Where Next Europe: the Future of European Financial Services

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Where Next Europe: the Future of European Financial Services is published by the City of London Corporation. The author of this report is PricewaterhouseCoopers LLP.

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London
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http://www.cityoflondon.gov.uk/economicresearch

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Foreword

Across Europe, the financial services sector helps consumers and households to save and invest, businesses to expand, and provides the means to fund infrastructure and trade. This report looks at the role of financial services not only in directly generating output, employment and exports, but more broadly in its linkages with and support for other sectors across the EU single market through supply chains and the services provided.

Europe's financial services industry currently makes a significant direct economic contribution to the European economy, providing €731 billion, or 5.9%, of the EU's total GVA, employment for 6.4 million people across Europe, and contributing almost €209 billion in taxes across the largest European economies, supporting Europe's public finances.

However, as this report demonstrates, the scale and nature of the interlinkages between financial services and other industries across the EU has an even more significant impact on Europe's economy. A well-functioning financial system is crucial in unlocking investment potential to help businesses grow, financing the infrastructure development that keeps Europe competitive, and generating demand in the supply chain through buying goods and services from suppliers.

This research examines two possible future directions for financial services, looking at the wider implications of a regulatory environment that supports sustainable growth for the sector compared with an approach in which there is little or no growth. In the former – with financial services growing at 1.9% per year – Europe's total output grows by an additional €200 billion in the next five years, and €850 billion by 2030, with 11 million new jobs created - the majority in sectors such as manufacturing, construction, retail and trade.

This work highlights what Europe as a whole stands to gain by getting regulatory reform right and supporting sustainable growth; it also demonstrates the benefit of the efficient functioning of trade in services, as Europe works towards a single capital markets union. As the world's largest single market, Europe provides a key marketplace for trade in services between member states, with intra-EU exports totalling €842 billion; UK services play a central role, accounting for 10% of this figure.

As the debate continues about the UK's role in the EU, this research demonstrates both the value to the wider economy of financial services in the single market, and the importance of getting the regulatory reform agenda right. Well-considered, robust and pragmatic regulation provides a competitive advantage for Europe, and can support growth while mitigating the risks of a future financial crisis.

This report demonstrates the economic opportunities offered by European policymakers working to ensure that reform delivers regulation calibrated to create the right conditions for sustainable growth in European financial services and the efficient functioning of financial markets.

Mark Boleat
Chairman of Policy and Resources
City of London
May 2015

1. Executive summary

1.1 Economic and policy context

This report was commissioned by the City of London Corporation to analyse the role of the financial services (FS) sector[1] in the European Union (EU)[2] in supporting economic activity, and the future for the sector and its relationship with other industries in the context of a changing regulatory environment.

The FS sector plays an important role in supporting households and businesses across the European economy. It helps households save and invest by providing everyday services such as bank accounts and mortgages and helps businesses grow and expand by providing credit and helping them access financial markets and investors. The industry plays a major role in intermediating the flow of capital from savers to borrowers, and from investors seeking to make a return on capital, to companies that need capital to grow and expand.

Financial services are also an important driver of economic growth. In 2013, the sector generated €731 billion of gross value added (GVA) (in real terms), accounting for around 5.9% of EU-27 total GVA. The industry provides jobs for 6.4 million people in Europe, and generates further output and employment in other sectors of the economy through its purchases.

There are economic benefits from a growing FS sector. However, growth in the sector needs to be sustainable. The financial crisis highlighted the risks to the economy the sector can pose and policymakers have responded with a series of regulatory reforms including the Capital Requirements Regulation and Directive (CRD IV) and proposals to ring-fence banks' operations that seek to reduce the likelihood of bank failure. Regulations such as the Recovery and Resolution Directive (RRD) aim to reduce the cost of bank failure, while other regulations are in train, intended to improve capital markets' infrastructure and transparency, such as the European Market Infrastructure Regulation (EMIR) and the Markets in Financial Instruments Directive (MiFID II).

The FS sector faces the challenge of adapting to a new regulatory environment while growth is hampered by lower profitability and the cost of addressing historical issues. Growth in the sector has therefore stalled since the crisis, making it increasingly challenging for banks to perform critical roles such as household and business lending.

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[1] For the purposes of this report, we define the FS sector based on three types of activities identified in national economic data:

- Banking and financial service activities, except insurance and pension funding;
- Insurance, reinsurance and pension funding, except compulsory social security; and
- Activities auxiliary to financial services and insurance activities (e.g. asset managers, back office functions and hedge funds).

[2] All data refers to the EU-27 member states, due to lack of data we cannot take account for Croatia's accession to the EU as the 28th member state which occurred on 1 July 2013.

The challenge for European policymakers in designing and implementing regulations in this sector is to balance the need for the FS sector to grow in a sustainable way, in turn supporting other sectors and reinvigorating growth across Europe, against the need to reduce the cost and probability of future crises. The sector itself also needs to avoid an inward looking approach, and rather needs to embrace the technological and market opportunities for growth. This is all the more important when set against the landscape of weak economic growth in Europe.

This report sets out our analysis of how a sustainable and growing FS sector can continue to make a significant positive contribution to the European economy in the coming decades.

1.2 Contribution of the EU FS sector

We have reviewed a number of ways in which the EU FS sector contributes to the EU economy. These are summarised below:

- In 2013, the sector generated €731 billion of GVA (in real terms), accounting for around 5.9% of EU-27 total GVA. It employed 6.4 million people, or 3% of the workforce. The sector is more productive than the rest of the economy.
- The total value of intermediate goods and services purchased by the FS sector from other sectors amount to €316 billion. It is a key source of demand for other sectors, particularly professional services, computer programming, and telecommunications and postal services. The FS sector supplies essential services of €530 billion in value to EU businesses, which is equivalent to 4.7% of total intermediate demand from other sectors.
- The FS sector has a key role of intermediating between savers and borrowers, allowing savers to earn returns and unlocking both business and residential investment.
- The €72 billion trade surplus[3] in financial services provides a powerful contribution to the EU trade balance, and demonstrates the EU's competitiveness in financial services. It is an important source of trade diversification alongside a far larger surplus in manufacturing (worth €547 million).
- The FS sectors in France, Germany, Italy and the UK combined generated nearly €209 billion in taxes annually[4], equivalent to an average of 6.6% per annum of total tax receipts in these countries.

This range of benefits demonstrates that the FS sector makes a significant contribution to EU economic growth, and has the potential to continue driving and supporting growth in the future.

[3] This refers to financial services trade with countries outside the European Union, and member state contributions to the trade surplus differ significantly.
[4] On average between 2006 and 2010.

1.3 Our scenarios and approach

The future of the EU FS sector is uncertain following the changes to the industry in the years following the financial crisis. In this report, two possible scenarios are set out which describe what a future FS sector might look like between 2015 and 2030:

- In **Scenario 1,** we assume the FS sector grows at 60% of its pre-crisis growth rate – that is, it grows at 1.9% per annum, with a supportive regulatory, market and economic environment. In this scenario, the FS sector grows at a substantial, but more sustainable rate than it did before the 2007 crisis; and
- In **Scenario 2** we show the impact of a more challenging regulatory and market environment. We define this scenario such that annual growth in the FS sector is close to 0%.

These scenarios are analysed using a Computable General Equilibrium (CGE) model (see Appendix for further detail). This is a large scale economic model that is based on the EU-27 countries as a whole. There are a number of factors that affect the FS sector; and in this report the analysis has focussed on what we consider are the key macroeconomic drivers for FS sector growth.

1.4 Our results

In Scenario 1 where the FS sector grows at 1.9% (or 60% of its pre-crisis growth rate), EU gross domestic product (GDP) grows by 1.8% annually between 2015 and 2030. This compares to a pre-crisis growth rate of around 2.1% per annum between 2000 and 2008. In contrast, in Scenario 2, GDP grows by only 1.5% per annum over the same period, reflecting the slower rate of growth in financial services.

Our modelling shows that growth in the FS sector has a positive impact on growth in the wider economy – this is because the FS sector generates additional output and demand for goods and services from other sectors. It is worth noting that the adjustments in GDP growth rates are smaller in magnitude than the adjustments in the size of FS sector output in both scenarios. This is because the impacts of the changes in the FS sector (either upwards or downwards) are "diffused". In the case of FS sector expansion (Scenario 1), this means that as the FS sector grows, it draws in resources from other parts of the economy. As noted above, the FS sector is a key source of demand for other sectors, particularly professional services, computer programming and telecommunications and postal services. However, the increase in demand also drives up prices, which partly mitigates against the positive impact across the wider economy in the scenarios.

Table 1.1 shows that, in 2020, total EU GDP in Scenario 1 is €200 billion larger than in Scenario 2 in 2020. This difference increases to €458 billion in 2025, and €850 billion by 2030. The size of the FS sector (as measured by GVA) is €85 billion larger in Scenario 1 than in Scenario 2 in 2020. This difference increases to €172 billion in 2025, and €275 billion by 2030.

Table 1.1: Model results - difference in real GVA created between Scenario 1 and Scenario 2, € billion and employment in thousands

	2020	2025	2030
Size of EU GDP	€200	€458	€850
Size of the FS sector in terms of GVA	€85	€172	€275
Employment (thousands)	2,524	5,804	10,990

Source: PwC analysis

The strong linkages between the FS sector and the wider economy are clearly demonstrated by the size of the FS sector multiplier - the results from our modelling suggest that an increase in FS sector GVA of €1 billion is associated with a change in GDP of around €2.3 billion to €3 billion.

Overall by 2030, an additional 11 million jobs are created in Scenario 1 relative to Scenario 2. Further, more jobs are created in the wider economy (8.7 million jobs, equivalent to 79% of additional job creation) as opposed to the FS sector (2.3 million jobs).

