

# *Leaving the EU: Implications for the UK financial services sector*

April 2016









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# 1 Key findings

- In March 2016, TheCityUK commissioned us to provide **an analysis of the potential economic impacts of a UK exit from the EU on the financial services (FS) sector**. This report builds on our previous report that was commissioned by the Confederation of British Industry (CBI) (referred to as the “PwC/CBI report” in this document).
- Whereas the PwC/CBI analysis assessed the potential impact of exit from the EU on the whole UK economy, **this report presents the impact on the FS sector, as a component of the UK economy-wide analysis**. In the short-term, the gross value added (GVA) – a measure of an industry sector’s contribution to the economy – of the FS sector declines by 5.7%-9.5% in 2020 under our exit scenarios, relative to the counterfactual (or base case) where the UK remains part of the EU. When expressed in 2015 values, this represents a reduction of around £7-12 billion. These impacts moderate over time, so that, FS GVA is 1.8%-4.0% lower in 2030 under our exit scenarios. This represents a reduction of around £2-5 billion, at 2015 values.
- **The UK FS sector grows more slowly under both exit scenarios than if the UK stays in.** Compared to 2015, real GVA in the FS sector would be 38% larger in the FTA scenario and 35% larger in the WTO scenario in 2030. It is still lower in overall size than in the counterfactual scenario where FS GVA grows by 41% over the same period.
- **We also estimate a reduction of 70,000-100,000 in UK FS employment** (number of people employed) in 2020 relative to the counterfactual. Employment gradually recovers in the long-term as the labour market adjusts, meaning that FS employment falls by around 10,000-30,000 in 2030.
- **We find that the sensitivity of the FS sector to both exit scenarios is greater than the UK economy as a whole.** In the short-term, FS sector GVA declines by around 5.7%-9.5% compared to the estimated decline of 3.1%-5.5% in UK GDP by 2020. Over the long-term, FS sector GVA declines by 1.8%-4.0%, whereas the impact on UK GDP is around 1.2%-3.5%. This result underlines the deep linkages between the sector and the wider economy, as well as the highly cyclical nature of growth in the industry.
- **There could be potential knock-on impacts on the FS sector, in which the direct impacts modelled gradually affects the UK’s position as a global financial centre.** Although banks and other financial institutions may be able to adapt to restrictions in providing financial services to the Single Market in the short-term, over the medium-term, the balance of factors that influence companies’ location decisions could tip in favour of relocation of some activities to other EU financial hubs. These changes could also reduce the incentives for foreign banks to both retain and locate new international activities in the UK in the future.
- We have therefore provided an illustrative analysis of these knock-on impacts to demonstrate the potential economic impacts of the relocation of internationally-mobile FS activity from the UK to other European FS hubs. **This results in a further reduction in FS GVA of around 2% in 2020**, relative to the counterfactual. These negative impacts are amplified over time. As a result, **the negative impact gradually increases to 3.3% in 2030**, relative to the counterfactual. This represents a reduction of around £4 billion, at 2015 values. This could result in further costs to the wider economy of around 0.4% of GDP in 2030 relative to the counterfactual, which represents an economic loss of £8 billion (in 2015 values).

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## 2 *Executive summary*

### 2.1 *Purpose of this report*

In March 2016, TheCityUK commissioned PricewaterhouseCoopers LLP (PwC) to provide an analysis of the potential economic impacts of a UK exit from the EU on the FS sector. This builds on our previous report that was commissioned by the Confederation of British Industry (CBI), which set out the potential impacts of the UK leaving the EU on the UK economy under two exit scenarios. Whereas the PwC/CBI analysis assessed the potential impact of exit from the EU on the whole UK economy, this report presents the impact on the FS sector, as a component of the UK economy-wide analysis.

The UK has a surplus of around £10 billion in services trade with the EU, which is due in large part to the £20 billion surplus in trade in financial services and insurance. Given the materiality of the FS sector to the UK economy overall, these impacts are presented both at an FS sector level and overall UK economy level.<sup>1</sup>

In this report, we defined the FS sector to include banking and financial service activities (e.g. monetary intermediation), insurance, reinsurance and pension funding, and auxiliary FS and insurance services (which includes trading, investment management and market infrastructure services).<sup>2</sup>

### 2.2 *Alternative scenarios*

We examined two possible exit scenarios in our report for the CBI, which were based on the following key assumptions:

- **FTA scenario:** The UK exits and negotiates an FTA with the EU, based on tariff-free trade in goods (but not services).<sup>3</sup> The UK would have to implement EU standards on goods supplied to the EU, but otherwise would not be bound by the four freedoms<sup>4</sup> of the Single Market. The net inflow of low-skilled migrants from the EU could cease. However, this scenario reflects a case where the Government is able to secure greater flexibility over its immigration policy by relaxing rules for highly-skilled migrants from both EU and non-EU countries. The UK grandfathers all existing FTAs that the EU has with third-party countries after it leaves the EU. It also uses its freedom to pursue its external trade policy by negotiating an FTA with the US. The UK would no longer have to make budgetary contributions to the EU. We have assumed the UK would also gain greater control over regulatory policy, which could result in some regulatory cost savings. However, there could also be some regulatory divergence between the UK and EU over time, leading to an increase in non-tariff barriers.
- **WTO scenario:** The UK exits the EU and then trades with the EU on the World Trade Organisation's (WTO) MFN basis, which means that the UK would no longer enjoy tariff-free trade in goods with the EU. The UK would not be bound by the EU four freedoms. The net inflow of low-skilled migrants from the EU could cease. However, unlike the FTA scenario, there is assumed to be no corresponding relaxation in immigration rules for high-skilled migrants from both EU and non-EU countries. The Government would gain greater control over regulatory policy, which could result in some regulatory cost savings. However, there could also be some regulatory divergence between the UK and EU over time, leading to an increase in non-tariff barriers. We also assume that current FTAs between the EU and third-party countries no longer apply to the UK once it exits the EU, and trade with those countries reverts to a WTO MFN basis between 2020 and 2026 until new arrangements are put in place. The UK could use its freedom to pursue its external trade policy by negotiating an FTA with the US, but we

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<sup>1</sup> A report by PwC sets out the linkages between the FS sector and the UK economy in more detail. See PwC (2013) "Where next? Assessing the current and future economic contribution of the UK Financial Services Sector".

<sup>2</sup> Based on ONS Standard Industrial Classification (SIC) of economic activities 2007.

<sup>3</sup> Recent EU FTAs with third countries, e.g. Canada and South Korea, primarily cover goods trade, with limited liberalisation in some services sectors.

<sup>4</sup> These are freedom of movement for goods, services, capital and labour within the Single Market area.



assume this takes longer than in the FTA scenario to come into force. The UK would no longer contribute to the EU budget.

We assess these scenarios against a counterfactual where the UK votes to remain in the EU. This scenario largely represents a continuation of ‘business as usual’ trends for the UK economy, with trend real GDP growth of around 2.3% per annum over the period to 2030 and the latest official population projections from the ONS. Annex B provides more detail on the description and modelling inputs used to inform both scenarios.

We looked at the impacts over the period to 2030 as this is a time horizon over which the short-term uncertainty relating to post-exit arrangements should have largely dissipated and the UK economy would have had time to adapt to a new relationship with EU countries.

## ***2.3 Estimated economic impacts on the UK FS sector in alternative EU exit scenarios***

Table 2.1 presents the FS sector results from the PwC/CBI analysis. The impacts on the FS sector as a consequence of a UK exit from the EU are the result of:

- **The direct effects on the FS sector**, namely the impacts of changes to market access arrangements that result in an increase in non-tariff barriers (NTBs) in FS trade, as well as the impact of a reduction in migration into the UK; and
- **The wider economic effects from a slowdown in output and activity in other non-FS industry sectors**, which have a negative knock-on impact on the FS sector.

It is difficult to distinguish between these two impacts, due to the circularity of the relationship between direct effects on the FS sector and the wider economy, i.e. a fall in FS sector activity leads to a reduction in activity in other sectors of the UK economy, and vice versa. This is a key feature of the economic model we use in this analysis. Therefore this section presents the results on the FS sector as combining both effects.

These results have been calculated using the same approach as the PwC/CBI report. The impacts on all industry sectors, including those for the FS sector shown here, can be aggregated up to the overall UK economy impact presented in the PwC/CBI report.

Our analysis shows that in the short-term, FS GVA is estimated to decline by around 5.7%-9.5% in 2020, relative to the size of FS GVA in the counterfactual (see Table 2.1).<sup>5</sup> When taken as a percentage of FS GVA values in 2015, this negative impact represents a GVA reduction of around £7-12 billion. The negative impact on the FS sector gradually moderates over time, falling to around 1.8%-4.0% of FS GVA in 2030, relative to the counterfactual. This represents a GVA reduction of around £2-5 billion, at 2015 values relative to the size of FS GVA in the counterfactual.

Our analysis also suggests that the UK FS sector grows more slowly under both exit scenarios than under the counterfactual scenario. Compared to 2015, real GVA in the FS sector would be 38% larger in the FTA scenario and 35% larger in the WTO scenario in 2030. Nevertheless, the size of FS sector activity, as represented by GVA, would be lower in 2030 under both scenarios than the counterfactual scenario (FS GVA grows by 41% over the same period) where the UK remains part of the EU. This suggests that the importance of the UK FS sector gradually diminishes over time under both scenarios.

The estimated impacts on the FS sector vary over time, as Figure 2.1 and Figure 2.2 show. There is a significant impact in the short-term on the FS sector, due to the effects of uncertainty. The longer-term impact gradually declines once the initial uncertainty effects have faded away.

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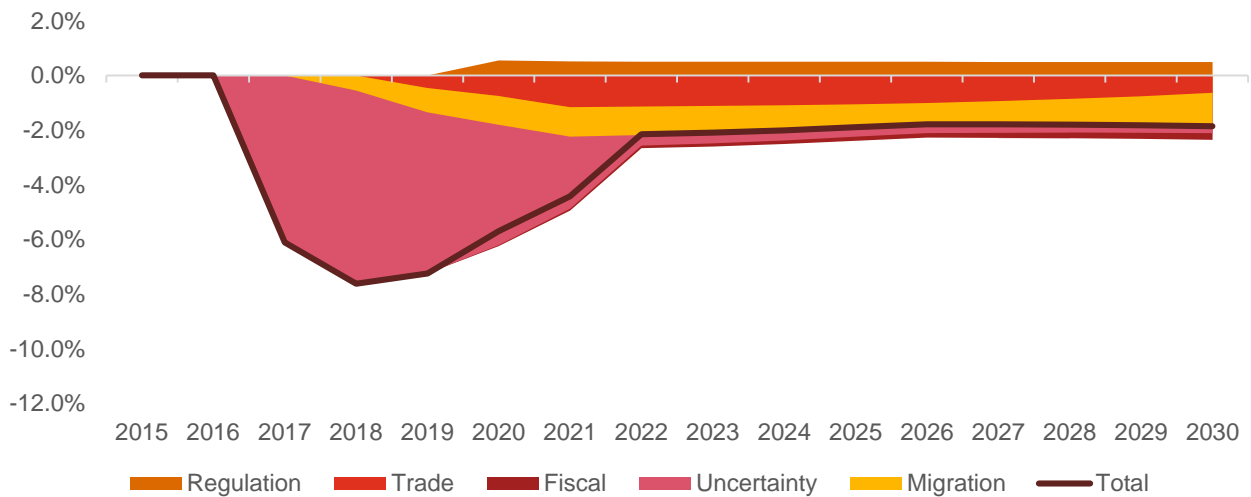
<sup>5</sup> Gross value added (GVA) is typically used to measure the contribution to the economy at the industry sector level, and is the difference between output and intermediate consumption for a given industry sector. GVA is used in the estimation of GDP, specifically, GVA plus net taxes on products equals GDP at the whole economy level.

Table 2.1: Exit scenario results – percentage difference in real FS GVA from levels in counterfactual scenario

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
Uncertainty	-4.4%	-0.3%	-0.3%	-6.2%	-2.1%	-0.2%
Trade	-0.8%	-1.1%	-0.6%	-2.0%	-2.1%	-2.2%
Migration	-1.0%	-0.8%	-1.1%	-1.8%	-1.8%	-1.8%
Regulations*	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Fiscal	0.0%	-0.2%	-0.2%	0.0%	-0.2%	-0.2%
<b>Total impact on FS GVA</b>	<b>-5.7%</b>	<b>-1.9%</b>	<b>-1.8%</b>	<b>-9.5%</b>	<b>-5.7%</b>	<b>-4.0%</b>

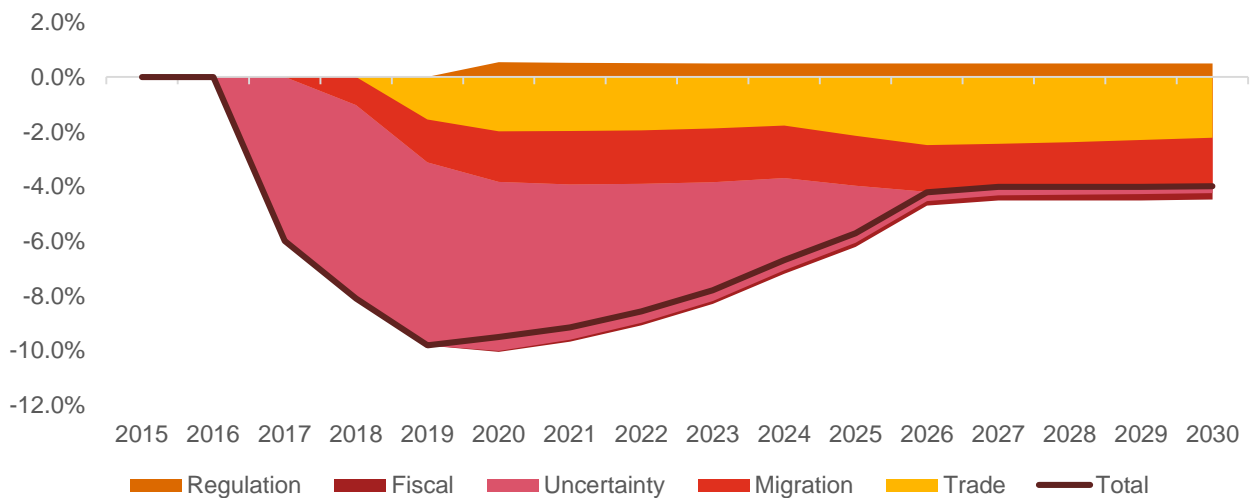
\*These refer to changes to non-FS specific regulations, i.e. social, employment, health and safety regulations, environment and climate change regulation and product standards regulations. Note: numbers in the columns may not add up exactly due to rounding. The impacts modelled under both scenarios are set out in more detail in Annex B. Source: PwC analysis

Figure 2.1: FTA scenario results – percentage difference from the level of real UK FS GVA in the counterfactual



Source: PwC analysis

Figure 2.2: WTO scenario results – percentage difference from the level of real UK FS GVA in the counterfactual



Source: PwC analysis

We discuss below our estimates for each of the different types of potential economic impact:

- **Uncertainty:** The increase in uncertainty is likely to result in higher risk premia on sterling-denominated financial assets, including for financial corporates. For example, the spread on UK investment grade financial corporate debt has widened by 40 bps relative to European corporate bonds between January 2016 and February 2016. This could result in a short-term deterioration in banks' funding costs, which is mitigated to some extent by more recent regulatory requirements to hold higher levels of long-term debt. Alternatively, banks could seek to pass on these costs to businesses, but they are constrained by competitive pressures. However, the FS sector is also deeply-linked to the UK economy, and is affected by lower demand for financing, which impacts lending volumes and commissions and fees from advisory work etc. The uncertainty effects account for the largest share of the overall impacts on the FS sector in the short-term, which would be most acutely felt when the terms of an exit agreement are being negotiated. This uncertainty is modelled through an increase in the cost of capital, which results in a reduction in FS GVA of around 4%-6% in 2020 in the two scenarios. By 2030, this effect has largely faded away as it falls to around 0.2%-0.3% in 2025.
- **Trade:** In our scenarios, one of the largest potential impacts of the UK leaving the EU on the FS sector can be attributed to the increase in NTBs as a result of the loss of passporting rights and restrictions on UK banks' access to EU markets. As the sector adjusts in the long-term, the trade impacts result in a net effect of 0.6% of FS GVA in 2030. Under the WTO scenario, where the UK faces a higher increase in NTBs and tariffs and the US FTA takes longer to agree, FS GVA falls by 2.2% relative to the 2030 counterfactual.
- **Migration:** The changes in net migration into the UK result in significant negative impacts for the FS sector, reducing FS GVA by around 1%-2% relative to the counterfactual in both scenarios. Although the sector is less directly exposed to a reduction in low-skilled migration, it is nevertheless affected by the knock-on impact of the reduction in labour supply in other sectors, which has a negative impact on the productive capacity of the UK economy. This, in turn, has a direct impact on demand for FS sector products and services. The impact of lower migration inflows also has a cumulative impact on UK labour supply, which means that the negative impacts are amplified over time.
- **Regulation:** We have not modelled any changes to FS-specific regulations, as these are unlikely to be lifted or materially amended, for the following reasons: (1) many of the regulations that have been implemented in the UK have gone beyond global and EU requirements where permissible, which suggests that UK policymakers could be less willing to roll back such regulations; (2) some EU regulations effectively originate from the UK's international commitments; (3) many of the EU's third country regimes that enable market access are conditioned on regulatory equivalence and reciprocal access to UK markets. Therefore, if the UK wishes to enable UK banks and investment companies to continue accessing EU markets, the scope for regulatory discretion may be limited in practice; and (4) In principle, the cost of FS regulation is offset by the benefits of financial stability and institutional resilience. Therefore, any reduction in FS regulatory costs could come at the cost of eroding these benefits.

However, we identified a number of other non-FS specific regulatory changes that could occur following the UK's exit from the EU, specifically social, employment, health and safety regulation, as well as environment and climate change regulation and product standards regulations. The FS sector experiences a small positive impact from a reduction in regulatory costs in the UK economy of around 0.5% relative to the counterfactual under both scenarios. However, regulation also delivers economic benefits by addressing market failures, such as monopoly power, externalities or to provide public goods. The potential savings from reducing regulatory costs could therefore be relatively limited once the foregone benefits of regulations are taken into account. In addition, there are one-off adjustment costs which would diminish the positive benefits from the regulatory cost reduction.

- **Fiscal:** There are some benefits to UK GDP from lower EU contributions. However, there is a small negative impact on FS GVA, i.e. around 0.2% under both scenarios by 2030. This is due to some degree



of “crowding out” that occurs as a consequence of higher government spending in capital investments, which has the effect of displacing private sector spending, leading to lower investment in the FS sector.<sup>6</sup>

A comparison of the impacts between UK GDP and FS GVA shows that the FS sector is disproportionately impacted from the UK leaving the EU (see Table 2.2). For example, in the short-term, FS sector GVA declines by around 5.7%-9.5% compared to the estimated decline of 3.1%-5.5% in UK GDP by 2020. Over the long-term, FS sector GVA declines by 1.8%-4.0%, whereas the impact on UK GDP is around 1.2%-3.5%. This result underlines the deep linkages between the sector and the wider economy, as well as the highly cyclical nature of growth in the industry.

*Table 2.2: Comparison of impacts on real FS GVA and UK GDP in percentage differences from levels in the counterfactual*

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
Impact on FS GVA	-5.7%	-1.9%	-1.8%	-9.5%	-5.7%	-4.0%
Impact on UK GDP	-3.1%	-1.1%	-1.2%	-5.5%	-4.1%	-3.5%

*Note: The distinction between GVA and GDP is described as follows: GVA is typically used to measure the contribution to the economy at the industry sector level, and is the difference between output and intermediate consumption for a given industry sector. GVA is used in the estimation of GDP, specifically, GVA plus net taxes on products equals GDP at the whole economy level. While GDP and GVA are not directly comparable, both measures capture output and activity in the economy.*

*Source: PwC analysis*

The reduction in economic output and activity associated with a potential UK exit from the EU results in a negative impact on demand and investment in the FS sector and the wider economy, which leads to a reduction in employment. In the short-term, our modelling demonstrates that employment in the FS sector could decline by around 70,000-100,000 in 2020 relative to the counterfactual.

Employment gradually recovers in the long-term where it is estimated to decline by 0.7%-2.4% compared to the counterfactual in both scenarios, as the labour market adjusts. This translates into a reduction in FS employment (the number of people employed) of around 10,000-30,000 in 2030 relative to the counterfactual in the FTA and WTO scenarios respectively.

## **2.4 Potential economic impacts of a relocation in banking activity**

The status of the UK FS sector as a major global and regional hub relies to some extent on having access to European markets. One of the key benefits of EU membership to the FS sector is the ability to access the Single Market via the passporting regime. Banks and investment companies authorised in an EEA state are entitled to provide services to clients in other EEA states by exercising the right of establishment via a branch or to provide services across borders, without further authorisation requirements. The passport regime covers banking services such as deposit-taking and lending, insurance (life, non-life), reinsurance, investment services, the management and offering of Undertakings for Collective Investments in Transferable Securities (UCITS), alternative investment funds, payment services and electronic money.

