therefore likely to explain UK asymmetries with other countries, and to assess what steps can or should be taken to address these differences.

Likewise, we have delivered [wide-reaching analysis of the UK trade asymmetries](#), providing context and explaining some of the reasons behind the asymmetries. We focused initially on the USA and the Republic of Ireland, followed by further work expanding our international collaboration and analyses to include Germany, France, the Netherlands, Luxembourg and Belgium. These analyses have highlighted that not all countries are moving to revised international standards quite as fast as the UK.

Digital Trade

One of the main recommendations from the [Independent Review of UK Economic Statistics \(2016: PDF, 5.1MB\)](#) relates to the measurement of economic activity associated with the digital economy, where “the rapid and sustained rise in computing power, the digitisation of information and increased connectivity have together radically altered the way people conduct their lives today”, including how trade is conducted. Digitalisation encompasses a wide range of new applications of information technology but there is a distinct rise in user demand for a better understanding of the extent to which trade is facilitated by digitalisation.

The [International Monetary Fund \(IMF\)](#) explain that “digital trade includes cross-border transactions that are digitally ordered, platform-enabled, or digitally delivered”, which in theory, some of which is being picked up by our data sources and methods. However, it will be recorded with other trade flows, not as a distinct concept. It is the separate estimation and presentation of this digital trade that is required by users as well as potential improvements to its measurement.

We are engaged in international efforts, led by the [OECD](#), to provide a standard definition and improve the measurement of digital trade. We are working closely with our users to better understand the requirements and ultimately to develop initial estimates of digital trade as part of our future development.

Flow of funds

The financial crisis highlighted the need for more granular whom-to-whom information on international financial transactions, as “information about financing flows is central to understanding the evolution of assets and liabilities and thus the nature of the financial vulnerabilities” ([Independent Review of UK Economic Statistics, 2016 \(PDF, 5.1MB\)](#)). Whilst the financial account captures the changes in international ownership of financial assets and liabilities between the UK and the rest of the world, it does not provide granular whom-to-whom information on these financial transactions. Granular information on assets and liabilities, including counterparty information, is essential for the purposes of monitoring the risks to financial stability.

The purpose of the flow of funds is to capture all these lender-borrower relationships in the UK, including those with the rest of the world. In a joint initiative with the Bank of England, ONS is working on a fully integrated set of flow of funds statistics in the national accounts. This will provide much richer information on the financial flows taking place in the UK, capturing the inter-connectedness of the UK financial system and identify those parts of the economy that may be exposed to the build-up of financial vulnerabilities. Recent analysis by ONS showed [how the flow of funds can be analysed](#) to provide insights that could have been important during the build-up to the crisis, potentially giving early warning signs of a rise in financial instability.

Notes for: Global measurement challenges

1. While Mode 3 is recognised as trade in services by GATS, it is not included as part of trade in services in balance of payments due to the latter’s focus on residency rather than nationality of ownership.
2. FDI and domestic investment statistics are different conceptually, where FDI focuses on financial investment flows (equity, loans, and so on), whereas capital expenditure statistics focus on investment in non-financial assets (for example, dwelling, machinery, IP, and so on). While FDI may be used to fund new capital investment – or acquire existing capital through M&A – foreign-owned businesses can also raise finances externally through other means unrelated to FDI (portfolio investment, domestically-raised funds, and so on). These other sources may also be combined with FDI to fund capital investment. FDI therefore only records the financial relationship between a parent company and its subsidiary, rather than all the activities of the subsidiary. As such, headline FDI and business investment statistics cannot be considered as components of each other since the concepts that underpin each measurement are different.

4 . Conclusions

In recent years, the UK current account deficit has widened to levels that are high by historical and international standards. This has raised concerns around whether the UK can rely on high levels of external financing, which has further increased following the EU referendum. As such, there has been increasing attention paid to trends and developments in the UK's Balance of Payments.

However, the increasingly globalised nature of economic activity poses many challenges to how national statistical institutes (NSIs) measure economic activity.

The cross-border activities of people and businesses have resulted in international borders becoming increasingly blurred. This is particularly true in the case of multinationals, whose decisions, operations, value chains, trade, corporate structures, and economic ownership are rarely confined to a single economy. This requires statisticians to increase their efforts not only to ensure existing statistics are fit for purpose, but also to develop new ones that describe how cross-border transactions are conducted so that there is a deeper understanding of their true nature.