Our modelling also breaks down the economy by different sectors. The FS sector shows the largest GVA impact across all sectors in Scenario 1 relative to Scenario 2 in 2030 (€275 billion). Of this, €49 billion accrues to the insurance sector, €28 billion accrues to services auxiliary to the FS sector, and the rest, €198 billion, accrues to core financial services. The analysis also suggests that employment in the FS sector will create an additional 2.3 million jobs in Scenario 1 relative to Scenario 2 by 2030.

The computer programming and consultancy sector, legal and accounting services sector, and the real estate sector show the largest difference in growth rates along with the construction sector, over the period 2015 to 2030. The differences in the growth rate between Scenario 1 and 2 for these sectors are driven by their strong linkages with the FS sector. In Scenario 1, these sectors directly benefit from the expansion in the FS sector, as a result of the increase in the FS sector's demand for goods and services from other sectors. In Scenario 2, these sectors perform less well due to slower growth in the FS sector. Similarly, the differences in the growth rate of the construction and real estate sectors between Scenarios 1 and 2 are indirectly driven by growth in the FS sector. In Scenario 1, sectors that benefit from FS sector expansion subsequently increase their investment in the construction and real estate sectors.

1.5 Conclusions

Our modelling shows that a well-functioning FS sector is important to the economic growth of Europe. 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 others. Banks also help businesses manage their risk and investments, raise capital, and facilitate efficient flows of domestic and international capital. The sector is an important supplier of services to households and businesses, and is also an important source of demand for other sectors.

Our analysis shows that there are clear benefits of a growing FS sector and the consequences on the rest of the EU economy. What specifically could contribute to this growth?

Policymakers accept that regulatory reforms, which aim to improve financial stability have had an impact on economic growth. This points to the importance of careful calibration of future regulations that supports sustainable growth in the sector. A sustainable FS sector is also important in realising the goals of the EU's Capital Markets Union initiative to diversify the financial system with deep and developed capital markets and establish a single market in the EU to unlock the flows of cross-border capital. Policymakers should carefully consider the potential impacts of new regulatory initiatives such as bank structural reforms and the financial transaction tax, and how they interact with existing rules and reforms, on the sector's ability to continue supporting economic growth.

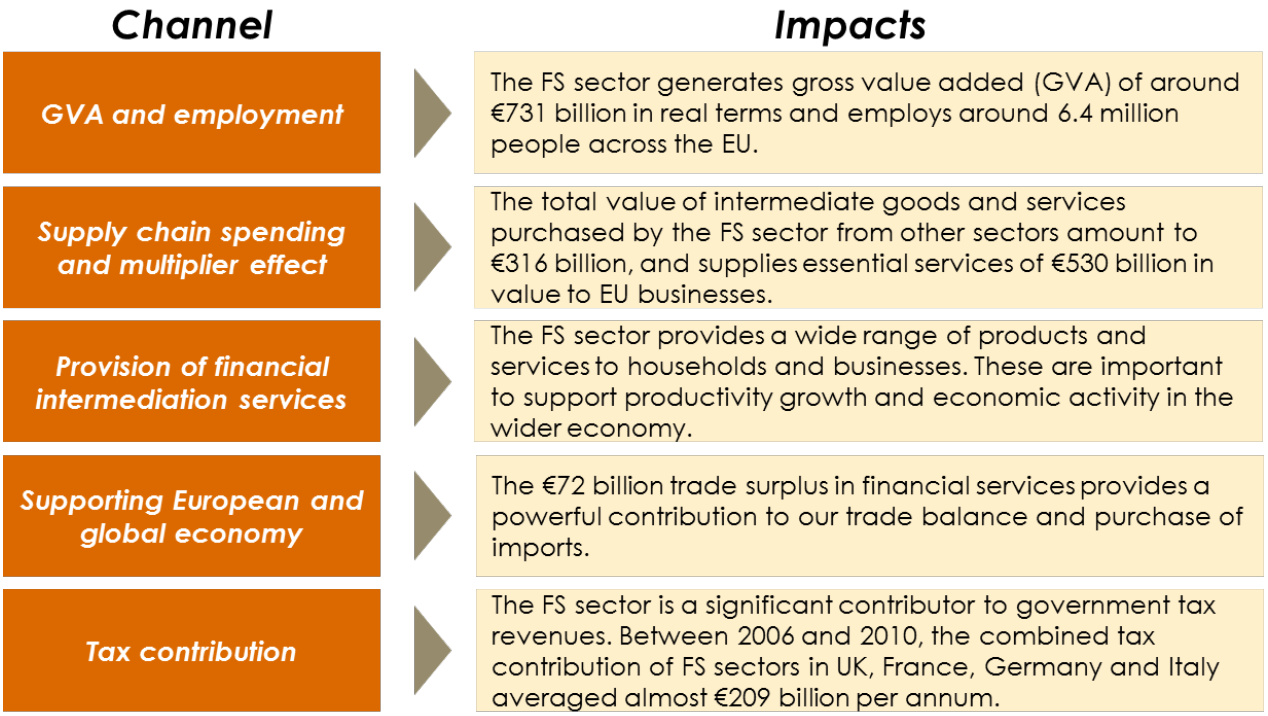
Furthermore, the FS sector itself has an important role to play. Financial services firms need to avoid excessive focus on cost reduction, short-term performance recovery, risk management and regulatory compliance. While these are undoubtedly important, they will not mark out successful firms in the longer-term. Rather, firms need to take a strategic perspective to the customers they serve, the products they create and the technology they use to deliver services. Through investment, innovation and growth, the FS sector will remain relevant to customers, supporting the European economy in the process.

2. The relationship between the FS sector and the wider economy

The purpose of this report is to analyse the role of a well-functioning FS sector in supporting economic growth in Europe. The FS sector is defined here to include financial services, insurance, pension funding, and auxiliary financial services.[5] 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 others. Banks also help businesses manage their risk and investments, raise capital, and facilitate efficient flows of domestic and international capital. The sector is therefore an important supplier of services to households and businesses, and is also an important source of demand for other sectors.

Figure 2.1 summarises the ways in which the sector contributes to the European economy. These are discussed in more detail below.

Figure 2.1: Dimensions of the FS sector's contribution to the European economy



[5] This definition corresponds to Sector K in the NACE Rev 2 industry sector classification. The scope of our study is the EU-27, and includes the following countries: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom. Our analysis excludes Croatia as the most recent input-output tables for the EU (2011) do not include Croatia.

In this chapter, we also assess the contribution of the FS sector in comparison to other sectors:

- Agriculture and mining: includes agriculture, forestry, fishing and mining and quarrying.
- Manufacturing.
- Construction.
- Transportation and distribution: includes transportation and storage, wholesale and retail trade, and repair of motor vehicles and motorcycles.
- Telecommunications and post.
- Professional and business services: includes architectural and engineering activities, scientific research and development, advertising and market research, security and investigation services, office administration and other business support services.
- Legal and accounting services.
- Real estate services.
- Catering and accommodation.
- Computer programming and consultancy.
- Other services: includes publishing, broadcasting, arts, entertainment and recreation, activities of households and non-profit institutions serving households (NPISH).
- Public sector: includes public administration and defence, education, health and social work activities.

2.1 GVA and employment

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.[6]

Table 2.1shows the trends in real GVA for the EU FS sector from 2001 to 2013, and its share of the EU economy. In 2013, the sector generated €731 billion of GVA (in real terms), accounting for around 5.9% of EU-27 total GVA.

Table 2.1: Real GVA of the FS Sector, 2001 to 2013

	Real GVA	GVA growth	Share of total EU-27 GVA
	€ billion in 2011 prices	*% annual change in real GVA*	
2001	572	0.4%	5.4%
2002	586	2.6%	5.4%
2003	594	1.4%	5.4%
2004	621	4.5%	5.5%
2005	637	2.6%	5.6%
2006	684	7.4%	5.8%
2007	732	7.0%	6.0%
2008	750	2.5%	6.1%
2009	739	-1.5%	6.3%
2010	728	-1.5%	6.1%
2011	737	1.2%	6.0%
2012	735	-0.3%	6.0%
2013	731	-0.6%	5.9%