A decision to leave the EU could impact the UK’s continued market access via the passport and system of mutual recognition that is based on the EU framework for mutual regulatory reliance. This would have an impact on the ability of banks authorised in the UK to offer products and services in a number of key areas for EU clients, including lending and deposit-taking, foreign exchange or other investment banking services.

In the short-term, banks and other financial institutions based in the UK could adapt to market access restrictions, for example, by establishing structures in the EU that would enable them to continue providing

<sup>6</sup> This crowding effect occurs when the government borrows to finance spending, which increases the real interest rate of the economy. This results in an increase in the opportunity cost of borrowing for the private sector, which dampens private sector investment.

banking services to EU clients. These effects have been captured in the PwC/CBI analysis as an increase in trade barriers banks face in providing services cross-border.

However, over the long-term, the balance of factors that influence businesses' location decisions, including market access to the EU, could tip in favour of relocation of some activities to other EU financial hubs. This is likely to affect banks that have used the UK as a hub to gain access to 27 other EU Member States. This means that, over the medium-term, FS institutions may relocate activities that particularly relate to serving EU customers. These changes could also reduce the incentives for foreign banks to both retain and locate new international activities in the UK in the future. These factors combined could lead to a slowdown in FS sector activity and growth in the UK over the long-term, leading to a gradual erosion of the UK's status as a regional financial centre.

By way of illustration, we estimate that a partial and gradual withdrawal of non-EU banks from the UK to other European FS hubs could further reduce UK FS sector growth by 0.3 percentage points between 2020 and 2030.

This relocation of banking activity is estimated to cause a decline in FS GVA of around 2% in 2020, relative to the counterfactual (see Table 2.3). This negative impact represents a reduction of around £3 billion, at 2015 values. The impact also reflects the negative knock-on impacts on lower demand for FS products and services in the UK by non-EU banks. These negative impacts are amplified over time. As a result, the negative impact gradually increases to 3.3% in 2030, relative to the counterfactual. This represents a reduction of around £4 billion, at 2015 values, and is additional to the direct impacts modelled as part of the PwC/CBI analysis.

In terms of how this would impact the overall UK economy, the relocation in FS activity could result in additional economic costs of around 0.4% of GDP in 2030 relative to the counterfactual. If these impacts were valued in relation to 2015 GDP, they would represent a loss of around £0.7 billion in 2020, increasing to around £8 billion in 2030 relative to the counterfactual.

*Table 2.3: Percentage difference in real FS GVA and UK GDP from levels in counterfactual scenario as a result of relocation of banking activity*

Impacts	2020	2025	2030
Impact on FS GVA	-2.09%	-3.34%	-3.25%
Impact on UK GDP	-0.04%	-0.21%	-0.42%

Source: PwC analysis

The assumptions made for the relocation of banking activity may be optimistic as we have only focused on the potential reaction of a sub-set of the UK banking sector, namely non-EU banks. It is likely that there could be other behavioural and policy responses that we have not captured in our model. These include the responses from UK-incorporated banks with sizeable European operations that could equally be affected by a potential UK exit, as well as insurers, investment companies and market infrastructure providers, and the various non-FS services industries that support the FS sector. A potential response from these businesses to relocate activity from the UK to elsewhere could increase the negative economic impacts associated with the UK leaving the EU.

It is unlikely that the UK's exit from the EU would result in the UK losing its status as the premier international financial centre in the short-term. The UK would continue to retain its existing advantages that are attractive to FS companies and investors, such as a time zone bridging America and Asia, access to skills, a strong and stable legal system, the dominance of English as the primary business and financial language. Fixed investment also tends to be long-term rather than short-term, which makes it less vulnerable to sudden reversals in investor sentiment.

However, the UK has an 'outsized' FS sector relative to the size of the economy, accounting for around 8% of total UK GVA.<sup>7</sup> The difference, relative to what is 'needed' to support the domestic economy, is essentially an export sector owing to the UK's status as a regional FS hub. As such, if banks, insurance companies, investment firms and market infrastructure service providers gradually relocate to other European financial hubs over the

<sup>7</sup> This compares to the EU FS sector share of the EU economy of 5%.

long-term, this could lead to a slow shift in the centre of gravity for FS activity from the UK to other European hubs, leading to an erosion of FS activity in the UK.

This could also result in a gradual migration of support services that are deeply linked to the FS sector, including the legal, professional and business services sectors, in order to serve these clients in other emerging financial hubs. This loss of critical mass could have an impact on the UK's status as an international financial centre.

## ***2.5 Limitations and uncertainties relating to our approach and model estimates***

All economic model estimates are subject to uncertainties and this is particularly true when assessing such a complex and unprecedented possible event as the UK leaving the EU. Our estimates should, therefore, only be taken as indicative of the broad direction and magnitude of the potential economic impacts of alternative UK exit scenarios.

We have also not taken into account potential government policy responses that could either accelerate or mitigate the potential adverse impacts of a UK decision to leave the EU.

It is important to be aware of the limitations on the scope of this study when interpreting the results. These are also set out in more detail in the PwC/CBI report.





## 3 Overview of our approach

In this section, we outline the approach we have used to derive our results.

### 3.1 Our analytical approach

In the PwC/CBI report, we identified and quantified a set of channels through which a potential UK exit from the EU could have an impact on the economy as a whole in terms of GVA and employment. It examined two possible exit scenarios, based on the following key assumptions:

- **FTA scenario:** The UK exits and negotiates an FTA with the EU, based on tariff-free trade in goods (but not services).<sup>8</sup> The UK would have to implement EU standards on goods supplied to the EU, but otherwise would not be bound by the four freedoms<sup>9</sup> of the Single Market. The net inflow of low-skilled migrants from the EU could cease. However, this scenario reflects a case where the Government is able to secure greater flexibility over its immigration policy by relaxing rules for highly-skilled migrants from both EU and non-EU countries. The UK grandfathers all existing FTAs that the EU has with third-party countries after it leaves the EU. It also uses its freedom to pursue its external trade policy by negotiating an FTA with the US. The UK would no longer have to make budgetary contributions to the EU. We have assumed the UK would also gain greater control over regulatory policy, which could result in some regulatory cost savings. However, there could also be some regulatory divergence between the UK and EU over time, leading to an increase in non-tariff barriers.
- **WTO scenario:** The UK exits the EU and then trades with the EU on the World Trade Organisation's (WTO) MFN basis, which means that the UK would no longer enjoy tariff-free trade in goods with the EU. The UK would not be bound by the EU four freedoms. The net inflow of low-skilled migrants from the EU could cease. However, unlike the FTA scenario, there is assumed to be no corresponding relaxation in immigration rules for high-skilled migrants from both EU and non-EU countries. The Government would gain greater control over regulatory policy, which could result in some regulatory cost savings. However, there could also be some regulatory divergence between the UK and EU over time, leading to an increase in non-tariff barriers. We also assume that current FTAs between the EU and third-party countries no longer apply to the UK once it exits the EU, and trade with those countries reverts to a WTO MFN basis between 2020 and 2026 until new arrangements are put in place. The UK could use its freedom to pursue its external trade policy by negotiating an FTA with the US, but we assume this takes longer than in the FTA scenario to come into force. The UK would no longer contribute to the EU budget.

These scenarios were assessed against a **counterfactual** scenario where the UK votes to remain in the EU. This scenario largely represents a continuation of 'business as usual' trends for the UK economy, with trend real GDP growth of around 2.3% per annum over the period to 2030 and the latest official population projections from the ONS.<sup>10</sup> The size of the FS sector (as measured by GVA) is also assumed to grow at this long-term growth rate. This is largely consistent with historical data on the share of FS activity within the UK economy, which has remained stable at around 8% of UK GVA.

We used a multi-sector model of the UK economy to analyse the potential economic implications of the UK leaving the EU in the PwC/CBI report. Figure 3.1 summarises the scope of the impacts captured in the PwC/CBI report. At a high level, our modelling captured and combined the following impacts:

- Direct impact of the policy changes on the non-FS sectors (orange arrow)
- Direct impact of the policy changes on the FS sector (red arrow).

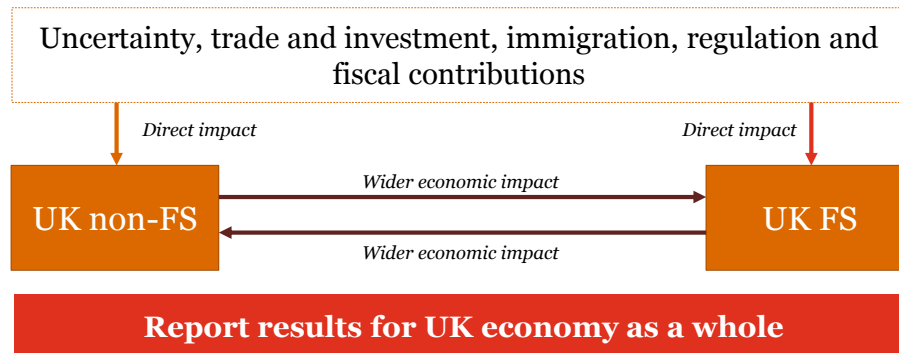
<sup>8</sup> Recent EU FTAs with third countries, e.g. Canada and South Korea, primarily cover goods trade, with limited liberalisation in some services sectors.

<sup>9</sup> These are freedom of movement for goods, services, capital and labour within the Single Market area.

<sup>10</sup> We have also made some adjustments to capture the impact of the competitiveness reforms agreed by the UK Government with the governments of the other EU Member States in February 2016. These adjustments assume a small and gradual reduction in non-tariff barriers for UK-EU trade, and a small reduction in regulatory costs.

- **Wider economic impact** of the policy changes on the FS and non-FS sectors as a result of the interaction between these sectors (brown arrows). An example of this interaction is as follows: lower output and activity in non-FS sectors reduces demand for FS sector products and services. This in turn, leads to lower demand by the FS sector for non-FS products and services.

Figure 3.1: Impacts captured in PwC/CBI report



Whereas the PwC/CBI analysis assessed the potential impact of exit from the EU on the whole UK economy, this report presents the impact on the FS sector, as a component of the UK economy-wide analysis. The FS sector is defined in Section K of the Standard Industrial Classification (SIC) of economic activities 2007. This includes the following types of activities, as identified in the UK national economic data:

- **Banking and financial service activities, except insurance and pension funding** (UK SIC Sector 64): this refers to banking activities, which include monetary intermediation (e.g. banks), holding companies, trusts, funds and similar financial entities, and other financial service activities (e.g. financial leasing) and account for 54% of total FS sector activity in GVA terms.
- **Insurance, reinsurance and pension funding, except compulsory social security** (UK SIC Sector 65): This includes life and non-life insurance and reinsurance, and pension funding activities. This sub-sector accounts for 31% of total FS sector activity in GVA terms.
- **Auxiliary FS and insurance services** (UK SIC Sector 66): This includes fund management and brokerage activities, clearing and CCP activities, activities of insurance agents and brokers and other activities auxiliary to insurance and pension funding. This sub-sector accounts for 16% of total FS sector activity in GVA terms.

The results of the PwC/CBI analysis for the FS sector is set out in Section 4. Annex A of this report sets out in more detail the FS-sector specific issues that underpin the assumptions used in the PwC/CBI report, via the trade, migration, regulation and the UK's fiscal contribution channels. Annex B provides more detail on the description and modelling inputs used to inform both scenarios.

The PwC/CBI report also reviewed other widely discussed possible EU exit scenarios, including the UK becoming a member of the European Economic Area (EEA), with a relationship to the EU broadly similar to that of Norway, or agreeing a series of bilateral deals with the EU in a way broadly similar to Switzerland. We have not modelled these alternative scenarios, however, because they would seem inconsistent with many of the key arguments that have been put forward for voting to leave the EU, notably as regards continued free movement of labour between the UK and the rest of the EU.

### 3.2 Illustration of the potential impact of a relocation in banking activity

There could be potential knock-on impacts on the FS sector, in which the direct impacts modelled as part of the PwC/CBI analysis gradually affects the UK's position as a global financial centre.

Although banks and other financial institutions may be able to adapt to market access restrictions in the short-term, their longer-term responses are even less certain and difficult to model. Over the longer-term, it is conceivable that these changes could have an impact on businesses' location decisions, including proximity to

the EU Single Market. These changes could therefore lead to a gradual relocation of some banking activity from the UK to other financial hubs in Europe, which leads to a slowdown in growth of the FS sector in the UK. By way of illustration, we model the impact of a relocation of internationally-mobile FS activity from the UK to other European FS hubs. We focused on the following steps in our analytical approach:

1. **Analysing the wider economic impacts of UK FS activity on the UK economy:** We considered how changes to the UK's trading relationship with the EU would affect different sub-sets of UK financial institutions. To inform our analysis, we conducted a comprehensive review and critical assessment of the existing evidence and commentary on how the UK's exit from the EU on financial services could affect the location decisions of UK-based financial institutions. This translates into modelling assumptions of the share of banking activity that could be affected as a result of the UK leaving the EU.
2. **Modelling the wider economic impacts using a computable general equilibrium (CGE) model:** We then modelled the impact of the potential reduction in FS sector activity on the UK economy. The model inputs were informed using data on the share of FS activity that could be most affected by market access restrictions. The results of this modelling are set out in Section 5 of the report, while Annex A provides further detail on the underlying assumptions used in our analysis.

### 3.3 Our CGE modelling approach

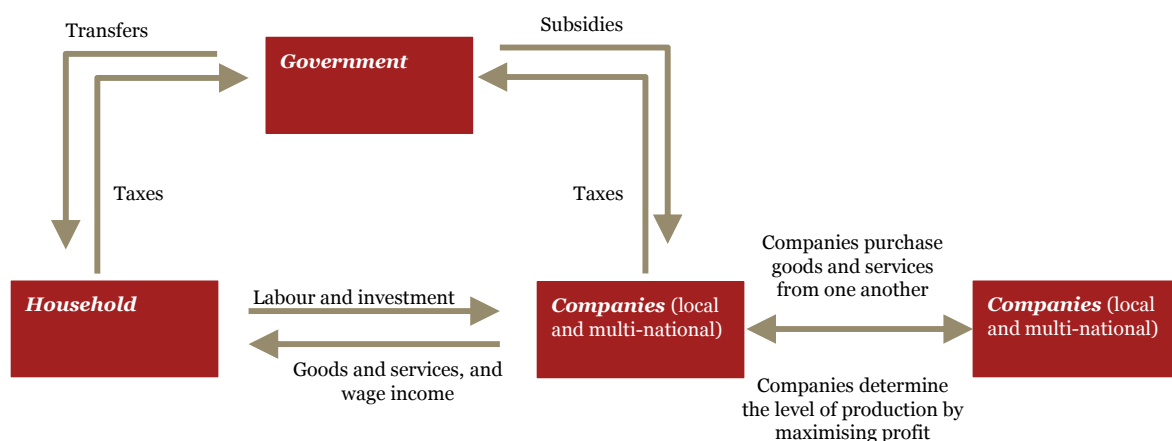
We used a Computable General Equilibrium (CGE) model of the UK economy to analyse the impact of the UK's exit from the EU on the UK economy. CGE models are often used to assess the impact of different government or institutional policies, or to investigate the effects of significant economic events. They are used widely by international institutions such as the World Bank, IMF and OECD as well as the UK Government.

A CGE model combines economic data and a complex system of equations in order to capture the interactions of the three main elements in an economy – households, businesses and the government (See Figure 3.2 for more detail). Each element is defined and linked through labour market or capital market flows, household consumption, intermediate product demand, taxes or government transfers.

Our model features the supply chain interactions of different industries in the economy based on the 2014 Supply and Use Tables for the UK compiled by the Office for National Statistics (ONS). The model also enables us to account explicitly for the impact of trade relationships, which is important as it is likely that trade flows could change significantly following a UK exit from the EU. Our CGE model allows us to project the impact of a UK exit from the EU on a range of different macroeconomic variables, including GDP (and GDP per capita), employment, household consumption, exports, imports and investment.

The model that we use is broadly consistent with the approaches used by HM Treasury (HMT) and HM Revenue and Customs (HMRC) to model the impact of large policy changes. The relationships within the CGE model are calibrated based on actual historical economic data. More information on our CGE model is available in Annex A of the PwC/CBI report.

Figure 3.2: Economic interactions in the CGE model



Source: PwC



## 4 Scenario modelling results

In this section, we present the impact on the FS sector, as a component of the UK economy-wide analysis in the PwC/CBI analysis.

### 4.1 Modelling inputs

We summarise the input assumptions for the policy changes considered in the PwC/CBI report below that affect the UK economy, including the FS sector. These assumptions are described in more detail in Annex A of this report, and Annexes B to F of the PwC/CBI report.

- **Short-term uncertainty:** The increase in uncertainty is likely to result in higher risk premia on sterling-denominated financial assets, which has a direct impact on capital markets and businesses' cost of debt. We model the impact of uncertainty by applying a cost of capital rise to our model, which is calibrated to changes to businesses' risk premia during the Eurozone crisis in 2011-12. This translates into a cost of debt rise of 50 bps and a cost of equity rise of 20 bps. We assume that uncertainty would fade away relatively quickly (within around 5 years) under the FTA scenario but could take up to 9 years to do so under our WTO scenario. In practice, there could also be differences in the scale of the rise in risk premia in different scenarios but, for simplicity, we captured this through the duration of the change instead. The duration of the negative impact seems plausible given the likely timescale for UK exit negotiations, both with the EU and other trading partners, but it is clearly impossible to pin down the timing of these effects with any precision. The duration of the negative effects also reflects the time required for businesses and households to respond to the new terms of any trade agreement.
- **Trade:** We assume that the UK would receive equivalence determinations by the European Commission, which facilitates market access for a range of financial services covered by the scope of the EU's third country regimes. However, the UK FS exports to the EU nevertheless face higher NTBs due to the loss of access to the passport arrangements in financial services. This is because even if the UK receives equivalence determinations from the EU, these will not cover banks' ability to provide cross-border services in a number of core areas.<sup>11</sup> NTBs on trade between UK-EU would therefore increase. In the FTA scenario, this increases by one-quarter of the differential between the NTBs faced by UK exports to the rest of the world and the EU. We assume an increase of three-quarters in the WTO scenario, as we assume more limited equivalence determinations.<sup>12</sup>

The NTBs applied to exports from other goods and services sectors are also likely to increase due to regulatory divergence, which results in exporting businesses having to adhere to different sets of regulations, which add to the costs of trade. UK businesses also face an increase in tariffs applied to goods exports to the EU under the WTO scenario as trade reverts to WTO "Most Favoured Nation" (MFN) rules.<sup>13</sup> Under the FTA scenario, we assume the continued application of zero tariffs on goods trade.

- **Migration:** Under the WTO scenario, we model the impact of a reduction in inflows of net migration of low-skilled labour from the EU, in line with the current treatment of low-skilled migration from non-EU countries.<sup>14</sup> Under the FTA scenario, the reduction in net inflows of low-skilled labour is accompanied by an increase in inflows of high-skilled labour, which could follow from a small liberalisation in visa requirements for high-skilled migrants. This increase in high-skilled labour is equivalent to half of the reduction in net inflows of low-skilled labour. It is likely that the FS sector would benefit

<sup>11</sup> These areas include lending and deposit-taking, foreign exchange or other investment banking services that are outside the scope of MiFID II.

<sup>12</sup> Our estimates of NTBs are informed by our econometric modelling (using gravity models) based on trade flow data.

<sup>13</sup> MFN is a status or level of treatment accorded by one state to another in international trade. The term means the country which is the recipient of this treatment must receive equal trade advantages as the "most favoured nation" by the country granting such treatment. In effect, a country that has been accorded MFN status may not be treated less advantageously than any other country with MFN status by the promising country.

<sup>14</sup> The principle of free movement is applied on a reciprocal basis to those members of the EEA that are not members of the EU. Therefore our references to EU migration apply equally to the EEA.

disproportionately from an increase in high-skilled labour, due to the high share of skilled roles in the sector.

- **Regulations:** We do not model any change in the regulatory regime for the FS sector, as the EU's third country regimes that enable market access are conditioned on equivalence and reciprocity. However, we also reviewed other non-FS specific regulatory changes that could occur following the UK's exit. Specifically, we identified three areas where there could be some change: (1) social, employment, health and safety; (2) environment and climate change; and (3) product standards.<sup>15</sup> We modelled the realised annual cost savings for the UK economy to be in the order of £12.6 billion under both scenarios. In our CGE model, this is represented as an increase in input efficiency, which enables an increase in output per unit of input.<sup>16</sup>
- **Fiscal:** If the UK left the EU, it would no longer have to contribute to the EU budget. We assume that the UK Government regains control of its net contribution (which is equal to approximately 0.5% of UK GDP, excluding direct transfers to the private sector). Our analysis assumes that the UK would replace EU funding for regions and businesses with its own funding. To capture this, we apply a fiscal saving equivalent to 0.5% of GDP (based on HM Treasury accounts) such that 50% of this saving is allocated to capital investment and the remaining 50% is allocated to government debt reduction.

## 4.2 *Modelling results*

The impacts on output and activity in the FS sector as a consequence of a UK exit from the EU are the result of:

- **The direct effects on the FS sector**, namely the impacts of changes to market access arrangements that result in an increase in NTBs in FS trade, as well as the impact of a reduction in migration into the UK; and
- **The wider economic effects from a reduction in output and activity in other non-FS industry sectors**, which have a negative knock-on impact on the FS sector.