This has been coupled with the increasing user demand for improved and more detailed bilateral UK trade and investment statistics following the EU referendum, to help provide a better understanding of the UK's relationship with the rest of the world.

We have implemented an ambitious transformation programme, collaborating with data providers, analysts and users. This transformation is now delivering a wide range of outputs and insights that outstrips anything previously possible, which is helping improve our understanding of emerging trends and developments, including insights into some of the challenges covered here. We have also been involved in international collaboration, engaging with initiatives aimed at developing international guidance that address these new phenomena.

Examples include:

- Strong collaboration with HM Revenue and Customs (HMRC) and development of the data sources and methods that underpin our trade in services statistics have allowed us to dramatically increase the number of trade statistics we publish over the last two years, from around 1,000 to just over 100,000 series.
- we have provided innovative new tools for users to access and analyse the data – we now publish interactive maps that show 234 countries' trading relationships with the UK, broken down by 125 types of goods – which are updated each month
- we have delivered wide-reaching analysis of the UK trade asymmetries, providing context and explaining some of the reasons behind the asymmetries, which have highlighted cases where other countries are moving to revised international standards at a slower pace compared with the UK
- we have also collaborated with the academic community, demonstrating that UK trade in goods asymmetries are similar to those of other developed economies and to provide valuable information about the causes of our asymmetries; as this work progresses, we anticipate that we and other producers of these statistics may revise data as appropriate to begin to reduce the asymmetries
- we have recently produced fuller experimental estimates of trade in services, covering all industries, by type of service and country; these estimates cover the whole of the UK's services trade down to a very detailed level
- we have also used HMRC microdata on trade in goods to produce experimental estimates by industry to enable users not only to see what goods are exported, but what areas of the economy are involved in this trade

In addition, the increasing reach, dominance and complexity of multinationals raises challenges to how cross-border investment is measured. The increasingly complex corporate structures of multinationals and their use of financial centres often distorts the geographical breakdowns of FDI.

Such developments require new statistics on the ultimate ownership of investments and improved measures of special purpose entities and financial engineering. Furthermore, new statistics on the impacts of FDI on the real economy that go beyond the reporting of inter-company finances are increasingly sought by policy-makers. We have produced analysis in this space to further our understanding of these new trends, while remaining committed to further research in this area.

The topics covered in this article present just some of the challenges statisticians face today, whilst highlighting the reason why we continue to invest in developing our international trade and investment statistics. This is to ensure they continue to provide users with a reliable and comprehensive evidence base on which to assess the economy and develop policy.

We are delivering at pace against an ever-expanding demand, investing in a range of developments to help meet the new measurement challenges outlined in this article. Our transformation has already delivered data and analysis that are informing the debate and enabling better decisions, while we are looking to continue undertaking further research into these areas. We have set out some of these developments in this article, with further analysis included in other articles in this Economic review.

5 . Authors

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6 . Annex: Savings, investment and the current account

Gross domestic product (GDP) is a production concept that records output that is produced in a country. There are three ways to measure GDP: production, income, and expenditure. The expenditure concept is estimated as the sum of private consumption (C), investment (I), government consumption (G), investment (I) and net exports (X-M).

$$GDP = C + I + G + (X-M)$$

Gross national income (GNI) includes the final value of incomes flowing to UK-owned factors of production – irrespective of whether these are located in the UK or overseas. As such, it also records net income from abroad (NIFA). These capture the flow of income that is received on UK assets, net of income that is payable on UK liabilities.

$$GNI = GDP + NIFA$$

Savings (S) captures the difference between GNI and private and public consumption.

$$S = GNI - (C+G)$$

The current account records international trade, investment income and current transfers.

$$CA = (X-M) + NIFA$$

It is possible to re-arrange these national accounts identities, so that:

$$\text{GNI} = \text{C} + \text{I} + \text{G} + (\text{X}-\text{M}) + \text{NIFA}$$

$$\text{GNI} - (\text{C} + \text{G}) - \text{I} = (\text{X}-\text{M}) + \text{NIFA}$$

$$\text{S} - \text{I} = \text{CA}$$

This shows that the current account can be expressed in two ways:

- it is the differences between the value of exports and imports, covering trade, investment income and current transfers
- it is the differences between national savings and investment

Analysis of how much the UK is a net borrower from the rest of the world through the savings and investment relationship helps reinforce the concept that it is macroeconomic drivers that help explain movements in the current account.