Source: Eurostat

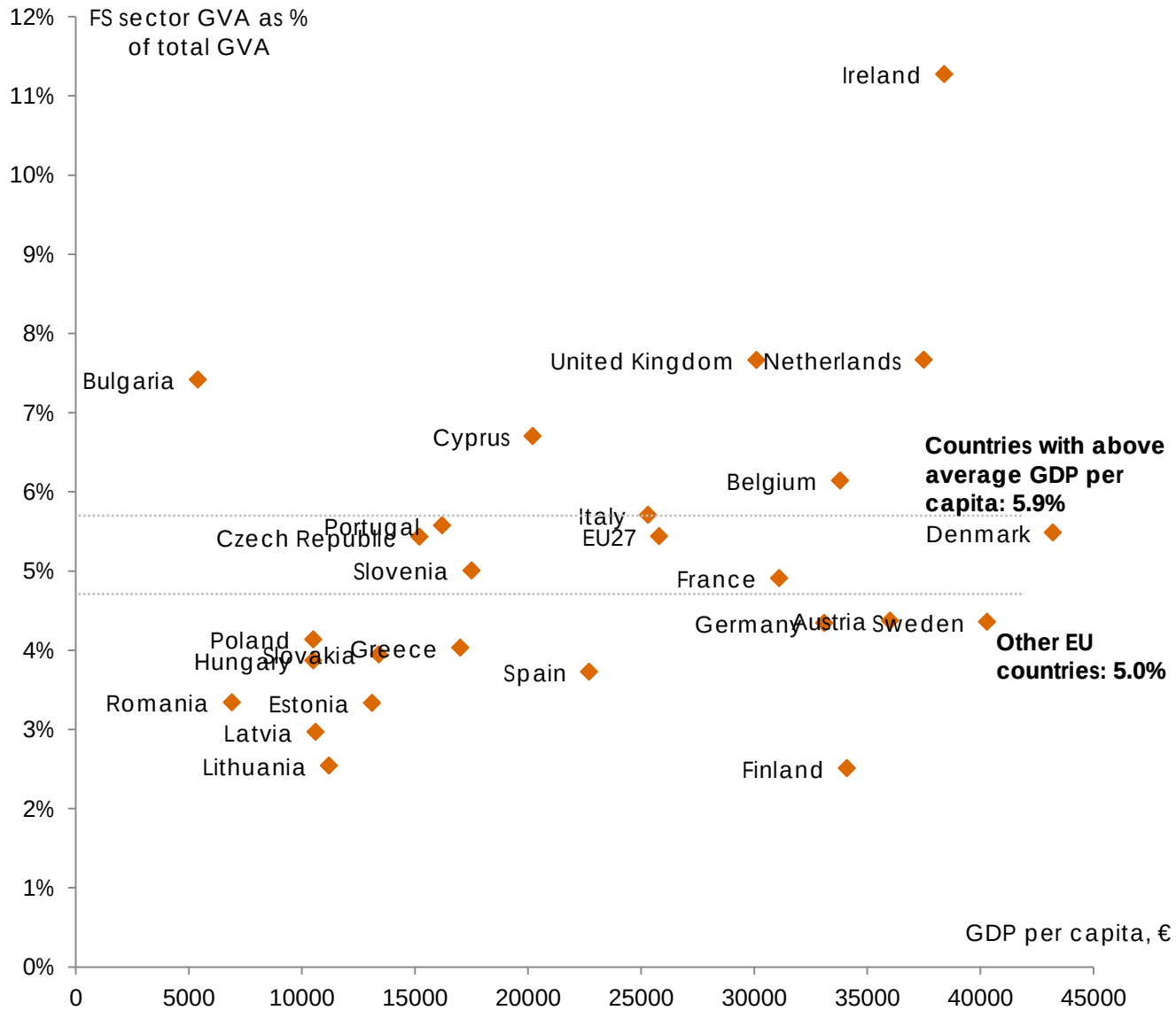
Over the period 2001 to 2013, the real GVA of the financial services sector has risen, although there have been fluctuations throughout the period. GVA reached a peak of €750 billion in 2008, falling back to €728 billion in 2010, partially recovering in terms of output to €731 billion in 2013. The rate of output growth has followed a similar trend over the time period, peaking at 7.4% in 2006, before contracting following the onset of financial crisis in 2008/2009. Since then, FS GVA growth has been low or negative, illustrative of the challenges facing the sector in terms of increased regulation and reduced profitability.

The FS sector has become increasingly important over the past decade, with the sector's share of total EU-27 GVA growing from 5.4% in 2001 to a peak of 6.3% in 2009. Despite the sector's recent contraction in total GVA and GVA growth, its relative importance to the EU economy has remained relatively stable, contracting slightly to 5.9% in 2013 following the financial and sovereign debt crises. This reflects the fact that all countries require some form of financial services to support economic activity.

[6] GVA is used in the estimation of GDP, specifically, GVA plus net taxes on products equals GDP at the whole economy level.

However, certain EU countries have a larger FS sector relative to other sectors, reflecting the varying degrees of specialisation in financial services across the EU, with significant variation in the respective sizes of member states' FS sectors across the EU. Figure 2.2 shows the cross-country differences in the size of the FS sector within the EU. Luxembourg clearly has a relatively large FS sector, which accounts for 25% of national GVA. The figure also suggests that wealthier EU countries in terms of GDP per capita (such as the Nordic countries and western European economies) tend to be associated with a larger FS sector relative to the size of the economy. At the end of 2013, the FS sector in these countries account for around 5.9% of national GVA compared to an average of 5.0% for other EU countries.

Figure 2.2: FS sector's share of national GVA and GDP per capita, 2014



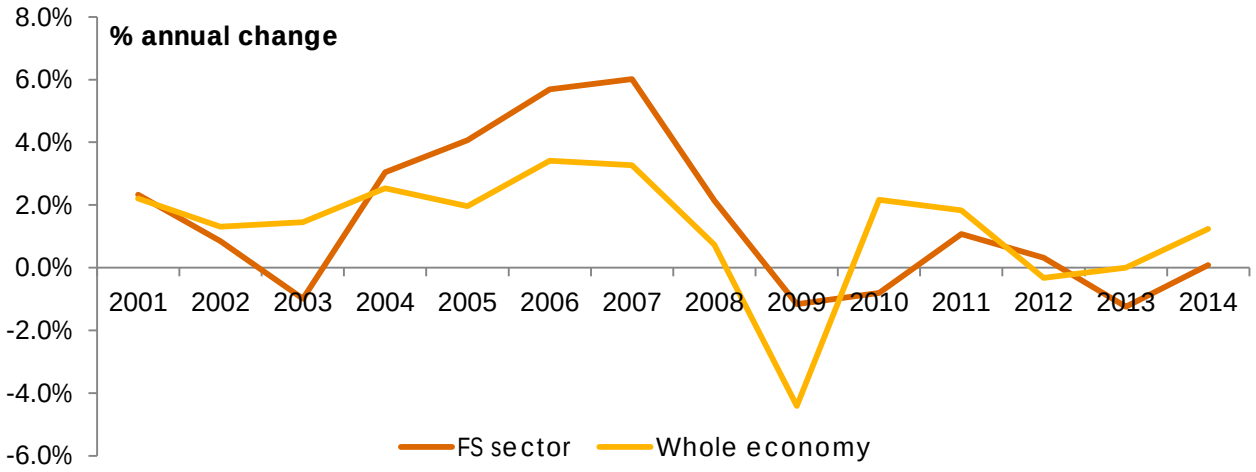
Note: This chart does not include Luxembourg: its FS sector GVA a sa % of total GVA is 25.2% and its GDP per capita is €75,400.

Source: Eurostat, PwC anlaysis

Since the financial crisis however, the size of the sector has stagnated in real terms (2011 prices), accounting for around 5.9% of EU-27 GVA.

Figure 2.3 compares FS sector GVA growth to the whole economy growth. From 2002 to 2010, the FS sector has tended to expand faster than the wider economy, however the relationship has changed somewhat in the past few years. Research by Caporale *et al.* (2009) suggests that financial sector development in 10 EU countries has had a positive impact on overall economic growth.[7] Levine *et al.* (2000) also found that the development of financial intermediation affects growth positively. The FS sector also tends to be characterised by high productivity growth. Research by Maroto-Sanchez and Cuadrado-Roura (2011) shows that productivity growth in the services sector in Europe between 1980 and 2008 was driven by the FS sector. However, in recent years, although there has been some fluctuation in the growth rate of the FS sector and the wider economy, growth has remained broadly flat since 2009/2010.[8]

Figure 2.3: GVA growth in FS sector vs whole EU economy



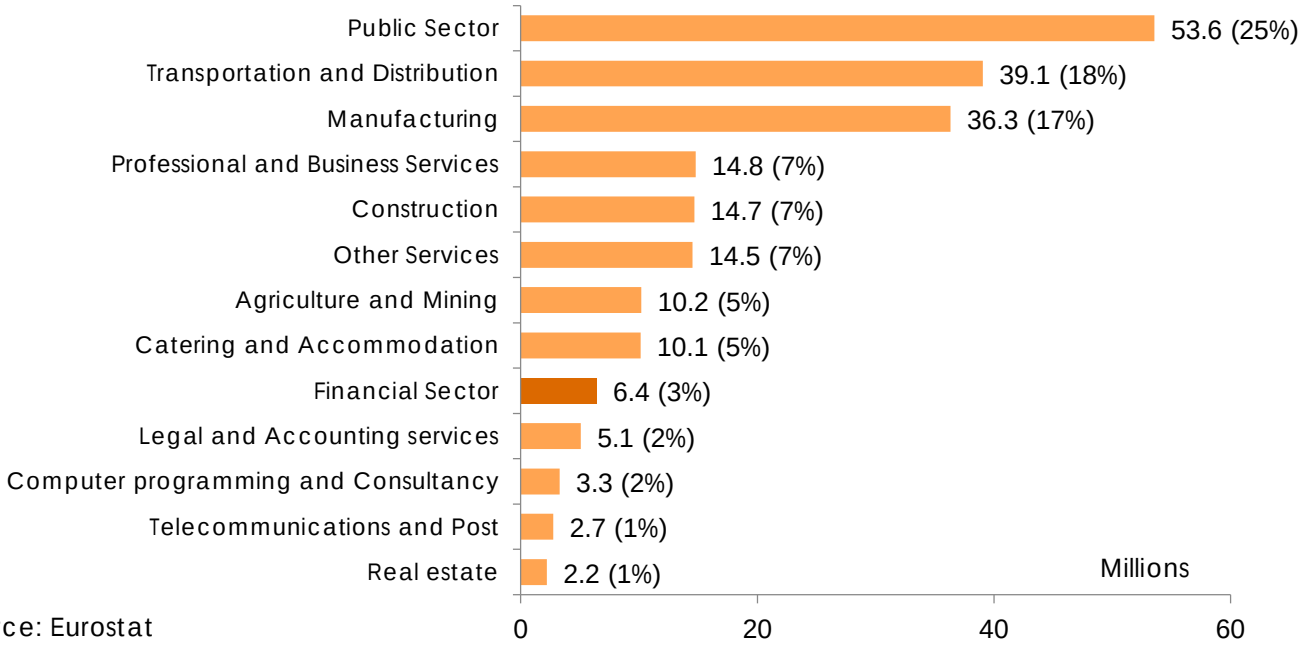
Source: Eurostat

The FS sector also employs around 6.4 million people in the EU, which accounts for around 3% of total EU employment. Figure 2.4 compares employment across different sectors within the EU.

[7] These 10 EU countries are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

[8] According to Eurostat, real gross value added by the FS sector in EU-27 between Q4 2009 and Q4 2013 was -0.03% p.a.