It is difficult to distinguish between these two impacts, due to the circularity of the relationship between direct effects on the FS sector and the wider economy, i.e. a fall in FS sector activity leads to a reduction in activity in other sectors of the UK economy, and vice versa. This is a key feature of CGE modelling. Therefore this section presents the results on the FS sector as combining both effects.

### 4.2.1 *Impact on the UK FS sector*

Table 4.1 summarises the impacts on FS GVA under both the FTA and WTO scenarios. These results have been calculated using the same approach as the PwC/CBI report. The impacts on all industry sectors, including those for the FS sector shown here, can be aggregated up to the overall UK economy impact presented in the PwC/CBI report.

Our analysis suggests that in the short-term, FS GVA is estimated to decline by around 5.7%-9.5% in 2020, relative to the counterfactual. This negative impact represents a reduction of around £7-12 billion, at 2015 values. The negative impact on the FS sector gradually moderates over time, falling to around 1.8%-4.0% of FS GVA in 2030, relative to the counterfactual. This represents a reduction of around £2-5 billion, at 2015 values.

We looked at the impacts over the period to 2030 as this is a time horizon over which the short-term uncertainty relating to post-exit arrangements should have largely dissipated and the UK economy would have had time to adapt to a new relationship with EU countries.

As shown in Table 4.1, the impacts on the FS sector GVA in the FTA and WTO scenarios are driven primarily by the effects of uncertainty and migration.

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<sup>15</sup> Based on Open Europe's analysis of regulatory impact assessments. See Open Europe (2015).

<sup>16</sup> Our analysis of regulatory costs considers gross, rather than net, costs. The net costs would be even smaller (or become negative) once the foregone benefits of regulations have been taken into account.

Table 4.1: Exit scenario results – percentage difference in real FS GVA from levels in counterfactual scenario

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
Uncertainty	-4.4%	-0.3%	-0.3%	-6.2%	-2.1%	-0.2%
Trade	-0.8%	-1.1%	-0.6%	-2.0%	-2.1%	-2.2%
Migration	-1.0%	-0.8%	-1.1%	-1.8%	-1.8%	-1.8%
Regulations*	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Fiscal	0.0%	-0.2%	-0.2%	0.0%	-0.2%	-0.2%
<b>Total impact on FS GVA</b>	<b>-5.7%</b>	<b>-1.9%</b>	<b>-1.8%</b>	<b>-9.5%</b>	<b>-5.7%</b>	<b>-4.0%</b>

\*These refer to changes to non-FS specific regulations, i.e. social, employment, health and safety regulations, environment and climate change regulation and product standards regulations. Note: numbers in the columns may not add up exactly due to rounding. The impacts modelled under both scenarios are set out in more detail in Annex B. Source: PwC analysis

We highlight a few other notable features of our modelling results, as follows:

- **Uncertainty:** The increase in uncertainty is likely to result in higher risk premia on sterling-denominated financial assets, including for financial corporates. For example, the spread on UK investment grade financial corporate debt has widened by 40 bps relative to European corporate bonds between January 2016 and February 2016.

Under the FTA scenario where the UK negotiates an exit agreement relatively quickly with the EU, the FS sector is expected to experience a contraction in sector GVA of around 4% in 2020 due to this uncertainty. This falls to around 0.3% in 2025 and beyond as a clearer picture of UK banks' access to the EU Single Market emerges. In contrast, in the WTO scenario, a more prolonged period of uncertainty results in a larger negative impact on FS GVA of around 6% in 2020. This fades away gradually thereafter to around 2% of FS GVA by 2025, before declining to close to zero by 2030.

These uncertainty effects account for the largest share of the overall impacts on the FS sector in the short-term, which are largely felt when the terms of an exit agreement are being negotiated. This is for the following reasons: First, financial institutions are likely to delay or put investment plans on hold while there is still little certainty over the UK's market access arrangements with the EU. They may also take pre-emptive measures by investing in other financial hubs (not just in the EU, but globally) or reducing their presence in the UK to hedge against a potential adverse outcome. This is likely to result in lower investment in the FS sector.

Second, the uncertainty is likely to result in lower investment in the UK economy as a whole, which is consistent with recent surveys that suggest businesses are delaying investment plans due to uncertainty over a possible UK exit from the EU.<sup>17</sup> Even though there are some areas of financial services that help to hedge against volatile business environments, e.g. an increase in business demand for hedging products, there are many other areas that are highly-cyclical and perform less well during volatile periods, such as lending activity, debt and equity issuance, mergers and acquisitions, asset management etc. The reduction in investment activity could have a knock-on impact on the FS sector, due to the lower demand for loans, debt and equity issuance, which results in lower loan growth and interest revenues, and lower banking fees and commissions.

- **Trade:** An important impact of the UK leaving the EU on the FS sector can be attributed to the increase in NTBs as a result of the loss of passporting rights and restrictions on UK banks' access to EU markets. The FS sector is also affected by the knock-on impacts of lower output and activity in other industry sectors as a result of the increase in trade tariffs and NTBs faced by other UK goods and services exports

<sup>17</sup> Deloitte's CFO Survey (April 2016) suggests that the net balance of CFOs expect capital expenditure by UK corporates to decrease over the next 12 months. Uncertainty over the economic and financial environment, and a possible UK exit from the EU are major factors explaining this trend. It also reports that only 25% of CFOs say that it is a good time to take greater risk onto their balance sheets, down from 51% a year ago.



to the EU. This means that in the short-term, the combined trade effects result in a negative impact on FS GVA of 0.8% in the FTA scenario and 2.0% in the WTO scenario. As the sector adjusts in the long-term, the trade impacts result in a net effect of 0.6% of FS GVA in 2030. Under the WTO scenario, where the UK faces a higher increase in NTBs and tariffs and the US FTA takes longer to agree, FS GVA falls by 2.2% relative to the 2030 counterfactual.

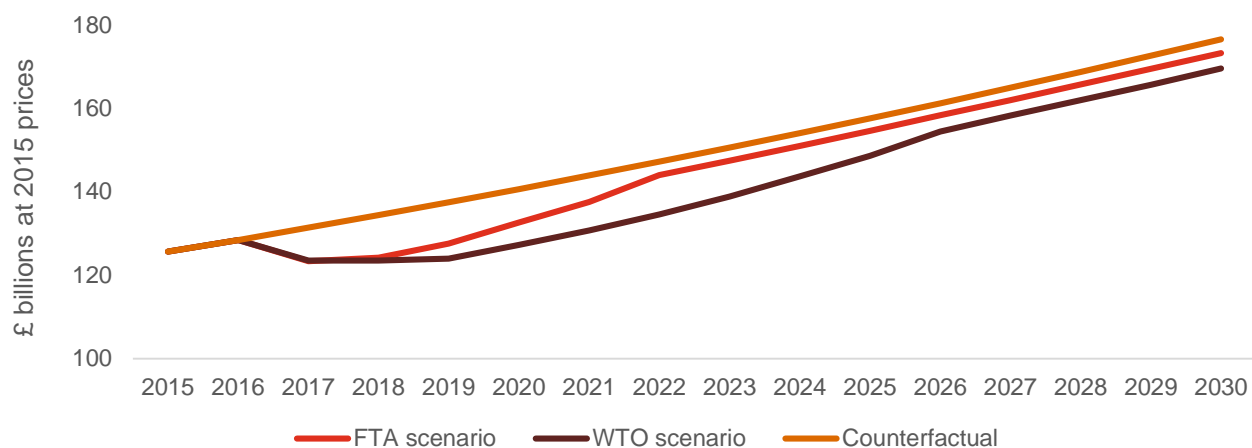
- **Migration:** The changes in net migration into the UK result in significant negative impacts for the FS sector, reducing FS GVA by around 1%-2% relative to the counterfactual. The UK FS sector is less directly exposed to the reduction in the availability of low-skilled labour from the EU, as it tends to be more reliant on high-skilled labour from non-EU countries compared to other UK sectors. However, it is nevertheless affected by knock-on impacts of the reduction in labour supply in other sectors, which has a negative impact on the productive capacity of the UK economy. This, in turn, has a direct impact on demand for FS sector products and services. The impact of lower migration inflows also has a cumulative impact on UK labour supply, which means that the negative impacts are amplified over time.
- **Regulations:** Although we do not anticipate any changes to the FS regulatory environment, the FS sector experiences a small positive impact from a reduction in regulatory costs in the UK economy associated with social, employment, health and safety regulation, as well as environment and climate change regulation. This results in a small positive increase in FS GVA of 0.5% relative to the counterfactual under both scenarios. However, although regulations often place a cost on businesses, regulations can have a positive impact on growth by improving economic efficiency and addressing market failures. Because our analysis considers the gross, rather than the net, costs of regulations, it is possible that the gains from regulatory savings could be even smaller than our model suggests once these benefits are factored in (but this is beyond the scope of our model to quantify). In addition, there are one-off adjustment costs which would diminish the positive benefits from the regulatory cost reduction.
- **Fiscal:** If the UK no longer has to contribute to the EU budget, this is estimated to lead to a small positive impact on overall GDP. However, the effect of the fiscal channel on the FS sector results in a small negative impact on FS GVA, i.e. around 0.2% of FS GVA under both scenarios by 2030. This is due to some degree of “crowding out” that occurs as a consequence of higher government spending in capital investments, which has the effect of displacing private sector spending, leading to lower investment in the FS sector.

Figure 4.1 shows the level of real FS GVA under both exit scenarios and the counterfactual. Compared to 2015 GVA, real GVA in the FS sector would be 38% larger in the FTA scenario and 35% larger in the WTO scenario in 2030. Nevertheless, the size of FS sector activity, as represented by GVA, would be lower in 2030 under both the WTO and FTA scenarios than under the counterfactual scenario (FS GVA grows by 41% over the same period) where the UK remains part of the EU.

Figure 4.2 shows the evolution of the economic impact of the FTA scenario relative to the counterfactual over time, while Figure 4.3 shows the equivalent analysis for the WTO scenario. Both figures show that some of the negative impacts are realised ahead of the UK’s anticipated formal exit in 2020. This is largely because companies and households anticipate policy changes. As a result, they respond to lower levels of output and employment in the future associated with a potential UK exit from the EU, causing the economic impacts to be brought forward in the short-term.

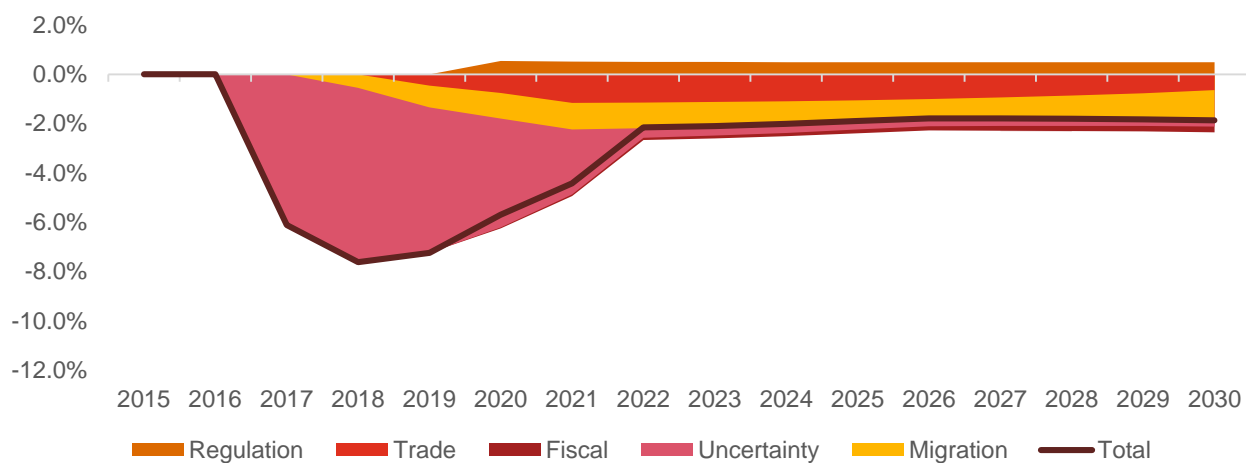
Both charts also show that the cumulative effects of a reduction in migration on labour supply and lower FS sector growth build up gradually over time.

Figure 4.1: Real FS GVA in levels under the counterfactual, WTO and FTA scenarios



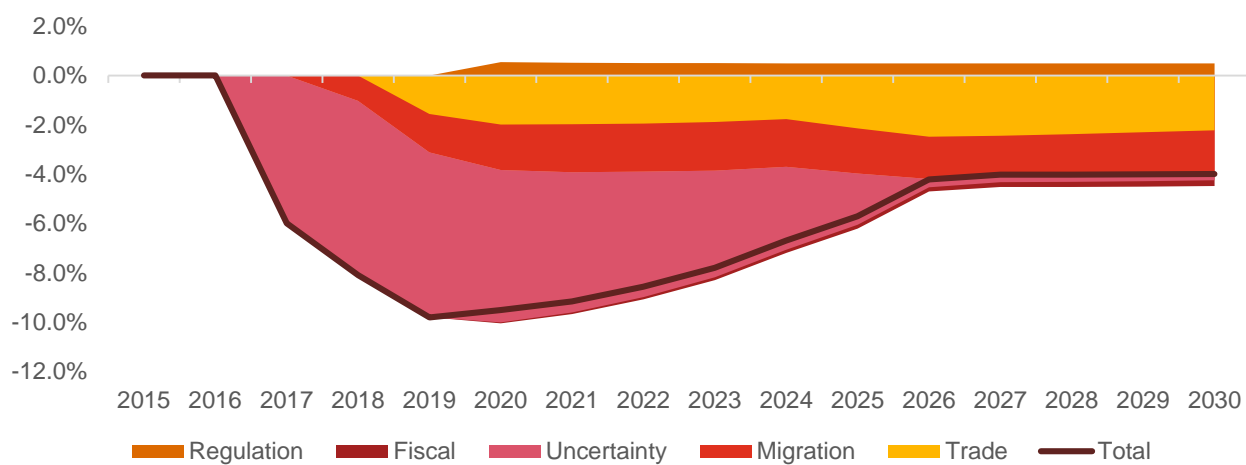
Source: PwC analysis

Figure 4.2: FTA scenario results – percentage difference from the level of real UK FS GVA in the counterfactual



Source: PwC analysis

Figure 4.3: WTO scenario results – percentage difference from the level of real UK FS GVA in the counterfactual



Source: PwC analysis

### 4.2.2 Impact on UK FS sector employment

We also examine the impact of the reduction in output and activity associated with the UK's exit from the EU on employment in the FS sector and the wider economy.

The reduction in economic output and activity associated with a potential UK exit from the EU results in a negative impact on demand and investment in the FS sector and the wider economy, which leads to a reduction in employment.

Our modelling suggests that employment in the FS sector could decline by almost 6% in the FTA scenario, and around 8% in the WTO scenario in 2020 relative to the counterfactual (see Table 4.2). This translates into a reduction in FS employment of around 70,000-100,000. In the long-term, employment in the sector is estimated to decline by 0.7%-2.4% compared to the counterfactual in both scenarios. This translates into a reduction in FS employment (the number of people employed) of around 10,000-30,000 in 2030 relative to the counterfactual in the exit scenarios (see Table 4.3).

In percentage terms, the reduction in employment is lower in comparison to the impacts on FS GVA, meaning that output falls at a higher rate in comparison to employment in the sector. This is because sectors with higher levels of export intensity, including the FS sector, benefit from the productivity-enhancing effects of trade. A reduction in exports from the FS sector could therefore have a negative impact on sector productivity. Therefore, the differences between FS employment and GVA impacts largely reflect the negative productivity impacts in the FS sector due to the fall in trade.

However, it should be noted that lower migration accounts for a significant proportion of this reduction in employment in the EU exit scenarios.

Table 4.2: Percentage difference from the counterfactual number of employment

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
FS employment	-5.8%	-0.8%	-0.7%	-8.2%	-6.1%	-2.4%

Source: PwC analysis

Table 4.3: Impact on total FS employment relative to counterfactual in different EU exit scenarios (000s)

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
FS employment	-70	-10	-10	-100	-80	-30

Note: Figures are rounded to the nearest 10,000.

Source: PwC analysis

### 4.2.3 Impact on the UK economy

As shown in the PwC/CBI report, Table 4.4 summarises the impacts on different expenditure components of GDP under both the FTA and WTO scenarios. The largest impact is on consumption, investment and net exports.

In the short-term, investment declines by around 16%-26% under the scenarios relative to the counterfactual. Investment gradually recovers in the long-term so that the impact of a potential UK exit on investment is between 2% and 10% in 2030, relative to the counterfactual. The significant reduction in investment in the short-term has a particularly important impact on the FS sector as it could lead to lower demand for loans as well as debt and equity issuance. This, in turn, translates into lower loan growth and interest revenues, and lower banking fees and commissions for banks.



Table 4.4: Exit scenario results – percentage difference from counterfactual levels of expenditure categories

	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
Consumption	-2.8%	-1.8%	-1.8%	-5.5%	-5.3%	-5.2%
Investment	-16.4%	-4.7%	-1.7%	-25.8%	-14.8%	-9.9%
Government expenditure	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Exports	-3.6%	0.4%	0.7%	-9.8%	-8.4%	-6.0%
Imports	-4.8%	-0.6%	-0.3%	-11.9%	-10.5%	-7.8%
<b>Total impact on GDP</b>	<b>-3.1%</b>	<b>-1.1%</b>	<b>-1.2%</b>	<b>-5.5%</b>	<b>-4.1%</b>	<b>-3.5%</b>

Note: Numbers in the columns may not add up exactly due to rounding.

Source: PwC analysis

There is a negative impact on household consumption of around 1.8%-5.2% relative to the counterfactual in both scenarios as a result of the broader decline in industrial sector output and investment, leading to overall lower levels of income and wealth for households, and in turn, lower consumer spending.

Government expenditure is also estimated to increase by 0.6% in 2030 in both scenarios, which provides a small positive boost to the economy. This is largely the result of the share of the budgetary saving that is assumed to go towards investment.

A comparison of the impacts between UK GDP and FS GVA shows that the FS sector is disproportionately impacted from the UK leaving the EU (see Table 4.5). For example, in the short-term, FS sector GVA declines by around 5.7%-9.5% compared to the estimated decline of 3.1%-5.5% in UK GDP by 2020. Over the long-term, FS sector GVA declines by 1.8%-4.0%, whereas the impact on UK GDP is around 1.2%-3.5%.

The relative differences in the magnitude of impacts on the FS sector vis-à-vis the rest of the UK economy is largely due to the uneven distribution of the impacts of policy changes across industry sectors. This result underlines the deep linkages between the sector and the wider economy, as well as the highly cyclical nature of growth in the industry.

In addition, the FS sector has relatively high levels of export intensity in comparison to the UK economy, and is therefore, more adversely impacted by an increase in trade barriers. The sector's exposure to financial markets also makes it more vulnerable to the effects of uncertainty. The FS sector also loses out from the crowding out effect associated with the assumed increased in fiscal spending by the UK government.

Table 4.5: Comparison of impacts on real FS GVA and UK GDP in percentage differences from levels in the counterfactual

Impacts	FTA scenario			WTO scenario		
	2020	2025	2030	2020	2025	2030
Impact on FS GVA	-5.7%	-1.9%	-1.8%	-9.5%	-5.7%	-4.0%
Impact on UK GDP	-3.1%	-1.1%	-1.2%	-5.5%	-4.1%	-3.5%

Note: The distinction between GVA and GDP is described as follows: GVA is typically used to measure the contribution to the economy at the industry sector level, and is the difference between output and intermediate consumption for a given industry sector. GVA is used in the estimation of GDP, specifically, GVA plus net taxes on products equals GDP at the whole economy level. While GDP and GVA are not directly comparable, both measures capture output and activity in the economy.

Source: PwC analysis

### 4.3 Limitations to the analysis

We recognise that there are many areas of uncertainty relating to the results. First, the eventual impacts on the wider economy would depend on the actual access arrangements that are agreed between the UK and the EU. It would affect the degree to which banks authorised in the UK would continue to serve EU clients and businesses.

We also recognise that the counterfactual scenario is subject to many other uncertainties surrounding these long-term growth projections. For example, there are currently some material risks to the global economy, such as a more marked slowdown in the Chinese economy and escalating problems in commodity-exporting economies, which could affect the UK's future growth prospects in a significant way. But, in general, these would apply whether the UK remains within or chooses to leave the EU.<sup>18</sup>

Second, our model does not assume any proactive monetary or fiscal policy response to EU exit. For example, the Bank of England could respond to potential increased uncertainty by providing additional market liquidity or quantitative/credit easing in order to restore market stability, particularly in the immediate aftermath of a vote to leave.