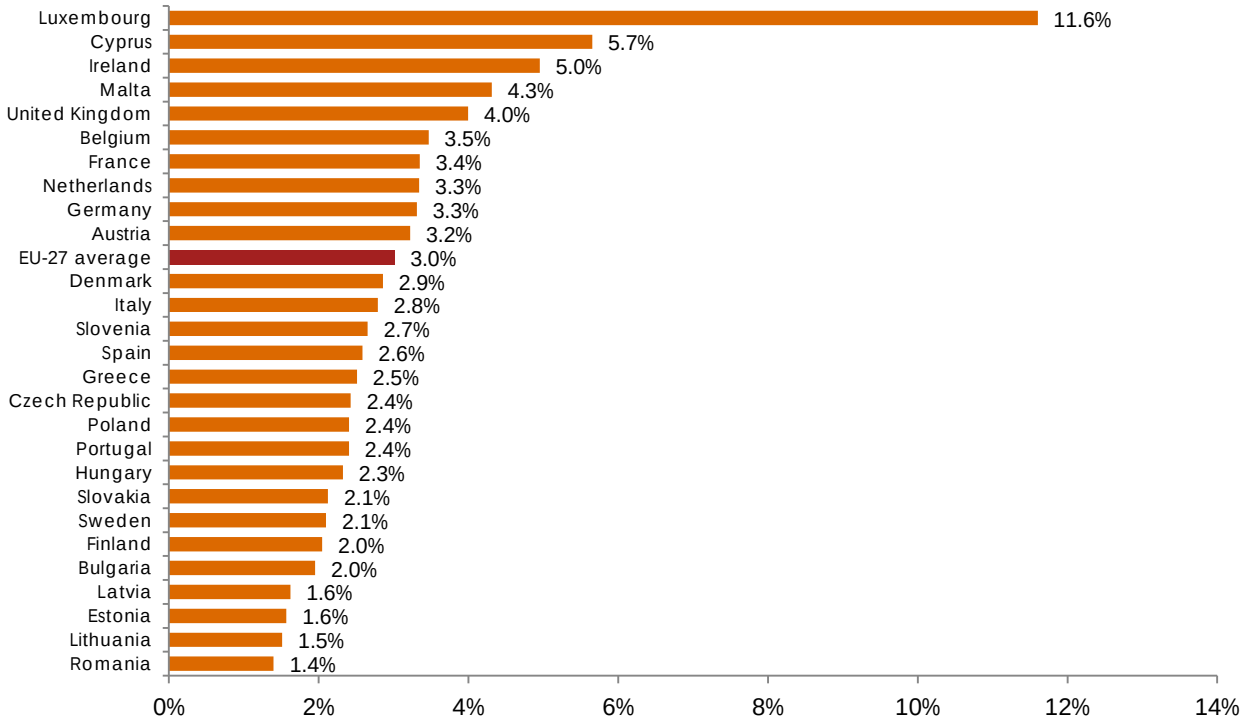
Figure 2.4: EU employment by sector (and percentage of total employment), Q3 2014



Source: Eurostat

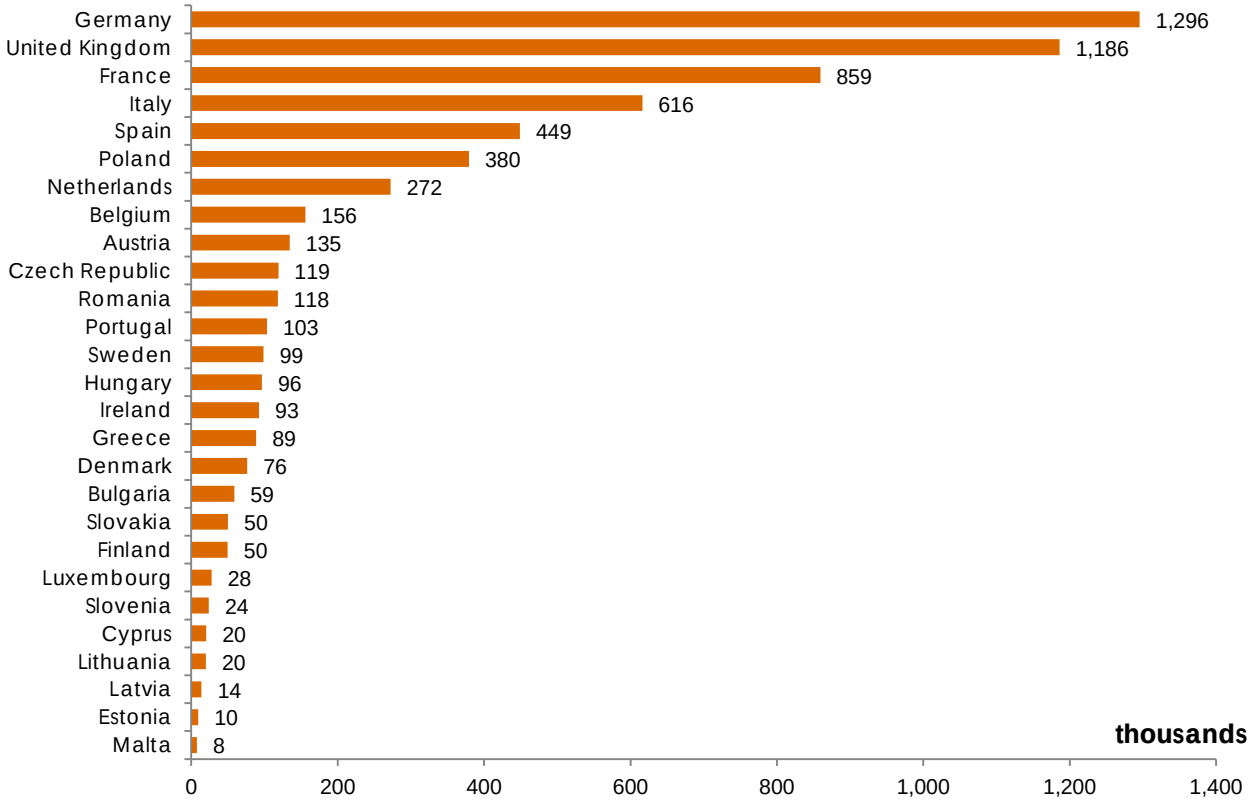
Figure 2.5 shows employment in the FS sector as a percentage of total employment across the EU member states. The chart shows that the relative proportion of employment in the FS sector is related to the size of the FS sector relative to the whole economy. As a hub of wealth management and specialised financial services, Luxembourg leads the table with 11.6% of its working population in the wider FS sector. This is followed by Cyprus, Ireland, and Malta and the UK. It is also important to consider the FS sector's contribution to employment in absolute terms. Figure 2.6 shows the absolute levels of FS sector employment within each EU country. The largest economies in the EU (Germany, UK, France Italy) account for the largest absolute levels of employment in the FS sector, providing job opportunities for 4.4 million people.

Figure 2.5: Employment in the FS sector as a percentage of total employment by country, 2014



Source: Eurostat

Figure 2.6: Level of employment in the FS sector by country, 2014



Source: Eurostat

2.2 Supply chain spending and multiplier impacts

The financial services sector is a key source of demand for other sectors in the economy. The FS sector requires goods and services from other sectors in order to operate efficiently, such as office space and equipment, IT and computer services, telecommunications, real estate services, legal and accounting services, and recruitment services.

In order to understand the interlinkages between the FS sector and other sectors in the EU economy, we use the Supply and Use Tables (SUTs) published by Eurostat to evaluate the breadth and depth of these linkages. The SUTs map sectoral economic interactions, which are set out below:

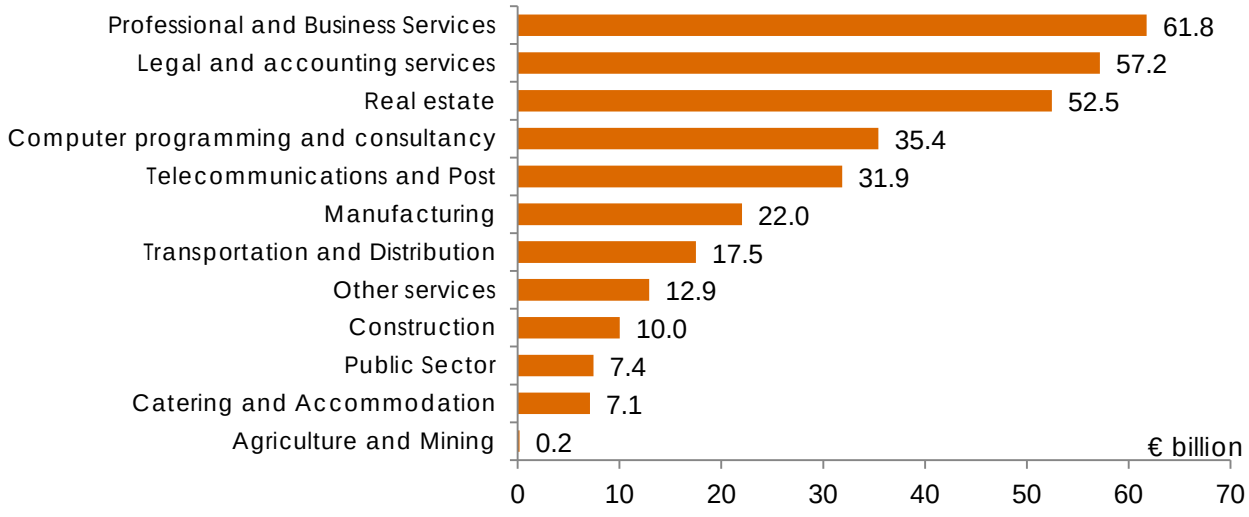
1. **The Supply Matrix** contains details of the different products and by-products that are supplied by different industry sectors. In 2011, 96% of all products supplied by the FS sector were FS related. However, there is a small overlap with the real estate sector in terms of some supplementary products that are supplied to the markets.
2. **The Use Matrix** contains details of the different products that industries use in their production process as well as payments to employees and capital earnings. A detailed breakdown of household product demand is also given.

The Use Matrix can be used to quantify which sectors supply to the FS sector, and similarly, which sectors are supplied to by the FS sector.

The FS sector as a key source of demand for other sectors

The total value of intermediate goods and services purchased by the FS sector from other sectors amount to €316 billion, or around 50% of its total supply chain spending within the EU-27. As Figure 2.7 shows, the FS sector purchases a significant amount of products and services from the professional and business services sector, which includes technical consulting services, advertising and market research services. Given that jobs in the sector tend require high-skilled labour, banks also tend to utilise employment and human resourcing services. Banks also purchase a significant amount of legal and accounting services as well as real estate services.

Figure 2.7: Goods and services purchased by the FS sector from other sectors, 2011

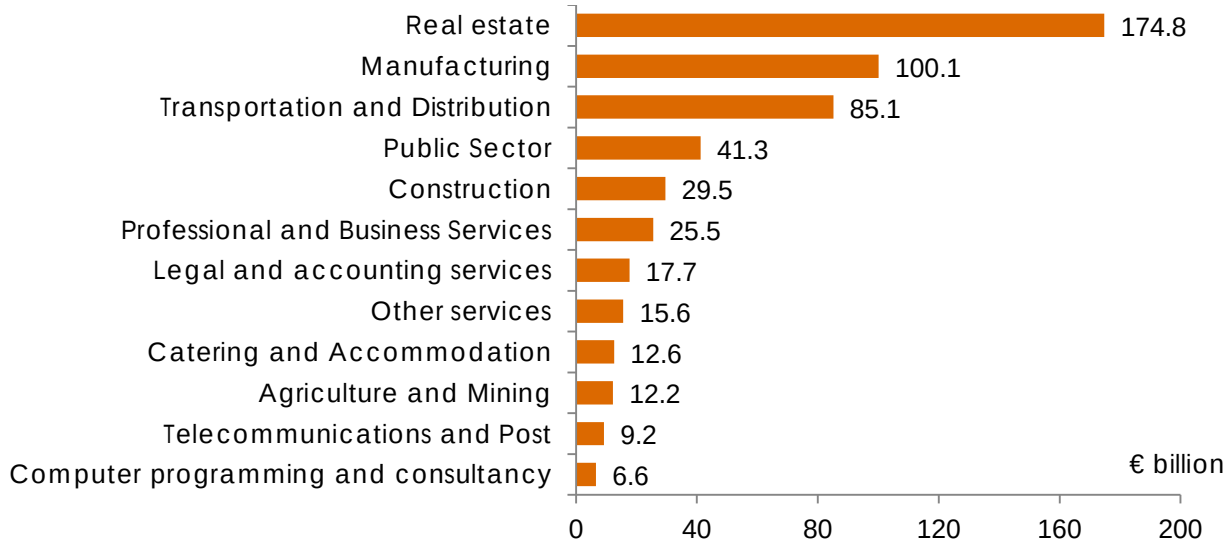


Source: Eurostat

The FS sector as a supplier to other sectors

Most businesses also require some form of financial services in order to operate efficiently, such as bank accounts, savings and investment products, credit and payment services support. Banks also help larger corporates raise capital in domestic and global financial markets by underwriting debt and equity issuance and to help hedge against foreign exchange and interest rate risks. The FS sector supplies essential services of €530 billion in value to EU businesses, which is equivalent to 4.7% of total intermediate demand from other sectors. Figure 2.8 shows the value of FS products and services that are purchased by other sectors. Apart from the FS sector itself, the real estate sector is the largest customer of financial services – much of this is represented by mortgage and refinancing of real properties.

Figure 2.8: FS sector products and services purchased by other sectors, 2011



Source: Eurostat

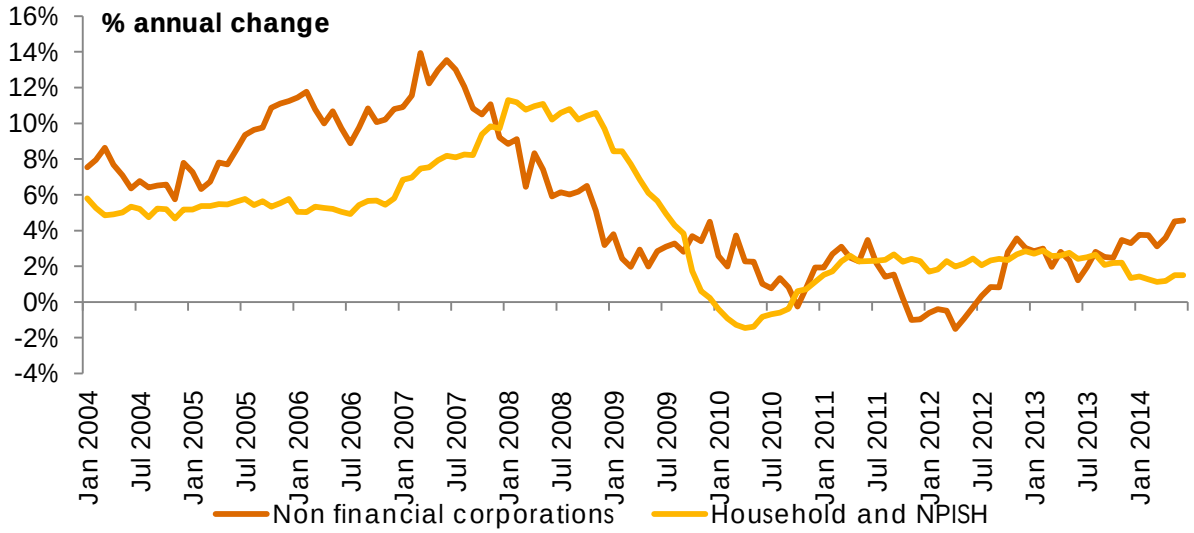
2.3 Financial intermediation

European banks play an important role in intermediating capital between savers and borrowers, channelling sources of funding to where it is most needed and fuelling business growth and expansion. European economies are heavily dependent on bank finance – outstanding bank loans to non-financial corporates amount to nearly €2.0 trillion in June 2014.

Figure 2.9 shows growth in bank credit to businesses and households between 2004 and 2014. It is clear that growth in bank lending in both categories has slowed significantly since the crisis. Credit growth to non-financial corporations averaged 1.9% a year between the start of 2009 and June 2014, falling from 8.4% before the crisis. The impact of the crisis on credit to households is slightly less pronounced - growth fell from 7.2% pre-crisis to an average of 1.6% after 2009.

The recent decline in the rate of credit growth within Europe could be contributing to lower economic growth rates across the wider economy, as businesses' access to funding is squeezed by the vicious cycle of low growth, low investment and low credit.

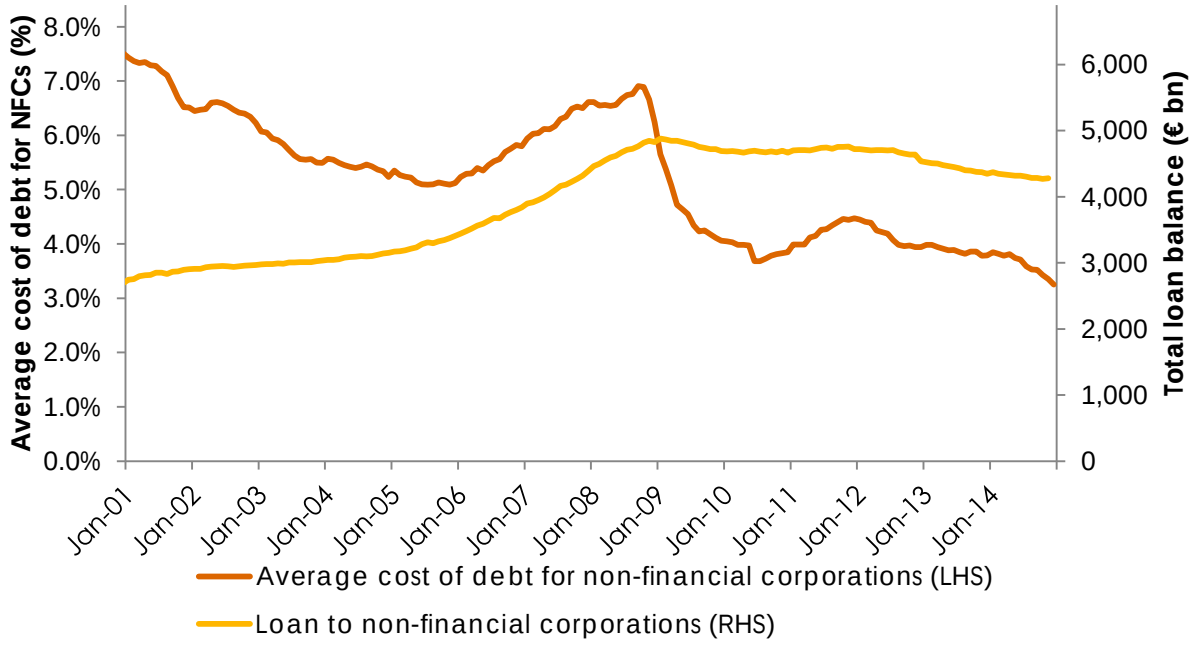
Figure 2.9: Credit growth by sector, 2004-2014[9]



Source: European Central Bank (ECB), Eurostat

Figure 2.10 shows trends in EU non-financial corporations' cost of debt and outstanding loan balance since 2001.

Figure 2.10: Non-financial corporations' average cost of debt and total outstanding loans



Source: European Central Bank (ECB)

[9] NPISH refers to non-profit institutions serving households, which includes charities, trade unions, and religious organisations.

The total level of outstanding loans increased from €2.7 trillion in January 2001, peaking in February 2009 at €4.9 trillion. The cost of debt for corporates increased in the run-up towards the crisis, peaking at almost 7% at the height of the financial crisis. Although the cost of debt has since declined, it has not been accompanied by an increase in loans to corporates, which has in fact declined slightly since 2009. This was not a reflection of lack of demand for corporate credit: the latest ECB Bank Lending Survey[10] shows that demand for loans or credit lines to enterprises reached a three year high. It is perhaps likely that lending volumes have been squeezed due to regulatory constraints and a reduction in banks' risk appetites following the crisis.