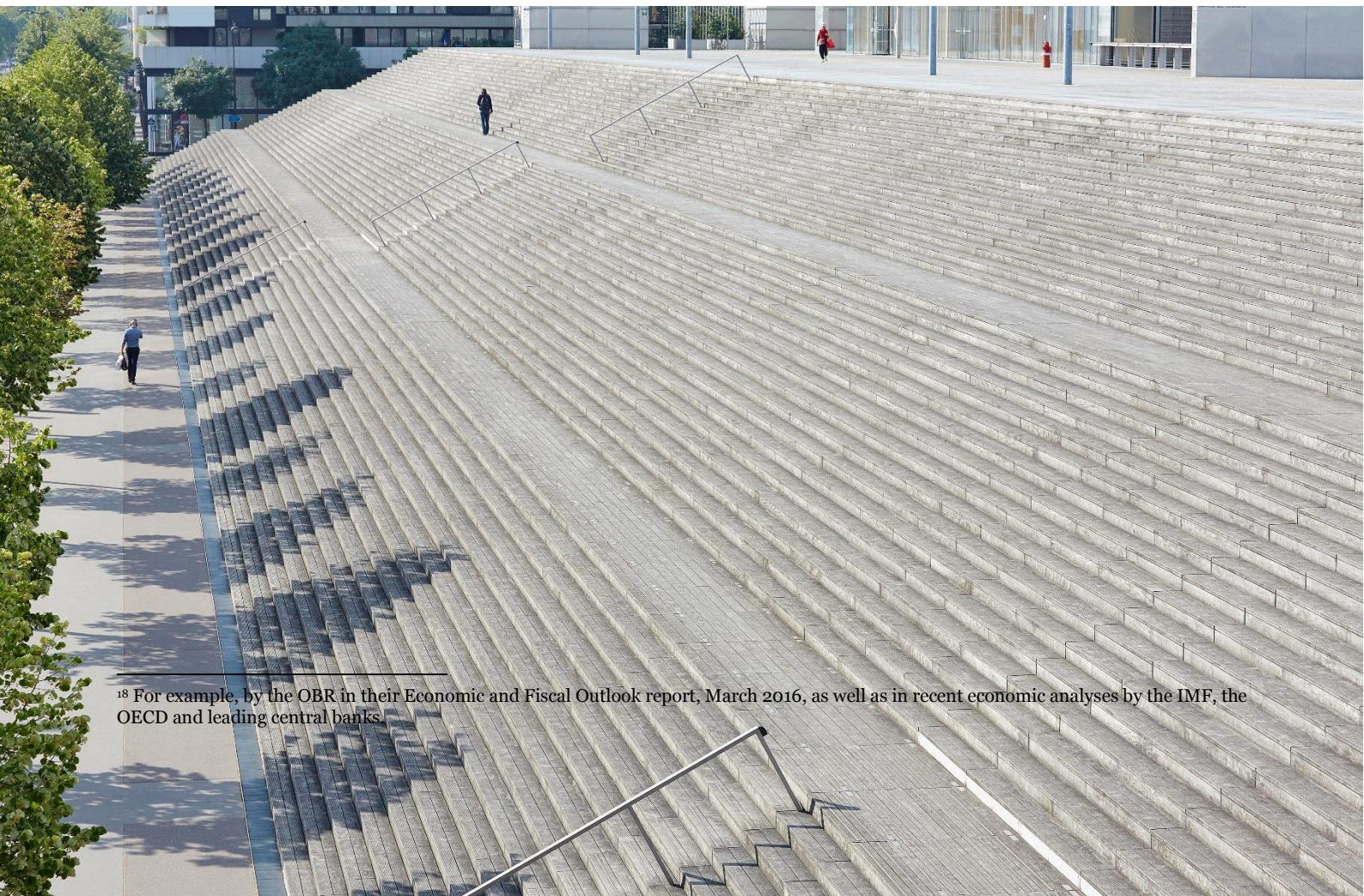
As such, our estimates can only be indicative of the broad direction and order of magnitude of economic impact that could arise following a potential UK exit from the EU.

Greater digitalisation in the FS sector and the rise of “fintech” also means that the FS sector is facing technological disruption to existing business models. The growth of fintech could further accelerate the fragmentation of financial services in Europe, which reduces the UK's ability to “re-shore” or attract businesses to establish FS operations in the UK.

More detail on the underlying assumptions used in our modelling is provided in Annexes B-F of the PwC/CBI report.

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<sup>18</sup> For example, by the OBR in their Economic and Fiscal Outlook report, March 2016, as well as in recent economic analyses by the IMF, the OECD and leading central banks.





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# 5 *Potential impact of relocation in banking activity*

In this section, we provide illustrative economic impacts of a relocation of some banking activity from the UK to other financial hubs, which leads to a slowdown in FS sector growth.

## **5.1 *Potential bank responses to changes in market access***

The impact on the FS sector is dependent on the UK FS industry's continued access to markets via the passporting or equivalence regimes, as well as companies' location decisions in response to changes to market access.

The ability of banks and other financial institutions to continue providing financial services to the Single Market could become restricted following the UK's exit from the EU. If the UK does not agree any access arrangements with the EU, it is likely that continued market access may be assessed on the basis of the EU's existing third country regimes.<sup>19</sup> However, even if the UK avails itself to all of the EU's third country regimes that are currently available, this still may not cover core banking activities including lending and deposit-taking, payments, and membership of CCPs and regulated markets. For instance, non-EU banks are required to be licensed to conduct deposit-taking activities in individual Member States.

In the short-term, banks and other financial institutions based in the UK could adapt to market access restrictions, for example, by establishing structures in the EU that would enable them to continue providing banking services to EU clients. These effects have been captured in the PwC/CBI analysis as an increase in trade barriers banks face in providing services cross-border.

However, there are some market infrastructure activities, such as, trading and settlement activities that could also be affected following the UK's exit from the EU. The UK is currently the global and European centre for foreign currency exchange and euro-denominated wholesale banking. The UK accounts for 45% of total global euro trading.<sup>20</sup> However, its position has recently been challenged by European Central Bank (ECB), whose "location policy" would have required euro-denominated trades to be cleared by CCPs based in the Eurozone.

Although the UK successfully challenged this decision on the basis of discrimination, it is likely that the UK would lose the right to challenge the ECB's decisions on such matters following its exit from the EU. This means that some trading activity could migrate to the EU, and with this, supporting infrastructure for financial markets in the UK, including exchanges, clearinghouses and CCPs. Access to market infrastructure and CCPs are also likely to influence banks' location decisions.

Therefore the balance of factors that influence companies' location decisions, including proximity to the EU single market, could tip in favour of relocation of some activities to other EU financial hubs. This is likely to affect financial institutions that have used the UK as a hub to gain access to 27 other EU Member States. This means that, over the medium-term, financial institutions may relocate activities that particularly relate to serving EU customers. These changes could also reduce the incentives for foreign banks to both retain and locate new international activities in the UK in the future.

By way of illustration, we model the impact of a relocation of internationally-mobile FS activity. This is modelled as a slowdown in growth in the sector by 0.3 percentage points per annum. This is based on an assumption of a 25% reduction in banking activity that can be attributed to non-EU banks. As in the PwC/CBI report, we have also assessed these scenarios against a counterfactual scenario where the UK votes to remain in the EU. The underlying assumptions used in our model are set out in Section A.6.

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<sup>19</sup> Third countries refer non-EU states, one of which the UK will become should it leave the EU.

<sup>20</sup> Source: BIS Triennial Central Bank Survey (2013).



## 5.2 Impact on the UK FS sector

As a result of the gradual relocation of activity, FS GVA is estimated to decline by an additional 2% in 2020, relative to the counterfactual (see Table 5.1). This negative impact represents a reduction of around £3 billion, at 2015 values. The impact also reflects the negative knock-on impacts on lower demand for FS products and services in the UK by non-EU banks. These negative impacts are amplified over time. As a result, the negative impact gradually increases to 3.3% in 2030, relative to the counterfactual. This represents a reduction of around £4 billion, at 2015 values.

*Table 5.1: Percentage difference in real FS GVA from levels in counterfactual scenario as a result of relocation of banking activity*

Impacts	2020	2025	2030
Relocation of banking activity	-2.09%	-3.34%	-3.25%

Source: PwC analysis

## 5.3 Impact on the UK economy

Table 5.2 shows the impact on UK GDP as a whole. The relocation in activity could result in additional economic costs of around 0.4% of GDP in 2030 relative to the counterfactual. If these impacts were valued in relation to 2015 GDP, they would represent a loss of around £0.7 billion in 2020, increasing to around £8 billion in 2030.

The impact of a relocation in FS activity has a large impact on the UK economy, and underlines the deep linkages between the sector and the wider economy.

*Table 5.2: Percentage difference in real UK GDP from levels in counterfactual scenario as a result of relocation of banking activity*

Impacts	2020	2025	2030
Relocation of banking activity	-0.04%	-0.21%	-0.42%

Source: PwC analysis

## 5.4 Limitations to the analysis

Our analysis seeks to capture some of the potential reactions of the FS sector following the UK's exit from the EU. However, there are other possible behavioural and policy responses that we have not been able to capture in our model. For example:

- Government policy responses could either accelerate or counter the potential relocation of banking activity to Europe. For example, other EU Member States with aspirations to develop their own FS hubs could implement policies (e.g. upskilling its labour force and developing market infrastructure) to attract FS activity seeking to relocate from the UK. Conversely, the UK may seek to improve the UK's business environment to encourage foreign investment in the UK. For example, the UK has sought to capitalise on the internationalisation of the renminbi by hosting the first European renminbi trading venue outside Asia.
- Our analysis only takes into account the potential responses of a sub-set of the UK banking sector, namely non-EU banks. It does not consider the possible responses of UK-incorporated banks with sizeable European operations who could nevertheless be affected by a potential UK exit. These banks may seek to bolster, or at least maintain their European operations – possibly at the expense of their UK operations – in order to hedge against a potential adverse outcome where the FS sector faces restrictions to access EU markets. It also does not take into account the responses of other sub-sectors of FS, namely insurers, investment companies and market infrastructure providers such as exchanges, clearinghouses, payment providers and others. Our analysis suggests that other sectors could be affected by market access restrictions, which could also prompt some relocation of activity to the EU where there are lower frictional costs associated with providing services across borders. These have not been modelled

explicitly. If they were, the negative impacts of the resulting FS sector slowdown could be even more significant.

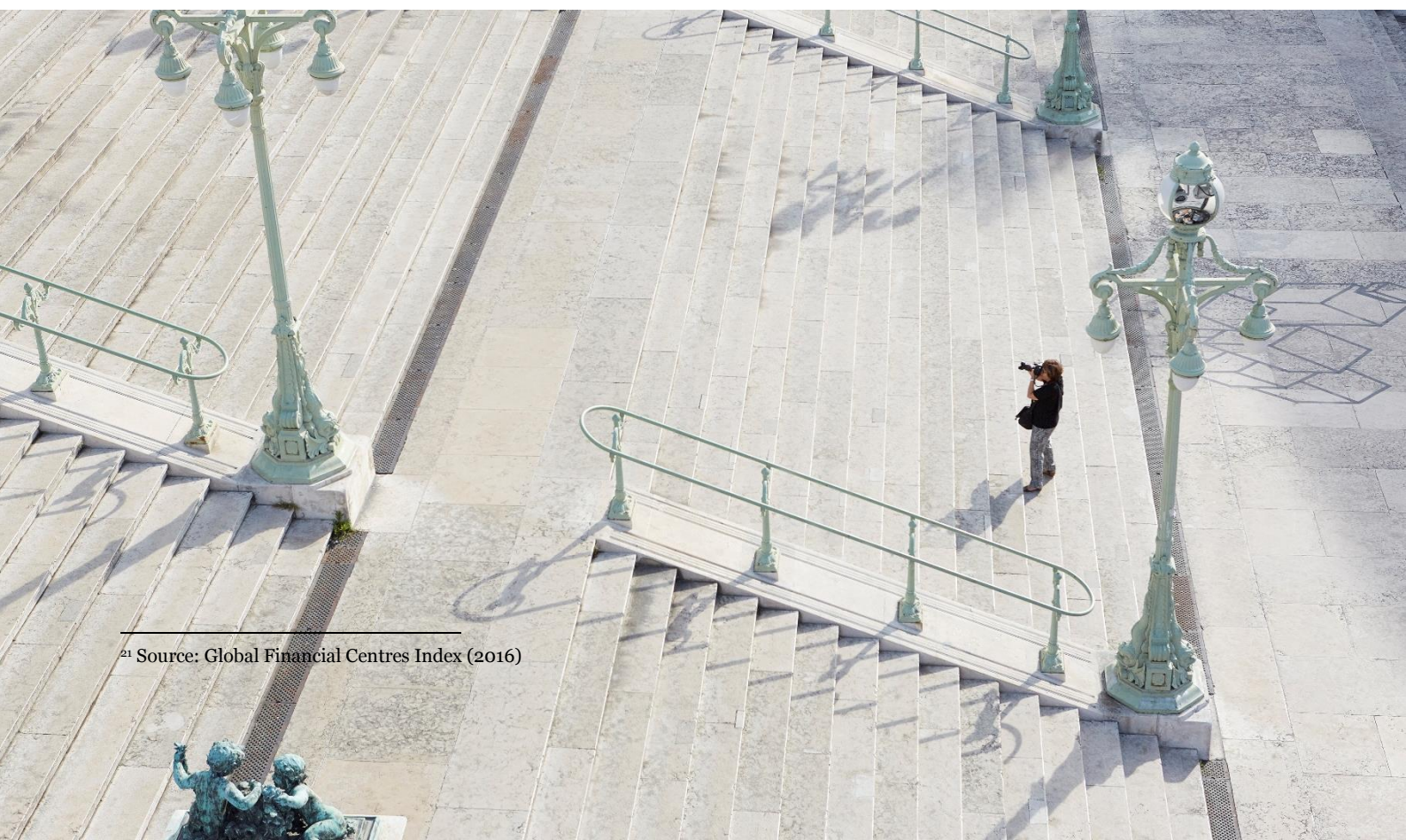
It is unlikely that the UK's exit from the EU would result in the UK losing its status as the premier international financial centre in the short-term. The UK would continue to retain its existing advantages that are attractive to FS companies and investors, such as a time zone bridging America and Asia, access to skills, a strong and stable legal system, the dominance of English as the primary business and financial language. Fixed investment also tends to be long-term rather than short-term, which makes it less vulnerable to sudden reversals in investor sentiment.

In addition, there is some way to go before other European financial centres, such as Frankfurt, Paris, Luxembourg and Dublin are able to compete with London's current position. For example, the Global Financial Centres Index currently ranks London as the top financial centre in the world, with the next highest-ranked European centre – Luxembourg – appearing at 14<sup>th</sup> position.<sup>21</sup>

However, if banks, investment companies and market infrastructure service providers gradually relocate to the other European financial hubs over the long-term, this could lead to a slow and steady shift in the centre of gravity for FS activity from London to other European hubs, leading to an erosion of FS activity and jobs in the UK. In addition, if the ECB's location policy is enforced following the UK's exit from the EU, some trading activity could migrate to the EU.

These changes could also result in a gradual migration of support services that are deeply linked to the FS sector, including the legal, professional and business services sectors, in order to serve these clients in other emerging financial hubs. This loss of critical mass could have an impact on the UK's dominance as an international financial centre. The loss of activity would also have knock-on impacts on the wider UK economy via supply chain linkages and employment.

Our study also does not cover any potential political knock-on impacts of the UK voting to leave the EU, including the possibility of a second referendum on Scottish independence after a UK vote to leave the EU. This could have a significant impact on the banking and asset management sectors due to the size and importance of the FS sector to the Scottish economy. The risk and uncertainty of a second referendum in Scotland could also accelerate banks' decisions to relocate elsewhere, particularly for financial institutions with significant operations in Scotland.



<sup>21</sup> Source: Global Financial Centres Index (2016)

# *Annexes*



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# *Annex A: Description of impacts on the FS sector*

In this Annex we first outline the economic context and key issues associated with a potential UK exit from the EU in relation to the FS sector. We then set out the potential impacts of the UK's exit from the EU on the FS sector, and describe how we have modelled changes in trade, migration and regulation in different EU exit scenarios, within the context of the FS sector. We also discuss the justification for these assumptions in our modelling as well as the uncertainties surrounding them. Please refer to the PwC/CBI report for more detailed information on the assumptions made in our modelling.<sup>22</sup>

The FS sector performs an important role in financial intermediation, by facilitating the flow of credit between lenders and borrowers, providing maturity and risk transformation services, handling payment systems and other vital services. Banks and other financial institutions also help businesses manage their risk and investments, raise capital, and facilitate efficient flows of domestic and international capital. The sector is also an important source of demand for other sectors, namely legal, accounting and other professional services sectors.

Our analysis focuses on the FS sector, as defined in Section K of the UK Standard industrial classification of economic activities (SIC) 2007. This includes the following types of activities, as identified in national economic data:

- **Banking and financial service activities, except insurance and pension funding** (UK SIC Sector 64): this refers to banking activities, which include monetary intermediation (e.g. banks), holding companies, trusts, funds and similar financial entities, and other financial service activities (e.g. financial leasing) and account for 54% of total FS sector activity in GVA terms.
- **Insurance, reinsurance and pension funding, except compulsory social security** (UK SIC Sector 65): This includes life and non-life insurance and reinsurance, and pension funding activities. This sub-sector accounts for 31% of total FS sector activity in GVA terms.
- **Auxiliary FS and insurance services** (UK SIC Sector 66): This includes fund management and brokerage activities, CCP activities, activities of insurance agents and brokers and other activities auxiliary to insurance and pension funding. This sub-sector accounts for 16% of total FS sector activity in GVA terms.

Under this definition, in 2014 the most recent year for which data is published, the FS sector contributed around £126 billion in terms of GVA, accounting for around 8% of total UK GVA. Over the same period, it also directly employed around 1.1 million people, around 3.6% of total UK employment.

## ***A.1 Uncertainty***

### **Economic context and key issues**

A vote for the UK to leave the EU is likely to be associated with significant uncertainty over the UK banks and investment companies' continued access to the Single Market, as well as changes to the EU-UK trading relationships on other major exporting sectors. Below we discuss some of the key impacts of uncertainty that could be associated with a decision for the UK to leave the EU.

### **Potential key impacts of uncertainty on the FS sector**

#### **Increase in corporate and sovereign credit risk**

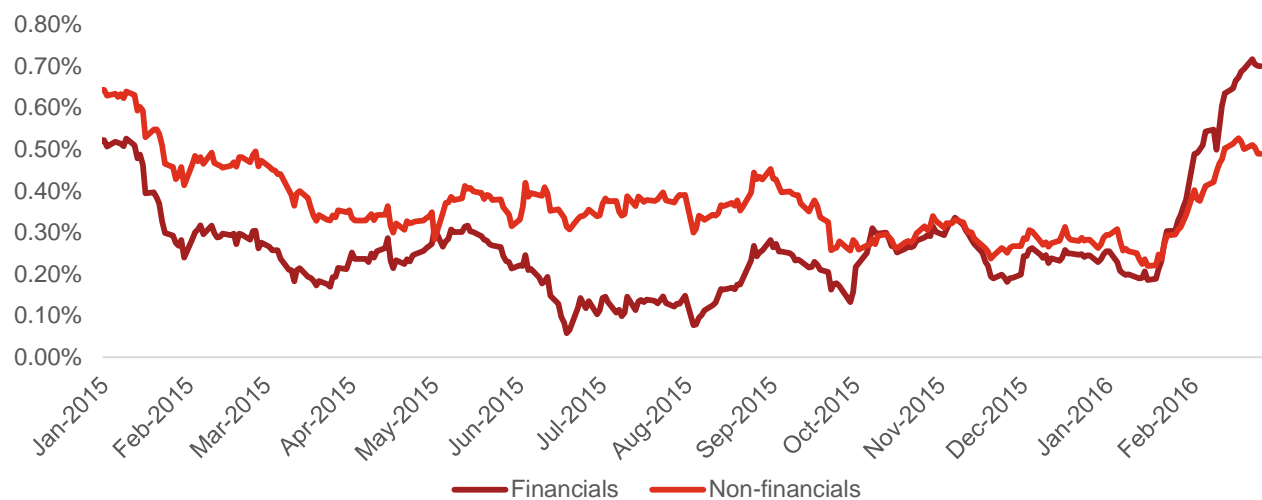
The increase in uncertainty is likely to result in higher risk premia on sterling-denominated financial assets. This has, to an extent, already been observed in recent movements in sterling corporate debt markets. As Figure

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<sup>22</sup> PwC report for the CBI (2016).

A.1 shows, the spread on UK investment grade financial corporate debt has widened by 40 bps relative to European corporate bonds between January 2016 and February 2016.

*Figure A.1: Spread differentials between UK and EU investment grade (10-year A-rated) corporate bonds*



Source: Thomson Reuters Datastream, PwC analysis

The impact on credit risk could be particularly pronounced for UK financial institutions with significant cross-border business with the EU. The potential loss of access to the EU Single Market could put pressure on the export earnings of UK businesses.

A sovereign credit rating downgrade could result in investor outflows from UK gilts and other sterling assets. For example, the change in the UK's outlook from neutral to negative in June 2015 by S&P was associated with non-resident outflows from UK gilts of around £4 billion.<sup>23</sup> The near failure of a UK gilt auction in January 2016 also indicated some degree of elevated risk and uncertainty in gilt markets.<sup>24</sup> UK fund managers also suffered the largest month of outflows in January 2016, pushing total funds under management £20 billion lower than levels recorded in January 2015.<sup>25</sup> A heightened awareness of the possibility of a UK exit from the EU may have been one factor behind these events (though not the only one), and this suggests there could be a significantly larger adverse market reaction if the UK actually did vote to leave the EU. By contrast, sterling asset markets may calm down somewhat if this risk is removed by a vote to remain in the EU on 23<sup>rd</sup> June.