Reinvigorating bank lending is therefore an important element of the EU's economic recovery. Indeed, the academic research suggests that there is a positive association between credit growth and economic growth.[11] Financial sector development is also important, not only in facilitating economic growth, but also to dampen the volatility of growth and increase stability throughout the economy. Aghion *et al.* (2010) show that financial systems can alleviate liquidity constraints on firms, and facilitate long-term investment, which helps to stabilise investment and growth.

However, the quality of lending also matters. As we have seen from the crisis, credit growth that leads to the wrong type of investment also risks creating financial imbalances that could lead to asset bubbles and financial crises, which has a damaging impact on long-term economic performance. Banks therefore have an important role to play in supporting growth in the economy through lending, and ensuring that investors' capital is channelled towards productive investments.

European policymakers are also increasingly concerned about businesses' reliance on bank funding. European businesses remain heavily reliant on bank lending, which still accounts for around 15% of total outstanding funding for European corporates, whereas for US corporates it is 10%.[12] For small and medium-sized enterprises (SMEs), the importance of bank lending is even more prominent, as it is more costly for them to raise funds in the open market by issuing either bonds or equity. Bank loans account for around 20% of SMEs' balance sheets, compared to 11% for large firms.[13] Although total EU stock market capitalisation amounted to 65% of GDP by the end of 2013, this is a lower proportion than more developed equity markets in other advanced economies, such as the US, Canada, Australia and Japan.[14] The recent proposal for the EU Capital Markets Union therefore seeks to develop deep and liquid capital markets across borders that complement banks as a source of financing.

[10] European Central Bank, 'The euro area bank lending survey', Q4 2014.
[11] See among others: Levine and Zervos (1996), Beck, Demirguc-Kunt, Laeven and Levine (2005), Levine (2005)
[12] European Commission (2015) "Initial reflections on the obstacles to the development of deep and integrated EU capital markets", accompanying the document "Green Paper: Building a capital markets union".
[13] Source: Kaya and Schildbach (2014)
[14] European Commission (2015) (op cit).

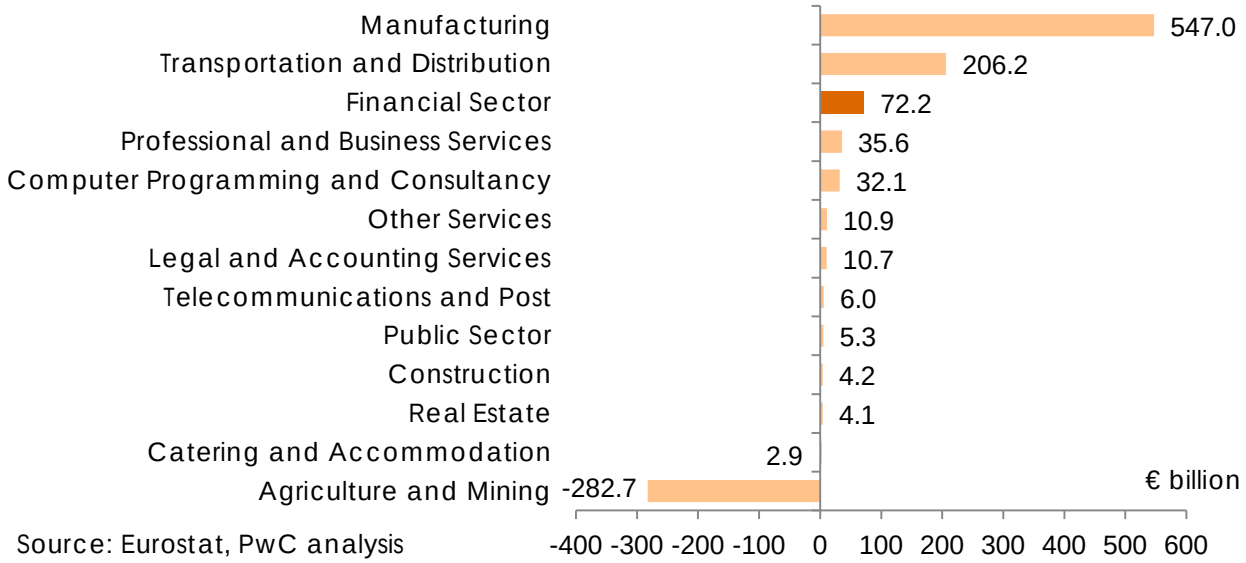
It is also important to note that banks are integral to the development of European capital markets and to provide support to other market participants. Through participation in financial markets, banks help companies and governments raise capital via debt and/or equity to support spending programmes or for investment and expansion. For example, banks have helped companies in the non-financial sector issue €500 billion of corporate bonds in Germany, France and the UK in 2012, and €100 billion of new equity since 2010 through rights issues and initial public offerings.[15,16]

Banks also provide liquidity in secondary markets for bonds and equities through their market making and brokerage services, enabling investors to trade their investments quickly and at low transaction costs. This encourages investors such as pension funds to invest in instruments that would otherwise be illiquid without bank intervention. Another important component of the Capital Markets Union proposal is to build sustainable securitisation, where assets such as mortgages are pooled together into various products such as collateralised debt obligations (CDOs) and asset-backed securities (ABS), which distributes the risks associated with the underlying pool of assets to investors who purchase difference tranches associated with different risk levels. The effectiveness of securitisation markets also depends on the ability of banks to analyse borrowers' credit quality.

Supporting the global economy

Figure 2.11 shows the net exports of the EU by sector in basic prices. The FS sector is a significant contributor to the trade balance of the EU, with net exports worth €72 billion in 2011.17 Exports by the FS sector account for around 5% of total EU exports in basic prices.18

Figure 2.11: Net exports of the EU-27 by sector, 2011, in basic prices



Source: Eurostat, PwC analysis

[15] Figures refer to the corporate securities outstanding from non-financial corporations, source: European Central Bank

[16] Based on PwC analysis of Capital IQ data

[17] Latest available data from Eurostat's Supply and Use tables

[18] Export and import data are obtained from the EU-27 input-output table, and are presented in basic prices – its value at the European point of entry before any customs duties or tariffs are applied. In particular, imports are valued on a cost, insurance and freight (CIF) basis, and exports are valued on a free on board (FOB) basis.

Banks also play a critical role in supporting EU exporters and enabling trade across sectors and borders. Banks support international trade by providing a wide range of products that enable exporters to manage their international payments and hedge against currency risks, and provide working capital. Trade finance performs two roles: first, providing capital tied to, and in support of international trade transactions, and second, providing the means to reduce payment risk (CGFS, 2014). The BIS estimates that global bank-intermediated trade finance amounted to around US$6.5-8 trillion in 2011. In a survey conducted by the IMF and BAFT-IFSA (2009-2011), participating banks estimated that about 40% of global trade was supported by bank-intermediated trade finance, and letters of credit covering about one-sixth of total trade (CGFS, 2014).

The continued support of the FS sector is also important in realising one of the goals of Europe 2020, which is to create an open single market for services on the basis of the Services Directive, and to drive an increase in trade in commercial services and encourage investment in the services sector. Services sectors account for a significant proportion of total EU GVA. There is significant potential for growth in services trade: full implementation of the Services Directive could generate an increase in trade in commercial services by 45% and foreign direct investment by 25%.[19]

2.4 Fiscal contribution

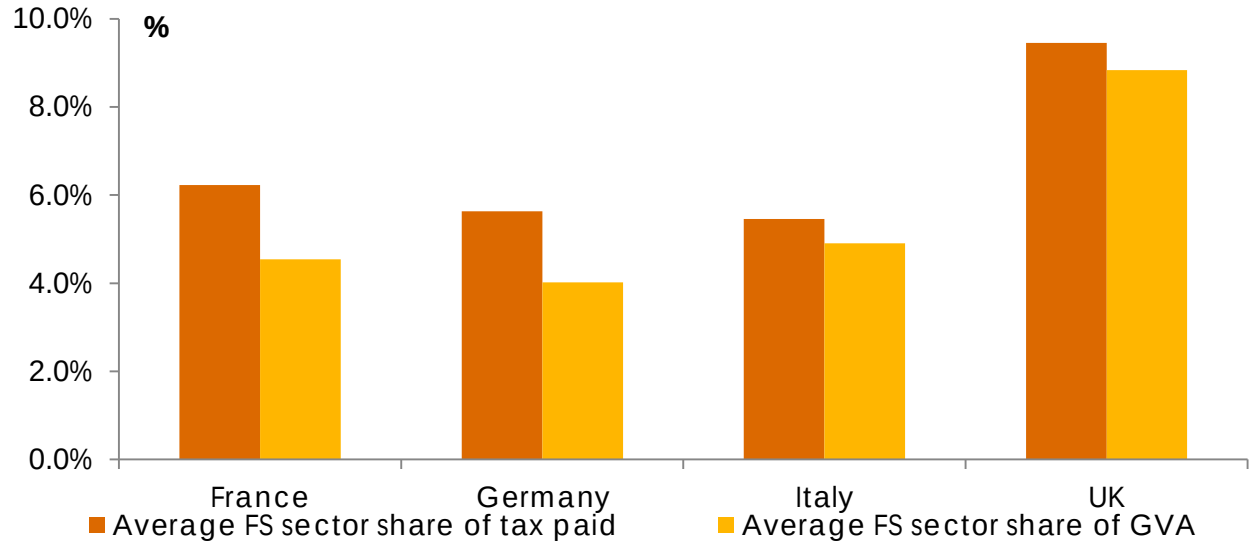
The taxes paid by the FS sector are coming under increasing scrutiny since the onset of the financial crisis. However, research conducted by PwC for the Association for Financial Markets in Europe (AFME)[20] suggests that the taxes borne and collected by the FS sector provide a significant and stable contribution to government revenues across the EU. The FS sectors in the largest EU economies (France, Germany, Italy and the UK) combined generated nearly €209 billion in taxes annually between 2006 and 2010, equivalent to an average of 6.6% per annum of total tax receipts in these countries.[21] The taxes borne directly by the FS sector include corporation tax, and taxes collected by the FS sector include personal income taxes and employee social security contributions.