A downgrade in the UK's sovereign debt rating could have knock-on impacts on UK corporate credit ratings, particularly in the financial sector. Higher sovereign risk is likely to have an impact on cost of borrowing for banks and other financial institutions to access wholesale funding. Research by BIS (2011) suggests that rises in sovereign risk adversely affects banks' funding costs via the following channels: (1) losses on the holdings of government debt weaken banks' balance sheets, which increases bank risks and, therefore, funding costs; (2) higher sovereign risk also reduces the value of bank collateral in order to raise wholesale funding and liquidity; and (3) sovereign downgrades tend to flow through to lower ratings for domestic banks. These factors combined are likely to put upward pressure on their cost of funding. This could, in turn, have significant impacts on the cost of financing for other UK companies.

### **Sterling depreciation**

The recent depreciation of sterling at the end of February 2016 to 7-year lows against the US dollar could be another manifestation of uncertainty in financial markets over the possibility of the UK leaving the EU. This has not been the only factor in play – the role of delayed UK interest rate rises and underlying concerns about a

<sup>23</sup> Deutsche Bank (2016).

<sup>24</sup> Bloomberg (2016a).

<sup>25</sup> Investment Association (2016).

widening UK current account deficit should also be acknowledged – but it seems likely to have played a part in recent sterling weakness.

If the UK were to vote to leave the EU, this could lead to potential sell-offs of UK assets and capital outflows, exacerbating the recent sterling depreciation. Some market commentators have suggested that sterling could depreciate by a further 10%-15% in the aftermath of the referendum.<sup>26</sup>

### Impact on business confidence

The uncertainty associated with a possible UK vote to leave the EU could also have a negative impact on business confidence more generally. A recent CFO survey conducted by Deloitte suggests that the net balance of CFOs expect capital expenditure by UK corporates to decrease over the next 12 months. Uncertainty over the economic and financial environment, and a possible UK exit from the EU are major factors explaining this trend. It also reports that more than three-quarters of CFOs say that now is a bad time for UK corporates to issue equity, compared to less than half in the final quarter of 2015. The reduction in investment activity could lead to lower demand for loans as well as debt and equity issuance, which results in lower loan growth and interest revenues, and lower banking fees and commissions.<sup>27</sup>

Recent data from the ONS suggests that the current account deficit has increased for the fourth consecutive year since 2011, of which 80% is attributable to net FDI earnings. The widening deficit raises concerns that further deterioration in business confidence could put at risk the UK's ability to attract investment inflows that are needed to finance the current account deficit.

### Modelling the impact of the UK exiting the EU on uncertainty: key assumptions

The potential impacts of EU exit discussed above could all contribute to an increase in the cost of capital for UK companies in both the FS and other sectors. This is likely to feed into lower business investment across the whole of the UK economy.

We have used past experiences as a guide to the order of magnitude of a potential increase in the risk premium following a decision to leave the EU. There is no precedent for a country's exit on this magnitude, however there Eurozone crisis of 2011-12 offers a fairly recent example of how economic uncertainty translates into elevated risks for corporate debt. The observed CDS spread increased on average by around 50 bps during the aforementioned Eurozone crisis.<sup>28</sup> We have therefore calibrated our model based on an increase in the cost of debt of 50 bps which broadly reflects the experience of the Eurozone crisis. We also assume a 20 bps increase in the cost of equity in the EU exit scenarios. These are summarised in Table A.1

*Table A.1: Assumed risk premium impacts under alternative EU exit scenarios (relative to the counterfactual with continued EU membership)*

	FTA scenario	WTO scenario
Increase in cost of debt	50 bps	50 bps
Increase in cost of equity	20 bps	20 bps
Duration of impact*	5 years	9 years

Source: PwC assumptions

\*Risk premia peak at the levels shown in 2017-18 in both scenarios, but then fade away more gradually in the WTO scenario.

For simplicity, we apply the same size of cost of capital impacts to the model for both scenarios. This reflects the fact that these impacts are likely to manifest themselves from the moment when the EU referendum decision is known in mid-2016, while it could be many years before it is clear which post-exit scenario is being followed. Instead, we differentiate the two exit scenarios based on the duration of the cost of capital impact, which we

<sup>26</sup> Oxford Economics (2016) suggests that sterling could depreciate by 15% relative to the dollar in the short-term, and in the medium-term the value of sterling could be around 9% below their baseline. While JP Morgan (2016) suggests that the rate of sterling depreciation could be in the order of 10%.

<sup>27</sup> Deutsche Bank Research (2016)

<sup>28</sup> This is based on a comparison of 5-year CDS spreads over 5-year corporate bond spreads based on UK index.



assume would last for a total of 5 years in the FTA scenario (i.e. ending in 2021), but for 9 years in the WTO scenario (i.e. ending in 2025).

### **Uncertainties and caveats relating to our model assumptions**

It is difficult to calibrate the scale and duration of an uncertainty impact of this kind given the unprecedented nature of a possible UK exit from the EU. We looked at a variety of past events such as UK exit from the ERM in 1992, the global financial crisis of 2008-9 and the Eurozone crisis of 2011-12, but none offer a perfect parallel.

It could be argued that calibrating our estimates to the Eurozone crisis may understate the potential impact of a UK vote to exit from the EU because:

- Although the UK was negatively impacted by the secondary effects of the banking and sovereign debt crisis in the Eurozone crisis countries, the impact was less directly on the UK than would be the case if the UK were to vote to leave the EU; and
- The UK benefitted in 2011-12 from a “safe haven” effect by contrast to the Eurozone, which helped to keep gilt yields relatively low over this period. In the case of a potential UK exit from the EU, however, the opposite might be the case, with capital flowing out of the UK to perceived safe havens elsewhere in the world.
- On the other hand, we have assumed that the duration of the cost of capital increase could be longer in the case of EU exit than for the Eurozone crisis. This seems plausible given the likely timescale for UK exit negotiations, both with the EU and other trading partners, but there is considerable uncertainty around this.

## **A.2 Trade and investment**

### **Economic context and key issues**

Free trade in goods and services is one of the four fundamental freedoms of the EU Single Market. As a result, UK businesses are able to export goods tariff-free to other EU Member States. Similarly, businesses in EU countries can also export goods to the UK without any tariffs being applied to them. The rest of the EU remains by far the largest overseas market for UK goods and services. However, the EU share of total UK goods and services exports has been declining in recent years. UK exports to the EU accounted for around 55% of total UK exports in 1999 but the share has since fallen to 45% (as of 2014).<sup>29</sup>

There is significant variation across sectors in terms of their contribution to the UK’s overall trade balance. Figure A.2 shows the UK’s net exports of goods and services to the EU by sector in 2014. The UK has a surplus of around £10 billion in services trade with the EU, which is due in large part to the £20 billion surplus in trade in financial services and insurance. Almost half of the UK’s FS exports head to the EU.

Figure A.3 shows the breakdown of the type of FS exports and type of financial institution. Although this breakdown is not available by destination country, these primarily consist of Financial Intermediation Services Indirectly Measured (FISIM) and non-FISIM exports.<sup>30</sup> Non-FISIM exports, which include explicitly charged and other financial services, such as commissions, fees and spread earnings, account for the vast majority of FS exports (around 85% based on 2014 data). Monetary financial institutions account for just over half of all FS exports. The UK FS sector is also highly integrated in the European FS supply chain: approximately 15% of the UK FS sector output is exported to the EU as intermediate inputs.<sup>31</sup>

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<sup>29</sup> Trade data for 2015 has not been published – hence we are reporting 2014 figures.

<sup>30</sup> FISIM represents the implicit charge for the service provided by monetary financial institutions paid for by the interest differential between borrowing and lending rather than through fees and commissions.

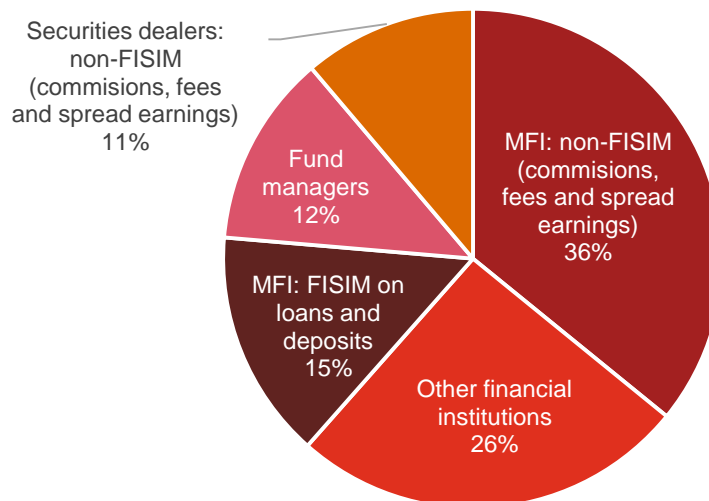
<sup>31</sup> Analysis based on the World Input-Output Database (WIOD).

Figure A.2: UK net exports of goods and services to the EU, 2014



Source: OECD, PwC analysis

Figure A.3: Breakdown of FS exports and type of financial institution, 2014<sup>32</sup>



Source: ONS Pink Book, PwC analysis

One of the key benefits of EU membership to the FS sector is the ability to access the Single Market via the passporting regime. Under the passporting regime, banks and investment companies authorised in an EEA state are entitled to provide services to clients in other EEA states by exercising the right of establishment via a branch or to provide services across borders without further authorisation requirements. The passport regime covers banking services such as deposit-taking and lending, insurance (life, non-life), reinsurance, investment services, the management and offering of UCITS, alternative investment funds, payment services and electronic money.<sup>33</sup> These passporting rights are covered in eight single market directives:<sup>34</sup>

- Capital Requirements Directive (CRD IV) (2013/36/EU);
- Solvency II Directive (2009/138/EC);
- Insurance Mediation Directive (2002/92/EC);
- Markets in Financial Instruments Directive (MiFID) (2004/39/EC);
- Undertaking Collective Investment Scheme (UCITS) Directive (85/611/EEC);
- Payment Services Directive (PSD) (2007/64/EC);

<sup>32</sup> MFIs refer to monetary financial institutions.

<sup>33</sup> See TheCityUK (2014).

<sup>34</sup> Source: PRA – passporting.

- Second Electronic Money Directive (2009/110/EC); and
- Alternative Investment Fund Managers Directive (AIFMD) (2011/61/EU).

A survey by the Centre for the Study of Financial Innovation (CSFI) of financial industry shows that the majority of respondents (around two-thirds) agreed that the biggest benefit to the City of London from EU membership is access to the Single Market.<sup>35</sup>

The passporting regime has enabled banks to reduce or avoid the substantial costs associated with operating local subsidiaries, by converting their subsidiaries into passported branches of another EU entity.<sup>36</sup> Banks and other financial institutions can also eliminate the need for a local legal entity altogether, by using the passport to provide services to EU clients on a cross-border basis. It has also enabled banks and other financial institutions to locate their capital markets business in a hub, such as London, where they can take advantage of market infrastructure located in other Member States remotely, such as trading, clearing and settlement services.<sup>37</sup>

The hub function enables UK-authorised banks to conduct their EU operations via branches instead of subsidiaries, which simplifies dealing with supervisory authorities where multinational franchises are concerned, as the regime enables banks other financial institutions to comply with one set of rules rather than one for every EU Member State in which they operate, as well as the capital and liquidity fungibility that this structure affords.

The introduction of passporting has had a positive impact on UK exports of FS. The passporting regime has facilitated growth in lending to households and businesses across the EU. Nearly two-thirds of global cross-border banking flows involve EU institutions, including UK banks, and intra-EU claims have also grown at a higher rate than other forms of cross-border bank lending.<sup>38</sup> The presence of foreign banking groups provide additional sources of credit for UK corporates, and increases competition in the domestic financial market.

The ability to access the Single Market is one of the factors in attracting international banking institutions to establish their European headquarters in the UK. More than 80% of 2014 FDI inflows into the FS sector originated from non-EEA states (including Switzerland), emphasising the importance of non-EU investment in the UK FS sector. The US alone accounted for almost 50% of FDI inflows into the FS sector.<sup>39</sup> This is especially important in the securities and derivatives business where there are significant barriers to the cross-border provision of services by non-EU entities.<sup>40</sup> Non-EU banks other financial institutions often face non-tariff barriers to providing financial services to EU clients, for example, local licensing requirements and approval to establish local operations, divergent regulatory requirements and differences in accounting standards.<sup>41</sup>

### **Potential key impacts of an EU exit on trade in the FS sector**

The ability of banks and other financial institutions to continue providing financial services to the Single Market could become restricted following the UK's exit from the EU. If the UK does not agree any access arrangements with the EU, it is likely that continued market access may be assessed on the basis of the EU's existing third country regimes.<sup>42</sup> Many of these third country regimes are assessed on the basis of equivalence and reciprocity, meaning that the UK would need to have a regulatory regime equivalent to that in the EU and provides reciprocal access to EU banks and other financial institutions. If the UK does not receive equivalence determinations from the European Commission, this could lead to an increase in NTBs in the cross-border provision of financial services, as banks other financial institutions may face additional licensing and regulatory requirements to provide services to EU clients.

However, even if the UK avails itself to all of the EU's third country regimes that are currently available, this still may not cover core banking activities including lending and deposit-taking, payments, and membership of

<sup>35</sup> CSFI (2015).

<sup>36</sup> Local banking subsidiaries tend to be subject to additional governance and regulatory requirements, such as separate capitalisation. The distinction between a branch and subsidiary is non-trivial from a regulatory perspective, as subsidiaries are usually required to have their own governance and risk management systems, as well as being required to meet local regulatory capital and liquidity requirements.

<sup>37</sup> AFME and Clifford Chance (2016).

<sup>38</sup> Bank of England (2015).

<sup>39</sup> Source: ONS FDI data. This figure includes FDI from Switzerland, which accounts for 10% of inward FDI to the UK FS sector.

<sup>40</sup> AFME and Clifford Chance (2016).

<sup>41</sup> Source: Atlantic Council, Bertelsmann Foundation and the British Embassy in Washington (2013).

<sup>42</sup> Third countries refer non-EU states, one of which the UK will become should it leave the EU.

CCPs and regulated markets. This could therefore have a direct negative impact on trade in FS between the UK and the EU.

In the short-term, banks and other financial institutions based in the UK could adapt to market access restrictions, for example, by establishing structures in the EU that would enable them to continue providing banking services to EU clients. However, the balance of factors that influence location decisions, including proximity to the EU Single Market, could tip in favour of relocation of some activities to other EU financial hubs. This is likely to affect banks that have used the UK as a hub to gain access to 27 other EU Member States. This means that over the medium-term, financial institutions may relocate activities that particularly relate to serving EU customers. We discuss these impacts in more detail in Section A.6.

The impact on different business areas are described below.

### **Retail and investment banking**

Following the UK's exit from the EU, UK banks and investment companies may no longer benefit from the FS passport, and could be subject to restrictions that currently apply to banks from non-EU countries in their dealings with clients and counterparties in the EU. In practice, this could affect both the provision of services on a cross-border basis (in the absence of a branch), and UK banks who currently operate via branches in other EU Member States.

In the case of cross-border services, UK banks may become subject to licensing requirements and face restrictions in dealing with local clients and counterparties, especially where retail clients are involved. For example, non-EU banks are required to be licensed to conduct deposit-taking activities under the Capital Requirements Directive (CRD IV). However, many Member States exercise their discretion by subjecting financial institutions to additional requirements for wholesale banking services including for lending, payment, foreign exchange and custody services. Many Member States also require non-EU financial institutions to (1) establish a local branch or subsidiary in order to obtain a local licence, and, (2) conduct business via these entities.

However, the introduction of the third country entity passport under the Markets in Financial Instruments Directive and Regulation (MiFID II/MiFIR) from 2018 could help mitigate the impact of restrictions to market access in some areas of financial services. The regime would allow non-EU financial institutions to provide cross-border investment and asset management services within the scope of MiFID II to eligible counterparties and professional clients without having to establish a branch in the EU. Financial institutions may avail themselves to the passport as long as it is registered with the European Securities and Markets Authority (ESMA), which is subject to the UK having an equivalent and reciprocal regulatory regime.<sup>43</sup>

Given that the UK has already implemented existing EU legislation and assuming that no significant changes are made to existing regulations, it is likely that the UK's regulatory regime would be deemed equivalent by the European Commission following the UK's exit from the EU. This would therefore enable UK financial institutions to continue providing services within the scope of MiFID II. However, a study by AFME (2016) suggests that this arrangement would not cover major areas of financial services that fall outside the scope of MiFID II passport, including deposit-taking, lending, payment, custody and foreign exchange services, and would not provide access to memberships of regulated markets, CCPs, clearing and settlement systems in other Member States. This also may not cover dealings with retail clients, for which banks and other financial institutions may be required to establish a branch, depending on the requirements of each Member State.<sup>44</sup>

In the case of UK financial institutions who currently operate via branches in EU Member States, they may be required to convert their branches into subsidiaries (i.e. "subsidiarise"), and/or face additional regulatory requirements by the host regulator in order to address local systemic risks, such as capital, liquidity and reporting requirements that currently apply to non-EU banking entities.

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<sup>43</sup> The EU's third country regimes allow non-EU financial institutions to access the EU Single Market, on the condition that they are authorised in a country with an equivalent regulatory regime to the EU's and reciprocates in providing market access to EU financial institutions as well.

<sup>44</sup> AFME and Clifford Chance (2016).



The above requirements are likely to vary to some degree across Member States, meaning that banks face a patchwork of different regulatory requirements across the Member States within which they operate. This increases the cost and complexity of providing services across borders.

It is unlikely that similarly restrictive access requirements are imposed on EU banks that currently operate in the UK, due to the UK's existing open approach towards the provision of financial services across borders. However, UK regulators may make a case-by-case assessment of the regulatory framework for EU banks and investment companies that are based in the UK, especially for those with significant operations in the UK.

## Investment management

The UK's exit from the EU could affect the ability of asset management companies to distribute funds and provide investment management and advisory services.

For example, an access agreement would need to be reached in order for UK companies to continue marketing UK Undertakings for the Collective Investment in Transferable Securities (UCITS) funds in the EU. If no access agreement is reached, this could mean that UK UCITS can only be marketed as a non-EU Alternative Investment Fund (AIF) via each Member State's private placement regime, with additional requirements or restrictions on marketing to retail clients (as opposed to professional clients).<sup>45</sup> UCITS from the rest of the EU may also be ineligible for distribution in the UK under the UCITS Directive passport arrangements.

Similarly, UK Alternative Investment Fund Managers (AIFMs) may no longer benefit from the AIFMD passport when marketing AIFs in the EU, and may have to comply with national private placement regimes for marketing to professional investors. However, the potential introduction of a third country passport under AIFMD for non-EU financial institutions, subject to ESMA's approval, could mitigate the impact on UK AIFMs following the UK's exit from the EU.<sup>46</sup> This is likely to be subject to AIFMD compliance and the implementation of AIFMD-equivalent provisions in the UK.

Table A.2 also shows specific restrictions for market access for third countries.

*Table A.2: Specific market access restrictions for non-EU countries.*

Rule	Requirement
Undertakings for the Collective Investment in Transferable Securities (UCITS) Directive	<ul style="list-style-type: none"> <li>UCITS can only be established in the EU, and therefore the impact on the ability of UK managers to market UCITS to EU clients will be significant. Managers who use the UK as a base to passport funds will require a new settlement to permit the UK to remain a domicile for UCITS. Full compliance with the UCITS Directive would be required.</li> <li>Without a settlement, managers would have to be re-domiciled to an EU country and will need to seek re-authorisation under the UCITS Directive.</li> </ul>
Markets in Financial Instruments Directive and Regulation (MiFID II / MiFIR)	<ul style="list-style-type: none"> <li>In addition to equivalence requirements, third country companies who want to sell their products and services to retail investors in the EU are required to open a branch within EU borders, and the branch would have to meet EU capital requirements.</li> </ul>
Alternative Investment Fund Management Directive (AIFMD)	<ul style="list-style-type: none"> <li>Third country alternative investment managers cannot market AIFs (EU or non-EU) in the EU, or manage EU AIFs.</li> </ul>

Source: PwC analysis

<sup>45</sup> These additional requirements differ across Member State. For example, the UK permits an AIFM to market to retail investors, subject to (1) the AIF must be an EU AIF, (2) the FCA must either have received a regulator's notice to the marketing of the AIF, or has approved the marketing in accordance with UK regulations (e.g. the financial promotion regime of the Financial Services and Markets Act 2000).

<sup>46</sup> ESMA recently published its opinion and advice on applying the AIFMD marketing passport to non-EU managers and funds. However, it should be noted that this regime is yet to be formally agreed and implemented, and no timetable has been given as to the timing of its future implementation. Source: ESMA (2016) press release.

## Market infrastructure

The ability of UK banks and other financial institutions to access market infrastructure, market data and price feeds, and trading services could also be restricted following the UK's exit from the EU. UK banks and investment managers could also lose access to clearing and settlement services provided by EU CCPs.