In order to benchmark the FS sector's tax payments against its share of national economic activity and the wider economy, we use two key measures. The first measure compares the FS sector's share of tax payments against its share of GVA for the whole economy. The second measure compares the FS sector's average effective tax rate (AETR) – defined as the ratio of the FS sector tax payments as a proportion of its GVA – against the AETR for the whole economy (ratio of total tax receipts to whole economy GVA).

On the first measure, we find that for France, Germany, Italy and the UK, the share of taxes paid and collected by the FS sector exceeds the share of national GVA over the period between 2006 and 2010. Figure 2.12 shows that financial services firms in the UK account for a particularly high proportion of total tax receipts, which also reflects its outsized contribution to the UK economy.

[19] European Commission (2010) "Europe 2020: A strategy for smart, sustainable and inclusive growth"
[20] PwC report for AFME "An overview of the taxes generated by the European Financial Services Sector: An assessment for the Association for Financial Markets in Europe", October 2013
[21] Consistent data on taxes borne and paid at the EU level is difficult to obtain, as the full range of taxes paid are not typically available from national data sources. Tax forms that are used to administer the tax system also do not allow for the attribution of taxes to industrial sectors. As a result, analysis of tax contributions from the financial services sector focuses on the largest EU economies.

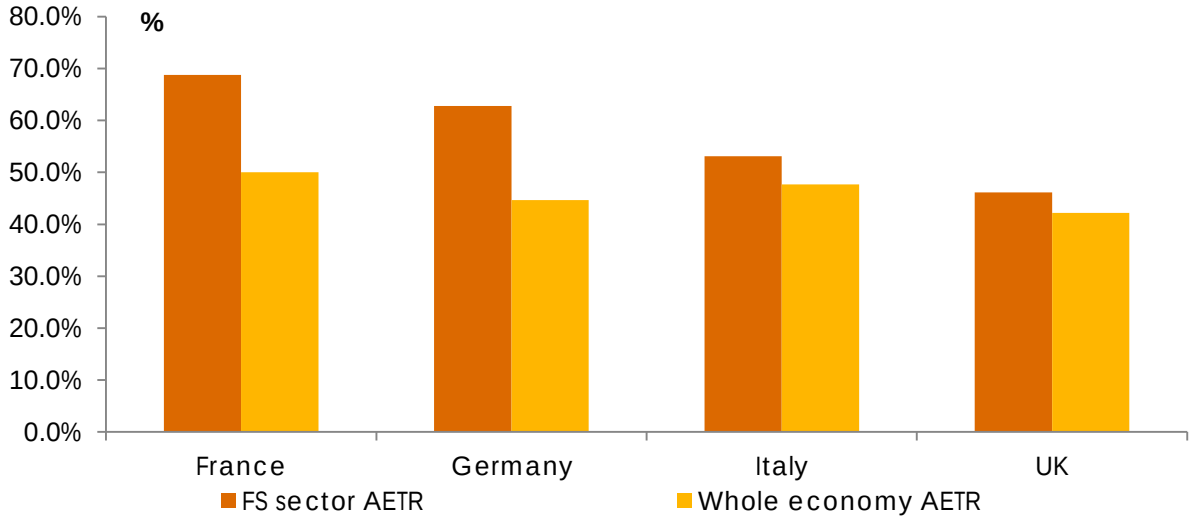
Figure 2.12: FS sector share of taxes paid vs share of GVA, average 2006-2010



Source: PwC analysis for AFME

On the second measure, we find that the AETR of the FS sector averages at around 58% across France, Germany, Italy and the UK. This compares to the whole economy AETR of around 46%. This is shown in Figure 2.13. The sector paid €195 billion (or €39 billion a year on average) in additional taxes compared to the rest of the economy as a result of its higher AETR. On both these measures, the tax contribution of the FS sector exceeds the share of total economic activity it generates.

Figure 2.13: FS sector AETR vs whole economy AETR, average 2006-2010



Source: PwC analysis for AFME

2.5 Overall contribution

To summarise, they key features of the overall contribution of the European FS sector are:

- In 2013, the sector generated €731 billion of GVA (in real terms), accounting for around 5.9% of EU-27 total GVA. It employed 6.4 million people, or 3% of the workforce. The FS sector is more productive than that of the rest of the economy.

- The total value of intermediate goods and services purchased by the FS sector from other sectors amount to €316 billion, so it is a key source of demand for other sectors, particularly professional services, computer programming, and telecommunications and postal services. The FS sector supplies essential services of €530 billion in value to EU businesses, which is equivalent to 4.7% of total intermediate demand from other sectors.
- The FS sector has a key role of intermediating between savers and borrowers, allowing savers to earn returns and unlocking both business and residential investment.
- The €72 billion trade surplus in financial services provides a powerful contribution to the EU trade balance, and demonstrates the EU's competitiveness in financial services. It is an important source of trade diversification alongside a far larger surplus in manufacturing (worth €547 million).
- The FS sector is also a major contributor of EU fiscal revenues. Between 2006 and 2010, the combined tax contribution of FS sectors in UK, France, Germany and Italy averaged €209 billion per annum. The sector's share of taxes paid is higher than across the economy for each of the four countries as a whole. The sector pays €39 billion a year in additional taxes (including corporation tax, personal income taxes and employee social security contributions) compared to the whole economy as a result of its higher average effective tax rate.

3. Modelling different scenarios for FS sector growth

3.1 Introduction

The future of the EU FS sector is uncertain following the changes to the industry in the years following the financial crisis. In this report, two possible scenarios are set out which describe what a future FS sector might look like between 2015 and 2030:

- In **Scenario 1,** we assume the FS sector grows at 60% of its pre-crisis growth rate (i.e. it grows at 1.9% per annum), with a supportive regulatory, market and economic environment. In this scenario, the FS sector grows at a substantial, but more sustainable rate than it did before the 2007 crisis; and
- In **Scenario 2** we show the impact of a more challenging regulatory and market environment. We define this scenario such that annual growth in the FS sector is close to 0%.

These scenarios are analysed using a Computable General Equilibrium (CGE) model. This is a large scale economic model that is based on the EU-27 countries as a whole. There are a number of factors that affect the FS sector; in this report the analysis has focussed on what we consider are the key macroeconomic drivers for FS sector growth.

This chapter describes the structure of the model used, further details on the scenarios constructed and the key results and conclusions we draw from our analysis.

3.2 PwC's economic model

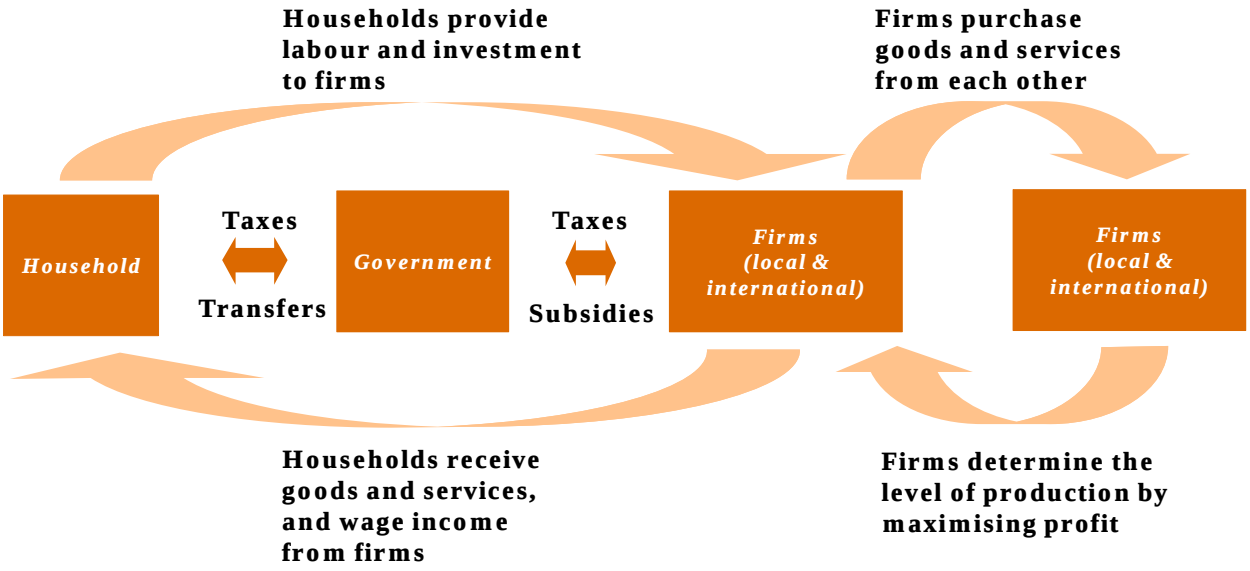
The CGE model for the EU economy was developed and applied by PricewaterhouseCoopers LLP in the UK, and was used to assess the economic impact of policy changes. It contains a set of equations that numerically simulates the behaviours and economic interactions of all agents in the economy (i.e. firms, households and the government). These models are a standard tool of empirical economic analysis, and are widely recognised and used by international organisations such as the IMF, the OECD and the World Bank, as well as the European Commission (EC), national governments and central banks.

CGE models are designed to test different economic scenarios, i.e. key economic variables are adjusted or "shocked", and then the model adjusts over time to a new equilibrium that takes into account the impact of the "shock" applied for that scenario.

The model measures how much of an impact different scenarios have on the EU economy relative to an assumed baseline. This baseline comprises a short to medium-term forecast of EU economic growth and then a longer-term projection that assumes that the economy grows in line with an assumed trend. For the purposes of this analysis we project a baseline out until 2030.