UK market infrastructure providers also face restrictions serving EU clients and counterparties. For example, under European Market Infrastructure Regulation (EMIR), non-EU clearing houses are not authorised to clear for EU clearing members, EU exchanges and trading venues. EU banks and investment companies may face restrictions in transacting on UK trading venues.<sup>47</sup>

UK CCPs would also need to obtain equivalence determinations in order for derivative transactions cleared for EU counterparties to be subject to lower capital requirements under CRD. While this would probably be a minor issue if the UK retains EMIR rules, it could present a challenge if there is any deviation in interpretation of equivalence (For example, the US and the EU only recently agreed to recognise each other's CCPs in March 2016 following three years of negotiations, due to disagreements over margin requirements and uncertainty over the application of traditional models of joint supervision between the EU and the US).<sup>48</sup>

### Modelling the impact of the UK exiting the EU on trade and investment: key assumptions

A decision to leave the EU could create uncertainty over the UK's continued market access via the passport and system of mutual recognition that is based on the EU framework for mutual regulatory reliance.

It is unlikely that market access arrangements are restored in full, even if the UK receives all possible equivalence determinations from the EU. Therefore, we assume there will be an increase in NTBs regarding the UK FS sector's trading relationship with the EU for the purposes of our modelling. By this we mean an increase in NTBs, or "behind-the-border" costs such as regulatory requirements, language, legal barriers, and other transaction costs add to the costs of trade. As a result of NTBs to services trade, the price of services could increase, not because the real resource costs of production have gone up, but because incumbent companies are able to earn economic rents. Separately and in addition, the presence of NTBs also increase the real resource cost of doing business.

For example, should the UK lose the benefits of the single passport for financial services, it is likely that UK banks would have to face higher NTBs when providing services to EU clients, such as higher capitalisation requirements (should they be required to establish a subsidiary in the EU). These NTBs are likely to persist unless the UK agrees an FTA with the EU that also covers services.<sup>49</sup>

As part of our modelling of the potential costs and benefits of the UK leaving the EU, we have sought to measure the current NTBs applied to trade between the UK and EU and non-EU countries (see Table A.3). Our estimates of NTBs are calculated econometrically using a gravity model of international trade, which is a standard approach used in the academic literature to estimate the impact of trade barriers. Estimates from our econometric analysis suggest that the "protection rate" – a measure of the level of NTBs – show that the UK currently has a lower protection rate in exports of financial services to the EU, compared to non-EU countries, which shows that EU membership has contributed to lowering NTBs on FS trade.

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<sup>47</sup> Analysis by AFME and Clifford Chance (2016) suggest that these restrictions could apply with respect to shares admitted to trading on a regulated market or on an EU trading venue, as well as for OTC derivatives.

<sup>48</sup> See European Commission (2016) press release, Committee on Capital Markets Regulation and the Financial Markets Law Committee (2015) and Dechert (2016).

<sup>49</sup> However, it is worth noting that the Single Market in services is still in progress, and there are ongoing efforts to drive greater harmonisation of national rules across the EU. See European Parliamentary Research Service (2014).

Table A.3: NTBs (in ad-valorem tariff equivalents) faced by UK exports to EU and non-EU countries<sup>50</sup>

	Exports		Imports	
	Non-EU (%)	EU (%)	Non-EU (%)	EU (%)
Business services	27.1	23.8	62.3	33.3
<b>Financial services</b>	<b>80.2</b>	<b>71.4</b>	<b>64.8</b>	<b>88.6</b>
Services	44.5	35.6	16.0	28.6
Food and accommodation	538.6	303.6	125.0	175.9
Other manufacturing	8.0	12.7	37.4	33.3
Chemistry	12.4	12.7	10.5	16.6
Transport equipment	23.1	24.6	28.1	57.7

Source: PwC analysis

Our analysis also takes into account the impact of changes in trading relationships on other major UK industry sectors. Following the UK's exit from the EU, the UK would also no longer have automatic access to the EU Single Market and it would be at risk of becoming liable for external tariffs levied on many third party countries to access other key European markets on goods trade. We also estimate the impact of greater regulatory divergence on NTBs – not only on services trade – but on goods trade as well. The negative trade impact on other industry sectors are also likely to result in lower output and employment, which would have negative knock-on impacts on the FS sector, as a result of lower levels of aggregate demand in the UK economy.

We therefore modelled two scenarios to reflect the potential changes in tariffs and NTBs on UK trade with the EU, including the FS sector:

- FTA scenario:** NTBs on trade between UK-EU would increase by one-quarter of the differential between the NTBs faced by UK exports to the rest of the world and the EU. We assume that the UK would receive equivalence determinations by the European Commission. However, the UK FS exports to the EU nevertheless face higher NTBs. This is because even if the UK's receives equivalence determinations from the EU, these will not cover banks' ability to provide cross-border services in a number of core areas.<sup>51</sup> The increase in NTBs in other sectors reflect some regulatory divergence between the UK and the rest of the EU in other industry sectors.<sup>52</sup> In addition, the UK manages to negotiate a FTA deal with the EU. This means that a continuation of zero-tariff trade in goods. Existing FTAs between the EU and other countries are grandfathered such that they continue to apply to the UK. In our modelling, we have also assumed that the UK takes advantage of its ability to pursue its own external trade policy independently by negotiating an FTA with the US. The UK would also be able to accelerate their trade negotiations with the US.<sup>53</sup> The US-UK FTA would then be implemented in 2021.
- WTO scenario:** NTBs on trade between UK-EU would increase by three-quarters of the differential between the NTBs faced by UK exports to the rest of the world and the EU. This reflects a greater increase in NTBs faced by financial institutions, which is due to the more limited nature of equivalence determinations, as well as major divergence between regulation and standards between the UK and the rest of the EU in other industry sectors. In addition, the UK fails to strike a trade deal with the rest of the EU – hence the tariffs on goods trade with the EU revert to MFN basis. When the UK exits the EU in 2020, existing FTAs between the EU and the other countries would need to be re-negotiated. Trade with those countries revert back to a WTO MFN basis. We assume that the re-negotiations take 5 years to complete (this is shorter than historical EU trade negotiations, as we assume that the UK is able to

<sup>50</sup> The sectors in the table form 82% of total UK exports in 2011.

<sup>51</sup> These areas include lending and deposit-taking, foreign exchange or other investment banking services that are outside the scope of MiFID II.

<sup>52</sup> This is consistent with the view of AFME and Clifford Chance (2016) which uses the EU FTA with Canada as an example: Although the FTA to enable cross-border portfolio management services to professional clients and some other areas of FS subject to an equivalence assessments, this would not preclude the national authorisation or registration requirements.

<sup>53</sup> Potentially on the basis of current TTIP negotiations.



accelerate discussions once it exits the EU), and that FTAs with those countries would be implemented in 2026. We also assume that the FTA with the US would take longer to negotiate, partly because the UK would conduct these negotiations in parallel with other re-negotiations. We assume that the FTA with the US would take effect in 2026.

## Uncertainties and caveats relating to our model assumptions

In practice, it is difficult to calibrate the extent of the NTB decrease associated with an increase in market access restrictions for the UK FS sector, for two reasons:

- The attribution NTBs to specific elements of the passporting and mutual recognition regime is constrained by data availability.
- The potential restrictions on market access that could be put in place for the UK FS sector are highly uncertain and depend on whether the UK's regulatory regime would be deemed equivalent to MiFID II and other EU regulations.

Our approach seeks to address these uncertainties by modelling a range of possible increases in NTBs in UK FS exports to the EU under both our scenarios. In addition, even if the UK's regulatory regime were deemed to be equivalent, these regulations do not cover all FS services and activities, and are therefore unlikely to be as comprehensive as the UK's current access to the Single Market.

## A.3 Migration

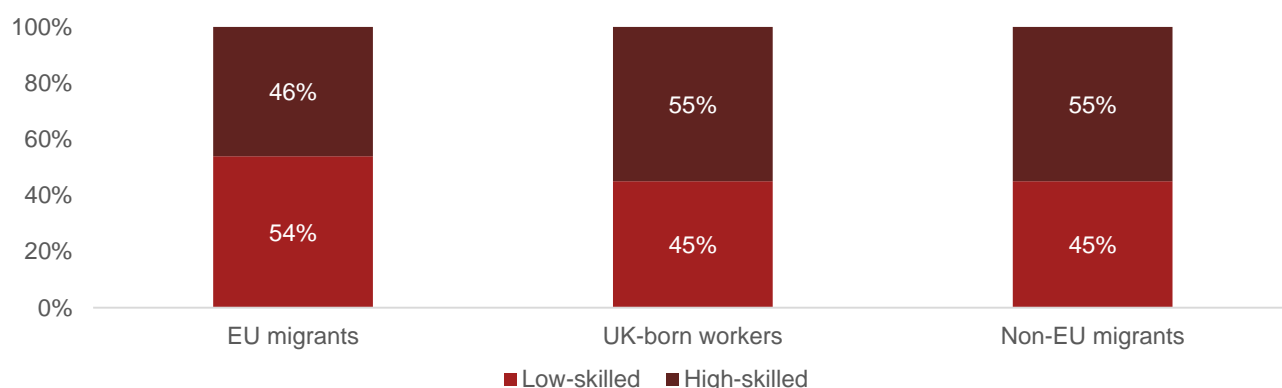
### Economic context and key issues

Free movement of labour is one of the four fundamental freedoms of the EU, allowing people to move between and reside freely in other Member States.<sup>54</sup> The free movement of EU labour has allowed higher levels of net migration to the UK from the EU in the past decade.

The UK's population has increased by about 15% in the last 40 years.<sup>55</sup> Of this increase, 20% can be attributed to EU migration<sup>56</sup> with the remaining 80% of the increase accounted for by natural population rises and non-EU (both approximately 40%). Migration under the EU law on freedom of movement has contributed to a 3% increase in the UK's population since 1973.

Figure A.4 shows that there is a relatively even split in the skill levels of EU migrants with 46% being high-skilled and 54% low-skilled. This can be compared to the same figures for non-EU migrants in the UK. Of which, 55% are high-skilled and 45% low-skilled.

*Figure A.4: Share of individuals in the UK aged 16-64 in high and low-skilled employment, 2013*



Source: Migration Advisory Committee – ONS, PwC analysis

<sup>54</sup> EU migrants can reside in the UK for up to three months without conditions. Longer residence is permitted for as long as the person is working, self-employed, self-sufficient, studying, or subject to restrictions, a jobseeker. After five years' continuous residence in another member state, EU migrants are entitled to permanent residence.

<sup>55</sup> The rate of natural increase is the difference between birth rate and death rate in a given country.

<sup>56</sup> Bank of England (2015a).

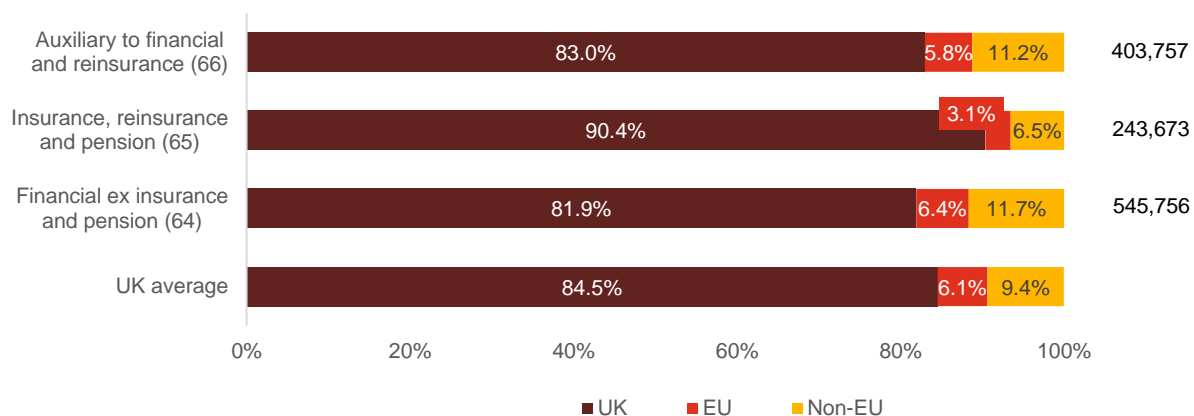
The UK FS sector benefits from the EU's laws on freedom of movement of labour through the access it gives to an international pool of highly-skilled labour. Economic migration of EU nationals to the UK is virtually unrestricted as a result of the EU law on freedom of movement. There are no salary limits or obligations for any employer to fulfil before hiring an EU migrant. This reduces the costs incurred by UK FS organisations when hiring EU migrants as opposed to non-EU migrants.

In 2014, the UK FS sector employed around 1.2 million people. Of this, just under 6% were EU-nationals, which is line with the UK average. Around 10% of FS employment comprised of non-EU nationals, which is higher than the UK average (9%). Figure A.5 provides these figures for each FS sub-sector.

This access to highly skilled labour has helped London, as a global financial centre to remain highly competitive on the global stage giving it a much wider pool of talent which, in turn, increases the amount of specialised and highly skilled workers available to organisations in the FS sector.

Current laws surrounding the freedom of movement of labour allow FS companies to relocate their staff between offices in the UK and EU at short notice depending on business needs. This allows them to be agile and capitalise on sudden changes in the market by ensuring specialist skills are in the right place at the right time.

*Figure A.5: Share of employees by nationality, 2014*



Source: ONS

### Potential key impacts of EU exit on migration in the FS sector

If the UK voted to leave the EU, flows of migration between the UK and the rest of Europe could be significantly affected. Following the UK's exit from the EU, it would no longer be bound by the free movement of labour. It is likely that the UK would exercise greater control over immigration by implementing restriction on EU migration. This means that EU migrants seeking to come and work in the UK may have to meet the requirements for one of the work categories in the UK's Immigration Rules.<sup>57</sup>

A reduction in migration would have an impact on UK labour supply. In our counterfactual, the UK working age population would increase by just under 2 million inclusive of net migration between 2016 and 2022, which suggests a potential shortfall in the ability to fill these jobs, even without any changes to current migration patterns. The impact of restricting immigration as a result of a potential EU exit could therefore exacerbate this shortfall. However, the impact felt through a skills shortage in the FS sector may not be so pronounced in the short term, as the FS sector is relatively more reliant on high-skilled workers than in other sectors.

<sup>57</sup> Economic migration under the UK Immigration Rules is strictly controlled. The main work category is for skilled migrants under Tier 2 (General) of the Points Based System. Applicants are subject to numerical quotas and minimum salary levels, depending on their jobs. If they are granted permission to work in the UK in this category, their permission is limited to a particular job with a particular employer. Their UK employers have to obtain a sponsor licence from the Home Office, which comes with numerous and strict sponsor obligations. In most cases sponsors need to show that a non-EU migrant is filling a job that cannot be filled from the resident labour market, or is on the Government's shortage occupation list. Separate arrangements are made for intra-company transfers (a separate element of Tier 2), youth workers and other temporary workers (Tier 5), those coming to make a substantial investment in the UK economy (Tier 1 investors) and those coming to set up new businesses (Tier 1 entrepreneurs).

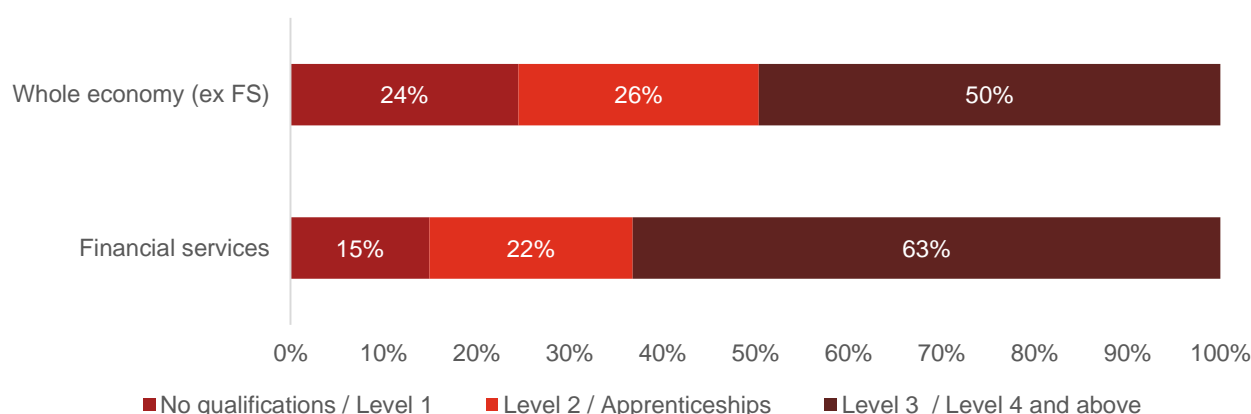
### Modelling the impact of the UK exiting the EU on migration: key assumptions

Following the UK's exit from the EU, EU migrants seeking to come and work in the UK FS sector may have to meet the requirements for one of the work categories in the UK's Immigration Rules. These may be modified if the UK leaves the EU. The requirements imposed on skilled migrants under the Rules may be relaxed, whether for EU nationals or generally, and there may be transitional arrangements to deal with EU nationals who are in the UK when the UK's formal exit from the EU takes effect.

In our modelling, we assume that under both scenarios (WTO and FTA), some form of transitional provisions would be put in place for existing EU migrants so that they continue to work in the UK after a potential UK exit from the EU, whether or not they have permanent residence status.<sup>58</sup> This means that in practice, EU migrants who are already in the UK would be allowed to remain in the UK, while restrictions would be put in place for future migrant inflows from the EU.

The reduction in net migration is likely to result in a decline in UK labour supply, relative to the counterfactual. This affects the FS sector to a lesser extent as it is more reliant on high-skilled migration in comparison to the UK economy on average (see Figure A.6).

Figure A.6: Share of workforce by highest level of qualification attained<sup>59</sup>



Source: ONS

To model the changes in migration on labour supply, we used ONS population and labour force projections and applied recent EU migration trends to project future EU net migration flows. We also used recent data from Migration Observatory to estimate the proportion of high- and low-skilled workers as a proportion of total inflows.

In the WTO scenario we assume that net inflows of low skilled workers would cease which results in a direct impact on the stock level of projected low-skilled workers in the UK. This means that the available labour supply for the FS sector could be –0.8% lower than in the counterfactual (see Table A.4). In the FTA scenario we also assume that inflows of low-skilled workers from the EU would cease, but this decline is offset by an increase in high-skilled migration from EU and non-EU sources. It is likely that the FS sector would benefit

<sup>58</sup> Existing EU migrants, i.e. those who are in the UK at the date of a formal exit, would probably be permitted to remain here if they have obtained permanent residence status under EU law. They would form a small minority of the EU migrant population and they might be given permanent residence status under the Immigration Rules ("indefinite leave to remain") as a concession. Those who have become eligible to naturalise as UK citizens may take that option. In practice, unless special provision was made under the Immigration Rules, EU migrants with no permanent resident status would cease to have any right to stay in the UK under EU law, because EU law would cease to have effect in the UK. Some would not qualify to switch into a category under the Immigration Rules, because, for instance: (1) they would not be working for a sponsor, (2) they would not be earning enough and/or they would not be sufficiently skilled. The Government might make transitional concessions for these existing EU migrants so that they can continue to work on the same basis should the UK leave the EU, if only to ensure that similar concessions are made for UK migrants working in the EU.

<sup>59</sup> Level 1 includes 1-4 GCSEs at any grade, NVQ Level 1 (or equivalent); Level 2 includes 5+ GCSEs, School certificate (or equivalent); Level 3 includes 2+ A-levels, higher school certificate (or equivalent); Level 4 and above includes degrees and advanced degrees (or equivalent). Source: ONS Nomis – Census 2011.



disproportionately from an increase in high-skilled labour, due to the high share of skilled roles in the sector. In the FTA scenario, the available labour supply for the FS sector does not change materially.

*Table A.4: Impact of changes in net migration inflows on available labour supply for the UK FS sector*

	FTA scenario	WTO scenario
High-skilled	+1.4%	0% (no change)
Low-skilled	-2.3%	-2.3%
Total	-0.0%	-0.8%

Source: PwC analysis

## Uncertainties and caveats relating to our model assumptions

There are a few important limitations to the analysis:

- The FS sector is less likely to be impacted by restrictions on low-skilled labour because, as a sector, it is less dependent on low-skilled labour than other industries. However, our assumption that high-skilled migration flows can be maintained to meet the UK's business needs reflects a best case scenario, as the UK may face challenges in increasing the flow of high-skilled labour required to meet those needs.<sup>60</sup> If these challenges were to materialise, the UK could become a less attractive destination for high-skilled labour, which could reduce the appeal of the UK as an international financial hub as its pool of FS talent declines or relocates to other financial centres.
- The UK may also no longer be constrained by EU rules on Bonus Caps following its exit from the EU, and so offer more generous compensation for highly skilled individuals.

## A.4 Regulations

### Economic context and key issues

Regulation is usually intended to address market failures, such as monopoly power, externalities or to provide public goods. It does, however, impose burdens on businesses and households, for example by introducing compliance costs (including administrative burdens). These burdens can detract from the competitiveness of business.

EU membership has had a wide-ranging impact on the structure and scope of regulation in the UK, via legislative instruments such as Regulations or Directives.<sup>61</sup> Areas of regulatory policy shaped by the EU include employment and social policy, consumer protection, financial services, competition, product standards, agriculture and fisheries, and environment and climate change.

In the context of FS, EU membership has had a significant impact on the landscape of FS regulations in the EU and the UK. Starting from the EU Financial Services Action Plan (FSAP), to the implementation of the “passporting” system and the post-crisis reforms to the sector, EU legislation has driven greater integration of FS within Europe by harmonising the patchwork of individual country rules and by creating the system of mutual cooperation and supervision across Member States.

The harmonisation and convergence of rules has helped to eliminate barriers to the single market in FS, enabling EU banks and other financial institutions to operate across borders without having to comply with the rules of 28 individual Member States.

<sup>60</sup> If the UK left the EU, many EU skilled migrants who would otherwise come to work in the UK may no longer qualify to do so under the Immigration Rules. In addition, the relatively costly process of obtaining Tier 2 status, including the fact that migrants are restricted to a particular job with a particular employer, may also encourage some high-skilled migrants to move elsewhere in the EU or remain in their home countries. Even if the requirements under Tier 2 (General) are relaxed, it may have a limited impact on addressing those inhibiting factors.

<sup>61</sup> Directives are binding legislative acts agreed by EU Member States which define common goals. They need to be transposed into UK domestic law in order to take effect. Member States, therefore, have some discretion in how they translate the substance of Directives into national law. Regulations are binding EU legislative acts that apply in their entirety across the EU. These do not require further enabling legislation before they take effect.

Analysis by Open Europe suggests that the annual recurring costs of the top 10 most costly FS regulations in the EU amount to £7 billion.<sup>62</sup>

### Potential key impacts of an EU exit on FS regulations

In principle, if the UK left the EU, it could revise or remove some or all regulations which are linked to either EU Regulations or Directives. Our analysis, therefore, seeks to assess the potential economic impacts of any reduction in the regulatory burden that would be faced by UK-based financial institutions, including for the FS sector.

There are several issues to bear in mind when considering the extent to which FS regulations in the UK that are influenced by EU membership could be removed if the UK were to leave the EU.

First, in some instances, the UK has chosen to implement regulations in a way that goes beyond the minimum standards required by the EU, which suggests that UK policymakers could be less willing to roll back such regulations. Many of the regulations that have been implemented in the UK have gone beyond global and EU requirements where permissible. Figure A.7 sets out the UK's position on FS regulations relative to the EU's position. For example, the UK's retail distribution review (RDR) goes beyond the MiFID II regime by prohibiting the payment of commission on all advice, not just commission paid to independent advisers. The RDR also requires more rigorous qualification requirements and has a different definition of independent and non-independent advice. In addition, the UK also desired higher capital requirements than those which were introduced under CRD IV. For example, it has effectively increased capital requirements using various macroprudential instruments such as the introduction of Pillar 2, stress testing and leverage ratio requirements.

Figure A.7: UK position on financial services regulations relative to EU position

UK desires a stricter regulatory regime compared to the EU	CRD IV	Senior Managers	Recovery & resolution	Leverage ratio	CCA/CCD	Dealing commission	DGSD
	RDR	IMD/IDD	CASS	PSD2	Benchmarks	Solvency 2 e.g. Pillar2	FX
	MMR	IGSD	Platform rules	ICSD	Outsourcing	MiFID inc Col	Best Execution
	Large Exposures	Pillar 2 capital	LCR	BoE Stress testing	3 <sup>rd</sup> country supervision	Ring-fencing	
UK/EU broadly equivalent stances	MMF R	ELTIFS	MAD2	EMIR*	UCITS V	AIFMD	
UK desires different or lighter regulatory regime than EU	IORP2	MAR	Bonus caps	Elements of MCD	Elements of PRIIPS	FTT	

Source: PwC analysis

Other regulations have also been introduced to strengthen the Single Market, of which the UK is a beneficiary, such as those that harmonised regulatory requirements across Member States in order to reduce barriers to cross-border provision of financial services, e.g. the Payments Services Directive and the Prospectus Directive.

Second, some EU regulations effectively originate from the UK's international commitments.<sup>63</sup> For example, the UK's membership of the G20 and IOSCO would require the UK to continue to implement G20 reforms, which are also the most material ones in terms of cost to financial institutions. Examples include Basel III capital and liquidity requirements for banks, and reforms to derivatives markets. These reforms are being implemented in the EU via European directives and regulations such as the Capital Requirements Directive and Regulation (CRD IV) and European Market Infrastructure Regulation (EMIR). The new requirements under the Markets in Financial Instruments Directive and Regulation (MiFID II/MiFIR) have also been introduced, partly as a

<sup>62</sup> See Open Europe (2015). These regulations include CRD IV, AIFMD, MiFID, Solvency II, Consumer Credit Regulation, Money Laundering Regulations, Payment Services Regulations, UCITS IV and Statutory Auditors Regulations.

<sup>63</sup> For example, the EU has issued directives on bank capital adequacy ratios based on globally agreed Basel III rules. The UK would still, therefore, be bound by Basel III in the event it left the EU.

response to G20 commitments that aimed to strengthen supervisory powers and to ensure that OTC derivatives are traded on exchanges or electronic trading platforms.<sup>64</sup>

Unless the UK chose not to be a party to these international agreements, it would be limited in how far it could reduce the burden of these regulations even if it is no longer part of the EU.

Third, as discussed in Section A.2, many of the EU's third country regimes that enable market access are conditioned on equivalence and reciprocity. For example, the Alternative Investment Fund Managers Directive (AIFMD) requires non-EU alternative funds to comply with EU requirements including capital requirements and pay guidelines. Under AIFMD, non-EU regulations must be deemed equivalent for the cross-border provision of products and services, including for managers to continue marketing their funds in the EU. MiFID II and MiFIR also require third countries' regulatory and supervisory regime to be equivalent to that of the EU, as well as provide reciprocal access to its markets for European investment managers. Therefore, if the UK wishes to enable UK banks and investment companies to continue accessing EU markets, the scope for regulatory discretion may be limited in practice.

Finally, some regulations may have a net positive impact on the UK economy: removing them would mean the UK would forego these benefits.<sup>65</sup> In principle, the cost of FS regulation is offset by the benefits of financial stability and institutional resilience. Therefore, any reduction in FS regulatory costs could come at the cost of eroding these benefits. These benefits are estimated to be in the order of £26 billion.<sup>66</sup>

One potential advantage of EU exit is that the UK would no longer be required to adhere to some limited areas of reform that it has opposed, for example the bonus caps that reduce the flexibility of banks and investment companies to remunerate employees using bonus payments. Removing the bonus caps could also enhance the competitiveness of the UK in comparison to other financial centres, such as Singapore and Hong Kong.

In addition, in the event of the UK's exit, there would not be much change for investment funds when it comes to the application of the Short-Selling Regulation (SSR), where the UK has raised an objection in relation to the powers granted to ESMA under the SSR. This is because the rules relate to where the shares / instruments are listed, rather than where the fund manager is based. In addition, although the UK opposes the proposed financial transactions tax (FTT) that is supported by 11 other EU countries, it would continue to be affected by the extra-territorial impacts of the FTT, regardless of whether it remains in the EU.

### **Modelling the impact of the UK exiting the EU on FS regulation: key assumptions**

To model the economic impact of potential regulatory changes arising from the UK's exit from the EU on the UK economy, we have assumed that all cost savings linked to regulatory change would materialise as cost efficiencies for businesses in various sectors of the economy. We reviewed the scope for regulatory cost savings that could apply to the whole economy, as well as those that are specific to the FS sector. The impact of these regulatory savings on other sectors also has knock-on impacts on the demand and supply of financial services.

Under both of our exit scenarios, we assume that the UK can realise Open Europe's estimates of the politically feasible cost savings, particularly in the area of social, employment, health and safety (£5.6 billion), environment and climate change (£5.8 billion) and product standards (£1.2 billion). These regulatory cost savings are equivalent to £12.6 billion per annum.<sup>67</sup> These regulatory costs are expected to materialise from 2020 onwards, and applied on an annual basis. The reduction in social, employment, health and safety regulation, as well as in environment and climate change could result in small regulatory savings to the FS sector, amounting to around £140 million.<sup>68</sup>

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<sup>64</sup> Europe Economics (2015).

<sup>65</sup> Although it is possible that they would be modified to benefit the UK even more.

<sup>66</sup> Open Europe (2015).

<sup>67</sup> See Open Europe (2015). Open Europe's analysis suggests that there is scope to reduce the regulatory burden in the financial services sector by applying Alternative Investment Fund Managers Directive (AIFMD) and MiFID II only on exports to the EU. However, in practice, the cost of running two parallel regulatory regimes would be more expensive for financial institutions, not cheaper. Some elements of these regulations also apply to the whole business, rather than being product-specific, which makes it difficult for these regulations to be partially applied to lines of business with EU exposure.

<sup>68</sup> As these regulations apply to businesses across different sectors in the economy, we have mapped these savings across the sectors in the economy in our model, explained as follows: (1) Social, employment, health and safety regulation savings were assumed to affect all UK sectors and were applied according to the proportion of employees attributed to each sector; and (2) Environment and climate change



However, our analysis suggests that FS regulations are unlikely to be lifted or materially amended in either of our exit scenarios. We therefore assume that the UK would continue to apply most rules that flow from EU Regulations and Directives, including FS regulations, with the exception of the areas described above.

### **Uncertainties and caveats relating to our model assumptions**

Our modelling suggests that the impact of the reduction in regulatory costs is unlikely to be significant relative to the other impacts we have assessed. It would be smaller still once the foregone benefits of regulations have been taken into account. We also note that these savings may be relatively optimistic as it may not be politically or socially desirable to ease or repeal all of the social, employment and environmental and climate change regulations as assumed in our modelling.<sup>69</sup>

However, over the longer term, in the event of exit, the UK's is likely to lose influence over future regulatory developments at the EU level whilst still having to adhere to EU regulation in order to maintain market access. The impact of this loss of influence has not been explicitly accounted for in our modelling. The UK is currently represented at the EU at various levels of policymaking.<sup>70</sup> In addition, the UK's EU membership and outsized financial services sector has enabled it to influence the direction of regulatory policy at the EU level. For example, the FCA has driven the dealing commission agenda at the EU level as part of the MiFID II package of regulatory reforms. Leaving the EU would also mean that the UK loses out from beneficial regulatory reforms that have enabled the creation of investment instruments such as UCITS, which is a globally-recognised investment standard that attracts foreign investment.

The UK would also lose the power of bringing complaints to the European Court of Justice (ECJ) to challenge policies it considered to disadvantage the UK. For example, the UK recently won the challenge against the ECB's location policy for CCPs, but by placing itself out of the EU, is at risk of losing this protection.

## **A.5 Fiscal**

### **Economic context and key issues**

All EU Member States make a financial contribution to the EU budget. From 2010 to 2015, the UK's average annual gross contribution amounted to around £16.8 billion. However, the UK also receives funding from the EU that is valued at around £4.4 billion a year. These funds are largely paid to the private sector but are channelled through government departments. The UK also receives a rebate which is based on the difference between its contributions and receipts from the EU budget.

Figure A.8 provides a breakdown of EU spending in the UK in 2014. Agriculture received the most spending with over half of total EU spending in the UK allocated to the sector. These funds go towards both farmers, in the form of agricultural subsidies, and the rural community as a whole, through support for rural development programmes such as tourism, rural broadband development and small- and medium-sized enterprises (SMEs).<sup>71</sup>

Regional policy received almost a quarter of the allocation which is significantly below the EU average of 42%. Regional policy funding includes funds for development projects such as infrastructure investment or funding for SMEs in the UK's least affluent regions. The R&D allocation of 14.7% funded research and innovation, especially in the sciences. Expenditure in the areas of administration and citizenship (including freedom, security and justice) made up 4.1% of the total EU budget spent in the UK.

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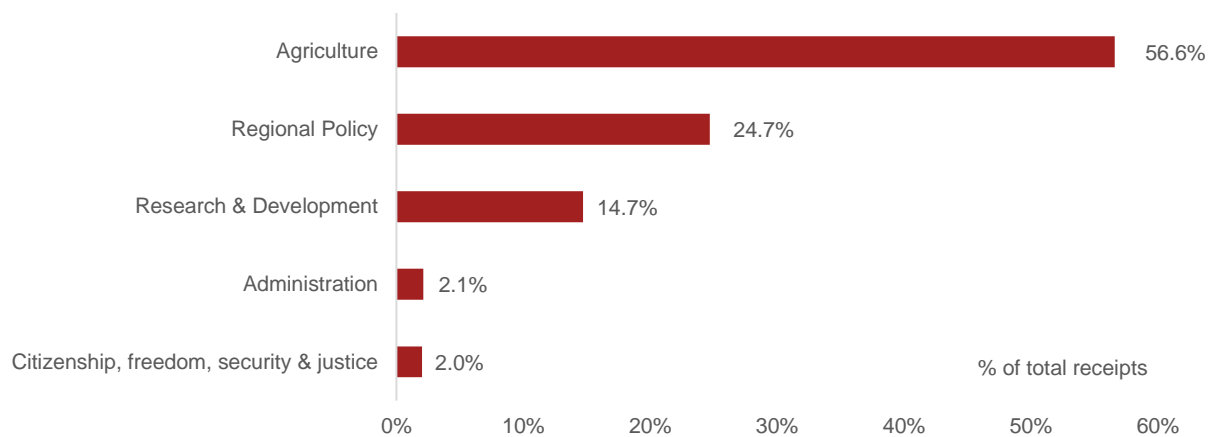
regulation savings were assumed to affect all UK sectors and were applied according to the proportion of greenhouse gas emissions attributed to each sector.

<sup>69</sup> Open Europe's savings from changing environmental and climate change regulation also include abandoning the EU's renewable energy target, which in our view, is unlikely to occur.

<sup>70</sup> For example, the current Commissioner for financial stability, financial services and Capital Markets Union, is Jonathan Hill, former leader of the UK House of Lords. David Lawton, Director of Markets, Policy and International at the FCA was also appointed to the chair of the ESMA Investor Protection and Intermediaries Standing Committee.

<sup>71</sup> House of Commons briefing paper (2016).

Figure A.8: Distribution of the UK's EU funding, 2014



Source: Eurostat and European Commission, PwC analysis

The EU also makes direct payments to the private sector that are not recorded in the public accounts. In 2013, these payments were estimated to be around £1.4 billion, and they included funding for research and infrastructure. When these transfers are taken into account, the UK's net contribution falls to around 0.4% of GDP.

We have not identified any issues surrounding the fiscal impact of a UK vote to leave and fiscal implications that are specific to the FS sector. This is mainly due to the fact that fiscal contributions largely concern the UK government and public sector spending. However, although the impact of changes in the UK government's fiscal contribution are not specific to the FS sector, the changes do have an effect on the economy as a whole. These changes, in turn, lead to changes in the supply and demand factors in the FS sector. For the purposes of our CGE model we have made a set of assumptions based on our own analysis and existing evidence. The assumptions we have made regarding fiscal contributions and the basis for them are set out in this section.

### Potential key impacts of an EU exit on fiscal contributions

If the UK left the EU, the UK would no longer have to contribute to the EU budget although this depends on the exit scenario. If the UK joined the EEA, like Norway, it would still have to contribute in order to access the Single Market, albeit at a slightly lower rate than as a full EU member. On the other hand, if the UK were to negotiate an FTA or left with no access agreement, a budgetary contribution would not be required.

### Modelling the impact of the UK exiting the EU on trade and investment: key assumptions

In our modelling we assume under both WTO and FTA scenarios that the UK government regains control of its net contribution (equal to approximately 0.5% of UK GDP, excluding direct transfers to the private sector). Funding currently received by regions and business from the EU budget would be maintained at the same level by the UK government.

### Uncertainties and caveats relating to our model assumptions

There are a few limitations to the analysis:

- The EU makes direct payments to the private sector in the form of the contribution to R&D and infrastructure funding, worth £1.4 billion in 2013.<sup>72</sup> The UK also benefits from investment capital from the EU, which is not captured in HM Treasury's accounts. For example, the UK enjoys the backing of the European Investment Fund (EIF), whose total invested equity in the UK amounts to €655.8 million. Our analysis does not explicitly capture the reduction in these payments. However, it is likely that the loss of these direct payments (if not replaced by the UK Government) would have a small, negative impact on the economy through their effect on productivity.
- Our analysis assumes that the UK would replace EU funding for regions and businesses with its own funding. We do not explicitly model changes to fiscal spending patterns. However, in practice, the mix

<sup>72</sup> HM Treasury (2015).

could change in the future, depending on UK government priorities and regional funding and infrastructure needs.

- Our analysis also does not assume any proactive fiscal policy response to EU exit. The government could also respond by loosening fiscal policy, but its capacity to do this would be weakened by a larger fiscal deficit that would accrue in both of our scenarios.

## A.6 Relocation of banking activity

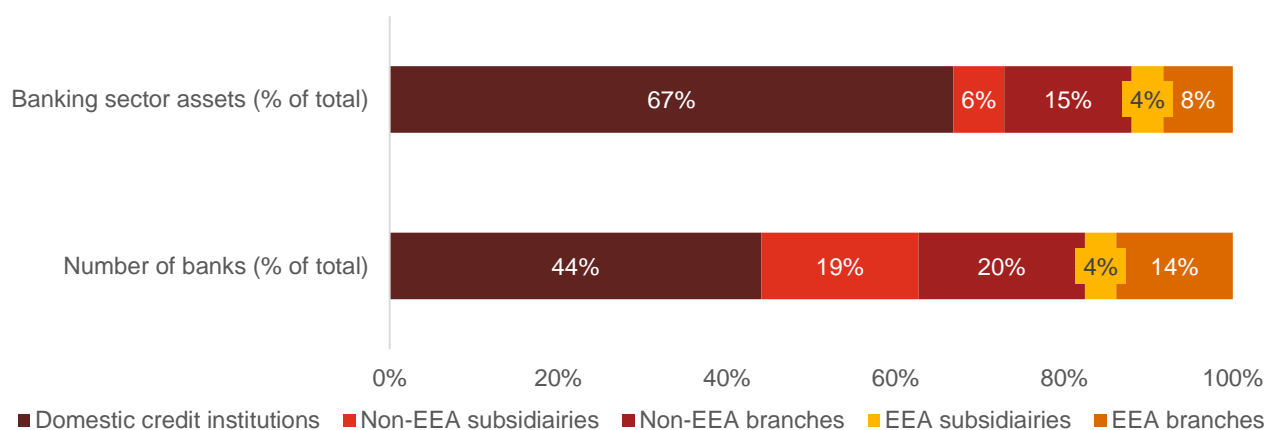
### Economic context and key issues

It can be difficult to determine a causal link between EU membership on FDI into the UK FS sector as these decisions are motivated by a range of factors, including market access and barriers to FDI (which are directly influenced by EU membership), size of the host market, agglomeration effects, factor costs, fiscal incentives, exchange rate and the business, language, competition structures, availability of certain skill sets and business / investment climate.<sup>73</sup>

However, there is some evidence to suggest that EU membership (and access the Single Market) is one of the factors in increasing the UK's financial openness and attracting international banking institutions to establish their European headquarters in the UK. For example, a study by the Bank of England (2015) suggests that EU legislation, such as the passporting regime, is likely to have encouraged the expansion of the FS sector as well as the presence of global financial institutions, highlighting the fact that around half of the world's largest financial institutions have their European headquarters in the UK. As trade costs in the UK fall as a result of EU membership, this incentivises foreign financial institutions to relocate to benefit from them. As set out in Section A.2, over 80% of the FDI in the FS sector originates from non-EEA countries.<sup>74</sup>

Figure A.9 shows the share of banks and banking assets in the UK by country of incorporation. In 2014, 255 foreign banks were operating in the UK. Of these, the majority (175 out of 255) were incorporated outside of the EEA and accounted for around 21% of UK banking assets. The remaining 80 branches and subsidiaries were EEA-owned and these accounted for 12% of UK banking assets. This suggests that banks headquartered in the US, Canada, Switzerland, Australia and other non-EU states account for a significant share of banking activity in the UK.

Figure A.9: Share of banks and banking assets in the UK by country of incorporation, 2014



Source: European Banking Association

The cluster of banks in London has also attracted in hedge funds, asset managers and private equity companies. The UK dominates the European asset management industry with around £5.6 trillion assets under management (AuM) at the end of 2014, which accounts for more than a third of total AuM in Europe.

As Figure A.10 shows, asset management activity in the UK is dominated by companies whose parents are headquartered in countries other than the UK or the EU. These companies – predominantly US-based –

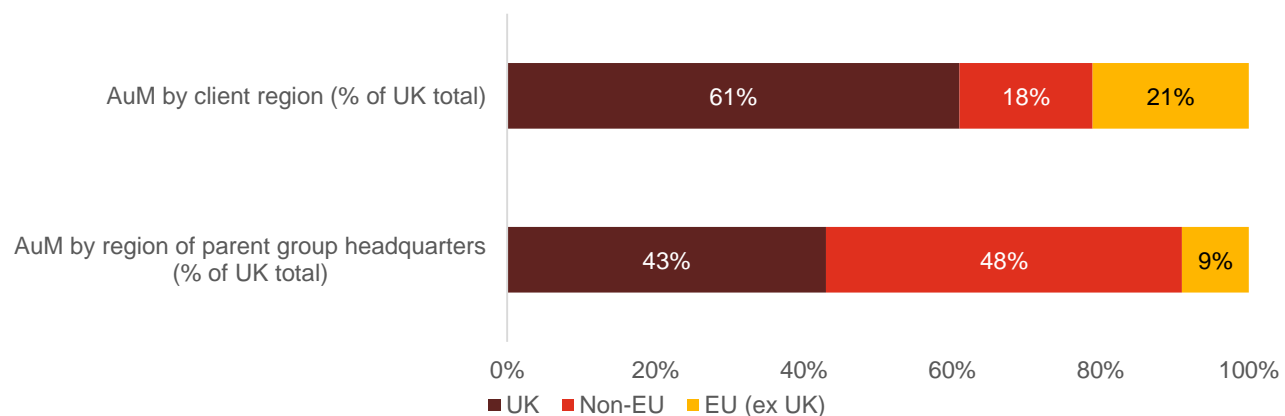
<sup>73</sup> HM Treasury (2010).

<sup>74</sup> Source: ONS FDI data. This figure includes FDI from Switzerland, which accounts for 10% of inward FDI to the UK FS sector.

account for just under half (48%) of total AuM in the UK. UK-owned asset managers account for 43% of total AuM in the UK. This compares to 61% ten years ago. Only 9% of fund managers' assets are run by companies that are headquartered in European countries other than the UK.

Around two-fifths (39%) of assets managed in the UK at the end of 2014 were managed on behalf of overseas clients, £2.2 trillion. The breakdown between European and other overseas clients was £1.2 trillion (21% of total AuM) for European clients and £1 trillion (18%) for other overseas clients.

*Figure A.10: UK AuM by client region and region of parent group headquarters, 2014*



Source: Investment Association

### Potential key impacts of an EU exit on UK FS sector activity

As discussed in Section A.2, potential restrictions on the provision of cross-border services for UK banks and investment managers following the UK's exit from the EU could have a significant impact on the ability of banks and asset managers to access EU clients and market infrastructure.

Table A.5 summarises the potential impacts of the UK's exit from the EU by segment. As third country financial institutions, banks based in the UK may need to be licensed or required to establish a local branch or subsidiary within the EU to continue providing banking services to EU clients. These regulatory challenges may motivate banks to relocate some of their activities from the UK to the EU, particularly for non-EU banks who use the UK as a hub for their European operations. EU banks may also face similar challenges, although to a lesser extent, in relation to their cross-border business with clients and counterparties in the UK. A survey by TheCityUK shows that 37% of financial institutions say that they are very or fairly likely to relocate staff if the UK left the EU.<sup>75</sup> Another more recent survey of members of the British Banking Association survey (BBA) also showed that 57% of the respondents believed that the UK leaving the EU would have a negative impact on their organisation.<sup>76</sup>

The impact of asset managers are less clear, as it depends on their business model, exposure to European retail funds (such as UCITS), and the location from which retail funds are distributed. For example, the distribution of retail funds for some companies already takes place on the continent, e.g. via asset management hubs like Ireland and Luxembourg, which could mitigate the need to relocate activities from the UK to other EU Member States.

Restrictions on the ability of UK clearing and settlement institutions, including CCPs, to provide services to European clients could also result in some relocation of market infrastructure activity to the EU. However, data from UK national statistics are not sufficiently granular to segregate the value added contribution of these activities, which precludes more detailed analysis on the potential impact on this sub-sector. For these reasons, we have only modelled the impact of the relocation of some banking activity.

<sup>75</sup> TheCityUK (2013).

<sup>76</sup> BBA survey (2016). 31% of banks took no position, while 8% said that there would be no impact and 4% said there would be a slightly positive impact.



*Table A.5: Implications of the UK's exit from the EU on market access by segment*

Implications of the UK's exit from the EU	
UK banks with domestic focus	UK domestic banks' footprint is entirely in the UK and, therefore, unlikely to experience any real change in terms of access to markets and impact of regulatory requirements. However, they may experience negative secondary effects from the loss of connectivity and critical mass of the UK FS sector.
UK banks with international presence	Banks with a large presence in Europe may need to subsidiarise their European operations; or move their HQs out of the UK into the EU to retain their EU passports. However, most banks in this category are gradually reducing their European presence, which mitigates some of the negative impacts from reduced market access.
EU-incorporated banks	The UK is likely to continue allowing market access, given its fairly open approach to cross-border banking, as well as the presence of equivalent regulations in Member States.
Non-EU incorporated banks	Non-EU banks who use the UK as a hub to access the EU are likely to experience significant disruption. Alternatively, they could relocate their UK operations to the EU in order to retain market access.
Asset managers (including AIFMs)	Impact on this segment is less clear. The loss of passporting rights could cause significant disruption to UK retail asset managers. Third country AIFMs could also be affected from restrictions on marketing funds into the EU. However, for some managers the distribution already takes place within the EU (outside the UK).
Market infrastructure providers	Restrictions on the ability of UK clearing and settlement institutions, including CCPs, to provide services to European clients could also result in some relocation of market infrastructure activity to the EU.

*Source: PwC analysis*

Following the UK's exit from the EU, the UK would continue to retain its existing advantages that are attractive to FS companies and investors, such as a time zone bridging America and Asia, access to skills, a strong and stable legal system, the dominance of English as the primary business and financial language. The UK currently accounts for a significant share of global and European capital markets activity. For example, 78% of all European FX trading and 50% of all European fund management activities takes place in the UK. For these reasons, it is unlikely that London's dominant position is unlikely to change quickly.

However, the loss of market access could threaten the UK's standing as an international financial centre over the longer-term. Should the UK's exit from the EU prompt banks to relocate some activities away from London, this could diminish the positive network effects from clustering and agglomeration experienced by the FS sector. This could accelerate over time as banks, auxiliary financial services and infrastructure gradually migrate to other European centres while better-integrated financial hubs emerge in Europe, partly driven by the Capital Markets Union (CMU).

A gradual relocation of some segments of banking activity to other hubs would result in a slowdown of FS sector growth in the UK. This would have a knock-on impact on supply chain spending, particularly on key suppliers to the banking sector such as the information and communications sector, real estate, professional, scientific and technical services sectors. The economic impact of a potential relocation of financial services sector would be most keenly felt should it be accompanied by a relocation of labour to other financial hubs.

The relocation of banks' headquarters abroad could also lead to negative impacts on the tax contribution of the FS sector to HM Treasury. Research by PwC suggests that the total tax contribution of the UK banking sector, including non-EU banks that are most at risk of relocation, amounted to £13.3 billion, accounting for around 5% of all UK government tax receipts.<sup>77</sup> The majority of the tax revenues originates from receipts from employment taxes, which could be at risk if relocation is accompanied by the outflow of skilled FS workers.

<sup>77</sup> PwC report for the BBA (2015).

## **Modelling the impact of the UK exiting the EU on UK FS sector activity: key assumptions**

To model the economic impact of a potential relocation of non-EU banks away from the UK, we estimated the share of FS activity that could be lost, using the following steps:

1. We first identify the share of activity that can be attributed to non-EU banks. As shown in Figure A.9, the branches and subsidiaries of non-EU banks account for 21% of total banking assets in the UK.
2. However, it is unlikely that this share of activity will be entirely lost, as banks and other financial institutions adjust to the new market access arrangements while minimising disruption to their UK business, or other challenger banks could emerge to fill the gap left by relocating financial institutions. Of the 21% of banking assets accounted for non-EU banks, we assume that only a quarter of this activity is gradually lost over the period 2020-2030. We assume that there is no corresponding decline for UK- and EU-incorporated banks. This leads to a slowdown in growth in the overall FS sector that is equal to 0.3 percentage points between 2020 and 2030.
3. The reduction in the growth rate is then applied to the economic model via a capital efficiency lever in the model. The capital efficiency lever is a key driver of growth in the FS sector, as greater efficiency leads to higher productivity and growth in the sector.

## **Uncertainties and caveats relating to our model assumptions**

Our analysis assumes that the value generated by the UK FS sector gradually erodes over a decade. However, it is likely that the adjustments observed in practice could take place over a shorter period of time, given that banks may face shareholder pressure to restore profitability by taking action quickly following changes to market access arrangements.

Our analysis also assumes that there would be no loss in activity under the FTA scenario, where the UK receives equivalence determinations for a number of services and activities under the EU's third country regimes. However, this could be an optimistic assumption, as these regimes do not cover banks' ability to provide cross-border services in a number of core areas, including lending and deposit-taking, foreign exchange or other investment banking services that are outside the scope of MiFID II. It also does not cover access to important European market infrastructure, including payments, clearing and settlement services. Therefore, some relocation of activity from the UK to the EU could nevertheless occur even under the FTA scenario.

Our analysis also only takes into account the potential responses of the UK banking sector, and does not consider the possible responses of other sub-sectors of FS, namely insurers, investment companies and market infrastructure providers such as exchanges, clearinghouses, payment providers and others. Our analysis suggests that other sectors could be affected by market access restrictions, which could also prompt some relocation of activity to the EU where there are lower frictional costs associated with providing services across borders. These have not been modelled explicitly. If they were, the negative impacts of the resulting FS sector slowdown could be even more significant.

In addition, because the FS sector tends to be more productive than other sectors in the economy, a relocation would not only result in a reduction in the level of GDP, but also a reduction in GDP per capita. This suggests that our modelling approach is likely to deliver more cautious estimates of a potential slowdown in the FS sector as it does not take into account potential second round outflows of labour.

Restrictions to the ability of banks and asset managers to provide investment banking and asset management services across borders could have an impact on the ability of corporate issuers to raise capital on capital markets. This could have an impact on businesses' cost of capital, which has not been modelled explicitly in our analysis.

Finally, there are other major reforms that are taking place in Europe, such as the Capital Markets Union (CMU), that aims to remove national barriers to the seamless flow of capital throughout the EU. The FS centre in the UK is uniquely-positioned to benefit from the CMU given its position as an international financial hub. These could also offer even more opportunities for access to finance and lower cost of borrowing for UK corporates. However, the opportunity costs of not participating in these reforms have not been taken into account, which if included, could increase the potential costs of the UK leaving the EU.

# Annex B: Scenario descriptions

Table B.1 describes both the FTA and WTO scenarios modelled in the PwC/CBI report. Table B.2 summarises the input assumption changes we have used for each exit scenario.

*Table B.1: Exit scenario descriptions and explanations*

Potential economic impact	FTA scenario	WTO scenario
Short-term uncertainty	<ul style="list-style-type: none"> <li>The UK quickly negotiates an FTA with the EU, leading to a shorter period (5 years) of uncertainty, during which UK corporates experience an increase in credit risk.</li> </ul>	<ul style="list-style-type: none"> <li>Protracted exit negotiations result in a prolonged period (9 years) of uncertainty, during which UK corporates experience an increase in credit risk.</li> </ul>
Trade – tariffs	<ul style="list-style-type: none"> <li>The UK manages to negotiate an FTA with the EU. The UK continues to maintain zero tariffs on goods trade with the EU.</li> </ul>	<ul style="list-style-type: none"> <li>Trade between the UK reverts to WTO / MFN basis. The UK experiences an increase in EU tariffs on goods trade to MFN rates.</li> </ul>
Trade – non-tariff barriers	<ul style="list-style-type: none"> <li>Gradual regulatory divergence between the UK and the EU results in an increase in NTBs on goods and services.</li> </ul>	<ul style="list-style-type: none"> <li>Gradual regulatory divergence between the UK and the EU results in an increase in NTBs on goods and services.</li> </ul>
Trade – trading relationships with third-party countries	<ul style="list-style-type: none"> <li>The UK grandfathers all existing FTAs that the EU has with third-party countries after it leaves the EU.</li> <li>We assume no change to tariffs or NTBs on trade with third-party countries that currently have an FTA with the EU.</li> <li>The UK is able to accelerate its FTA negotiations with the US. The US FTA comes into effect in 2021.</li> <li>There is no change to the trading relationship between the UK and other countries (that are not party to an existing FTA with the EU).</li> </ul>	<ul style="list-style-type: none"> <li>Current FTAs between the EU and third-party countries no longer apply to the UK once it exits the EU. Trade with those countries reverts to a WTO MFN basis in 2020. The FTAs come back into effect in 2026, following renegotiations.</li> <li>We assume no change to NTBs on trade with third-party countries that currently have an FTA with the EU.</li> <li>The UK negotiates a FTA with the US. The US FTA comes into effect in 2026.</li> <li>There is no change to the trading relationship between the UK and other countries (that are not party to an existing FTA with the EU).</li> </ul>
Migration	<ul style="list-style-type: none"> <li>New migrants, including those from the EU must qualify under the Immigration Rules (applicable to all foreign nationals).</li> <li>This in practice would mean the cessation of net migration inflows of low-skilled migration from the EU.</li> <li>This is accompanied by a relaxation of immigration requirements for high-skilled labour, which results in an increase in high-skilled migrant inflows.</li> </ul>	<ul style="list-style-type: none"> <li>New migrants, including those from the EU must qualify under Immigration Rules (applicable to all foreign nationals).</li> <li>This in practice would mean the cessation of net migration inflows of low-skilled migration from the EU.</li> <li>There is no change to migration patterns of high-skilled labour.</li> </ul>
Regulations	<ul style="list-style-type: none"> <li>Greater control over regulatory policy results in some regulatory cost savings.</li> </ul>	<ul style="list-style-type: none"> <li>Greater control over regulatory policy results in some regulatory cost savings.</li> </ul>

Potential economic impact	FTA scenario	WTO scenario
Fiscal	<ul style="list-style-type: none"> <li>The UK no longer makes a contribution to the EU budget and, therefore, the net contribution goes towards government spending (c.0.5% of GDP).</li> <li>The UK continues to fund EAGF, EAFRD and social and regional development funds.</li> <li>Half of these savings (i.e. reduction in net contribution) go towards debt reduction while the other half goes towards capital investment.</li> </ul>	<ul style="list-style-type: none"> <li>The UK no longer makes a contribution to the EU budget and, therefore, the net contribution goes towards government spending (c.0.5% of GDP).</li> <li>The UK continues to fund EAGF, EAFRD and social and regional development funds.</li> <li>Half of these savings (i.e. reduction in net contribution) go towards debt reduction while the other half goes towards capital investment.</li> </ul>

Source: PwC assumptions

Table B.2: Changes to policy or macroeconomic assumptions applied in the CGE model in the exit scenarios

Change	FTA scenario	WTO scenario
Short-term uncertainty	<ul style="list-style-type: none"> <li>Uncertainty impact applied for five years between 2016 and 2021 (but assumed to fade away gradually over the second half of this period)</li> <li>Cost of debt increases by 50 bps</li> <li>Cost of equity increases by 20 bps</li> </ul>	<ul style="list-style-type: none"> <li>Uncertainty impact applied for nine years between 2016 and 2025 (but assumed to fade away gradually over the second half of this period)</li> <li>Cost of debt increases by 50 bps</li> <li>Cost of equity increases by 20 bps</li> </ul>
Trade – tariffs	<ul style="list-style-type: none"> <li>UK experiences no tariffs on goods exports to the EU.</li> </ul>	<ul style="list-style-type: none"> <li>Average tariffs on UK goods exports to the EU increases from zero to WTO MFN tariff values</li> <li>This amounts to an increase in effective tariff rate of 2.5% on all UK goods exports. The UK would also charge MFN tariffs on imports from the EU. This amounts to an increase in effective tariff rate of 2.9% on all UK goods imports.</li> </ul>
Trade – non-tariff barriers (NTBs)	<ul style="list-style-type: none"> <li>NTBs between the UK and the EU increase by one-quarter of the differential between the NTBs on UK exports to the rest of the world and the EU.</li> <li>This would amount to an increase of around 0.5% in the cost of all exports from the UK, as well as a 0.7% increase in the cost of all imports into the UK.</li> </ul>	<ul style="list-style-type: none"> <li>NTBs between the UK and the EU increase by three-quarters of the differential between the NTBs on UK exports to the rest of the world and the EU.</li> <li>This would amount to an increase of around 1.4% increase in the cost of all exports from the UK, as well as a 1.8% increase in the cost of all imports into the UK.</li> </ul>
Trade – trading relationships with third-party countries	<ul style="list-style-type: none"> <li>The UK is able to accelerate its FTA negotiations with the US. The US FTA comes into effect in 2021. We assume that tariffs decrease by 75% immediately, then gradually decrease to zero from 2021 to 2030.</li> <li>By 2030, this would cut the cost of all exports from the UK by around 0.4%. Tariffs and NTBs on UK imports as a whole would also decrease by 0.3% by 2030.</li> <li>There is no change to the trading relationship between the UK and other</li> </ul>	<ul style="list-style-type: none"> <li>Current FTAs between the EU and third-party countries no longer apply to the UK once it exits the EU. Trade with those countries reverts to a WTO MFN basis in 2020. The FTAs come back into effect in 2026, following renegotiations.</li> <li>The UK negotiates a FTA with the US. The US FTA comes into effect in 2026. We assume that tariffs decrease by 75% immediately, then gradually decrease from 2026 to 2030 (at the same rate as the FTA scenario, but starting at 2026 rather than 2021).</li> </ul>



Change	FTA scenario	WTO scenario
	countries (that are not party to an existing FTA with the EU).	<ul style="list-style-type: none"> <li>By 2030, this would cut the cost of all exports from the UK by around 0.3%. Tariffs and NTB costs on imports to the UK as a whole would also decrease by 0.2% and 0.3% respectively by 2030.</li> <li>There is no change to the trading relationship between the UK and other countries (that are not party to an existing FTA with the EU).</li> </ul>
Migration	<ul style="list-style-type: none"> <li>Net inflow of low-skilled labour from the EU falls to zero from 2020 onwards.</li> <li>This is accompanied by an increase in the net inflow of high-skilled workers equivalent to half of the decline in low-skilled labour inflows. This means that high-skilled inflows increase by 1.4% relative to the counterfactual.</li> <li>Overall UK labour supply falls by 0.7% relative to the 2030 counterfactual.</li> </ul>	<ul style="list-style-type: none"> <li>Net inflow of low-skilled labour from the EEA falls to zero, which reduces UK labour supply by 1.4% relative to the 2030 counterfactual.</li> </ul>
Regulations	<ul style="list-style-type: none"> <li>Regulatory costs fall by approximately £12.6 billion per annum.</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory costs fall by approximately £12.6 billion per annum.</li> </ul>
Fiscal	<ul style="list-style-type: none"> <li>Half of the savings from the reduction in net EU budget contributions (c.0.5% of GDP) goes towards debt repayments.</li> <li>The remaining half goes towards capital investment.</li> <li>The UK continues to fund EAGF, EAFRD and social and regional development funds.<sup>78</sup></li> </ul>	<ul style="list-style-type: none"> <li>Half of the savings from the reduction in net EU budget contributions (c.0.5% of GDP) goes towards debt repayments.</li> <li>The remaining half goes towards capital investment.</li> <li>The UK continues to fund EAGF, EAFRD and social and regional development funds.</li> </ul>

Source: PwC analysis

<sup>78</sup> The EAGF refers to the European Agricultural Guarantee Fund and the EAFRD refers to the European Agricultural Fund for Rural Development.

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# *Annex C: Glossary*

**AIFM** – Alternative investment fund managers (AIFMs) is defined an entity that provides, at a minimum, portfolio management and risk management services to one or more alternative investment funds (AIFs) as its regular business, irrespective of where the AIFs are located, or what legal form the AIFM takes. AIFs can refer to any collective investment undertaking, which raises capital from a number of investors with a view to invest it based on a defined investment policy for their benefit. The AIFMD applies to hedge fund managers, private equity fund managers, real estate fund managers, and managers of other alternative investments operating within, or marketing to investors in, the European Union (EU).

**AIFMD** – The Alternative Investment Fund Managers Directive (AIFMD) aims to (1) enhance supervisory powers in addressing financial stability, (2) improve investor protection and (3) foster greater cross-border competition. It enables greater regulatory oversight over AIFMs including hedge funds, private equity companies and real estate funds. The AIFMD introduces a passporting regime and harmonised regulatory standards and enhanced disclosure requirements for EU AIFMs. Third country AIFMs may also be able to avail themselves to an EU-wide passport in the future, subject to applying for a full compliance with AIFMD obligations and the regulator based in the third country must also have a cooperation agreement in place with the Member State regulator.

**Equivalence** – Under certain EU regulations and directives (CRD IV, EMIR, MiFID II and AIFMD), the European Commission may adopt implementing acts declaring that the legal, supervisory and enforcement arrangements of a non-EU country are equivalent to the requirements set out in EU regulations and directives. Once equivalence for a non-EU country has been established, it allows companies established in third countries to provide services in the EU.

**MiFID II** – The Markets in Financial Instruments Directive (MiFID) sets out which investment services and activities should be licensed across the EU, and the organisational and conduct standards that those providing such services should comply with. MiFID II allows third country financial institutions to provide investment services to perform activities directly to eligible counterparties and professional requirements without having to establish a branch only if the European Commission has determined that the third country's legal and supervisory regime is broadly equivalent to the EU.

**Passporting** – Subject to its fulfilment of conditions under the relevant single market directive, a financial institution authorised in a European Economic Area (EEA) state is entitled to carry on permitted activities in any other EEA state by either exercising the right of establishment (of a branch and/or agents) or providing cross-border services. Exercising this right is known as “passporting”. The activities that are “passportable” are set out under various EU directives that apply to services provided by credit institutions, financial institutions, insurers, investment companies etc.

**Third country** – Third countries refer to countries that are not EU Member States. Companies established in these countries are referred to as third country companies.

**UCITS** – “UCITS” or “undertakings for the collective investment in transferable securities” are investment funds regulated at European Union level. They account for around 75% of all collective investments by small investors in Europe. These funds can be marketed across the EU member states, provided that the fund and fund managers are registered within a Member State.

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