The model produces multiple outputs - for example, the effect of a change in a particular component of the financial sector can be traced through such elements as its impact on GDP, investment, trade, employment, house prices, and government expenditure.

Figure 3.1: Relationships in a CGE model



Source: PwC analysis

3.3 Designing our scenarios

The CGE model contains various levers which can be used to simulate changes to the size of the FS sector. To simulate the effects of the scenarios described above, changes are made to some key variables that impact the FS sector and its products. In addition to the FS sector variables, changes are also made to variables that affect the demand for FS sector across the wider economy.

Table 3.1: Variables adjusted to reflect the core features of the FS sector in the two scenarios

CGE model parameters	Description	Transmission mechanism
Capital efficiency	The corresponding shock is applied as a one-off increase in return on capital investment.	The impact of this shock is similar to that on the return of capital.
Demand for EU-27 business products	The corresponding shock is applied as a one-off increase in domestic and overseas demand on FS products by non-FS sectors.	Growth in the FS sector will have spill over effects within the economy which should be incorporated in the model. Further, a more productive FS sector also suggests that overseas demand for its products will also increase.
Return on capital	The corresponding shock is applied as a one-off increase in return on equity and/or debt for one or more industries.	A stagnant FS sector is associated with lower return on investments in the FS sector. Over time, less investment will be made in the sector, with repercussions across the economy.

Source: PwC analysis

3.4 Our findings

The model produces multiple outputs - for example, the effect of a change in a particular component of the financial services sector can be traced through such elements as its impact on GDP, investment, trade, employment, and government expenditure.

The economic contribution of the FS sector

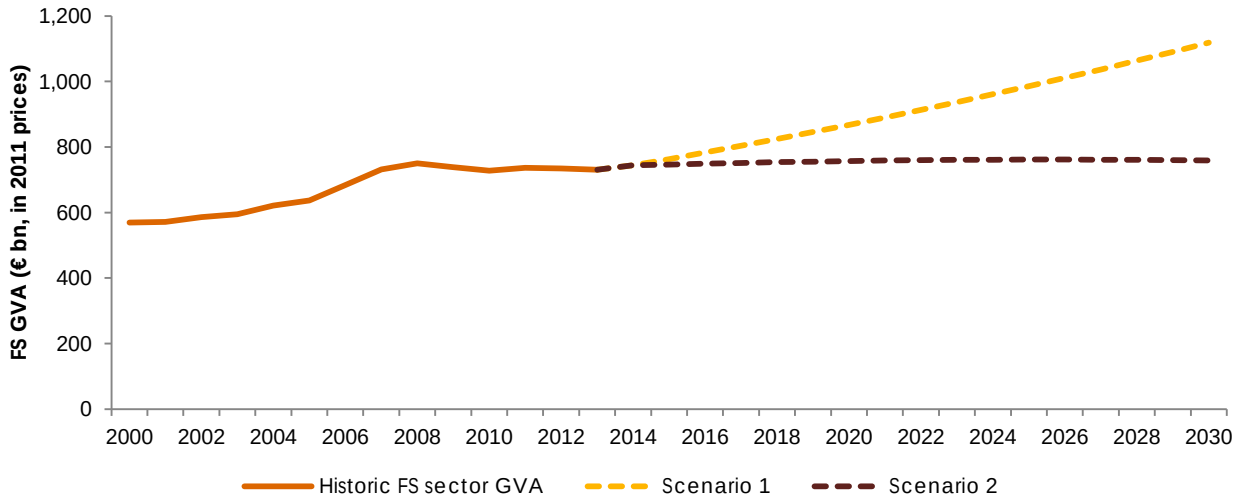
Between 2000 and 2007, FS GVA grew on average by 3.7% per annum, with growth in 2006 and 2007 being in excess of 7%. This was a period of unprecedented growth in the sector that is unlikely to be replicated again in the medium-term. In the years following the onset of the recession (2008 to 2013), growth in FS sector GVA has remained close to zero, at 0.03% per year, with declines of -1.5% per year in 2009 and 2010. The scenarios developed in this analysis reflect two distinct possibilities based on the two periods of growth. Figure 3.2, which shows the model outputs for FS sector GVA, demonstrates the model outputs which reflect the target growth path for FS sector GVA under both scenarios.

In Scenario 1, the analysis seeks to simulate a scenario where the FS sector grows at a strong but sustainable rate. The analysis assumes that the FS sector grows at 60% of the average growth rates in the period from 2001 to 2007. We adjust the three drivers described in Chapter 3.3 to produce an average growth rate of 1.9% between 2015 and 2020, i.e. approximately 60% of the average growth rate in the years from 2001 to 2007.

In Scenario 1, FS sector GVA is expected to increase from €731 billion in 2013 to €1,011 billion in 2030. In terms of percentages of total EU GVA the sector contributes around 5.9% in 2013 rising to 6.0% by 2030.

This is just one possible future outcome for the FS sector and demonstrates what could be achieved for the EU economy through the creation of a suitable economic environment to support FS growth. While growth in this scenario is not as strong as observed in previous years, it still positions the FS sector as a future driver of EU growth.

Figure 3.2: FS sector GVA (EU-27), historic (2000-2013) and model outputs (2014-2030), € billion



Source: Eurostat, PwC analysis

In Scenario 2, the analysis seeks to simulate a 'counterfactual' scenario where the FS sector GVA registers negligible growth; based on the average growth rate in the period from 2008 to 2013. We adjust the three drivers described in Chapter 3.3 to produce an average FS sector growth rate of close to zero (0.04%) between 2015 and 2020. Again, as with Scenario 1, this is just one possible future outcome for the FS sector, but, when compared to Scenario 1, would serve to demonstrate how the EU economy could be restrained through the creation of an environment that does not support future FS growth.

In Scenario 2 the rate of growth of FS sector GVA has been restricted to close to 0% per annum meaning that the contribution of the FS sector changes marginally, to €736 billion in 2030. The contribution of the FS sector to total GVA declines from 5.9% in 2013 to 4.6% by 2030.

In this scenario, the contribution that the FS sector makes to the economy is constrained using conditions that cause lending and returns to capital to fall, and the flow of money around the EU is heavily restricted and the benefits of a well-functioning financial sector are not felt by the wider economy.

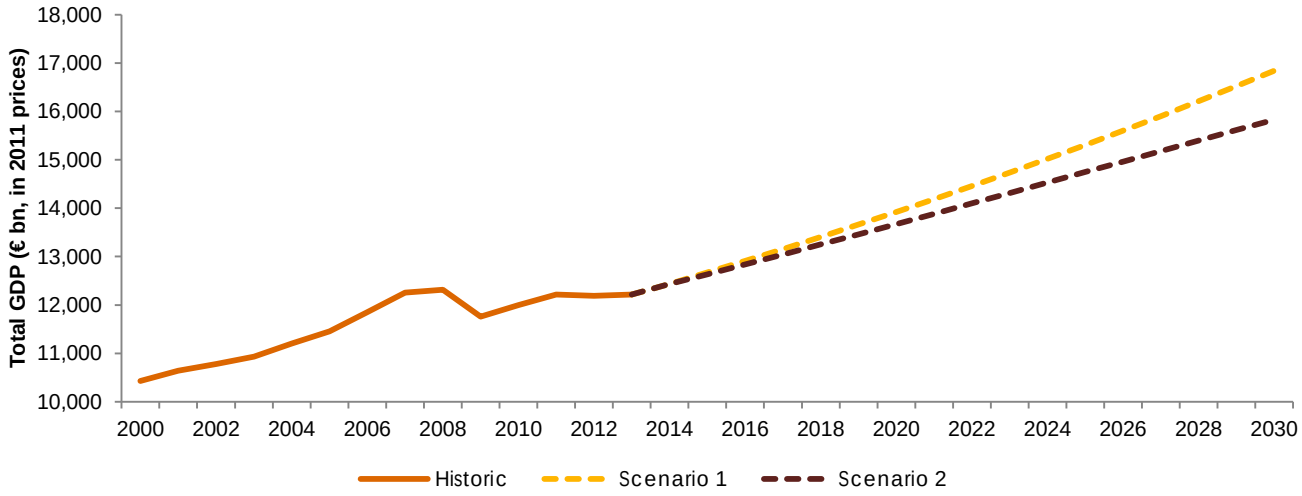
3.5 Impact on GDP

The model outputs shown in Figure 3.3 illustrate the impact of the two scenarios on the EU economy. In Scenario 1, where the FS sector grows at 1.9% (or 60% of its pre-crisis growth rate), EU GDP grows by 1.8% annually between 2015 and 2030. This compares to a pre-crisis growth rate of around 2.1% per annum between 2000 and 2008.

However, in Scenario 2, GDP grows by only 1.5% over the same period, reflecting the slower rate of growth in financial services. It is clear that growth in the FS sector, which generates additional output and demand for goods and services from other sectors, has a positive impact on growth in the wider economy. It is worth noting that the adjustments in GDP growth rates are smaller in magnitude than the adjustments in the size of FS sector output in both scenarios. This is because the impacts of the changes in the FS sector (either upwards or downwards) are "diffused". In the case of FS sector expansion (Scenario 1), this means that as the FS sector grows it draws in resources from other parts of the economy and drives up prices, which in turn mitigates the positive impact across the wider economy in the scenario.

However, the difference in total GDP is €201 billion in 2020, increasing to €458 billion in 2025, and €850 billion by 2030. The corresponding difference in FS sector GVA is €85 billion in 2020, increasing to €172 billion in 2025, and €275 billion by 2030. To put it differently, our modelling suggests multipliers of approximately 2.3-3, i.e. a change of €1 billion in FS sector GVA is associated with a change in GDP of €2.3 billion to €3 billion.

Figure 3.3: Total GDP, historic (2000-2014) and model outputs (2015-2030), € billion



Source: PwC analysis

Impact by GDP components

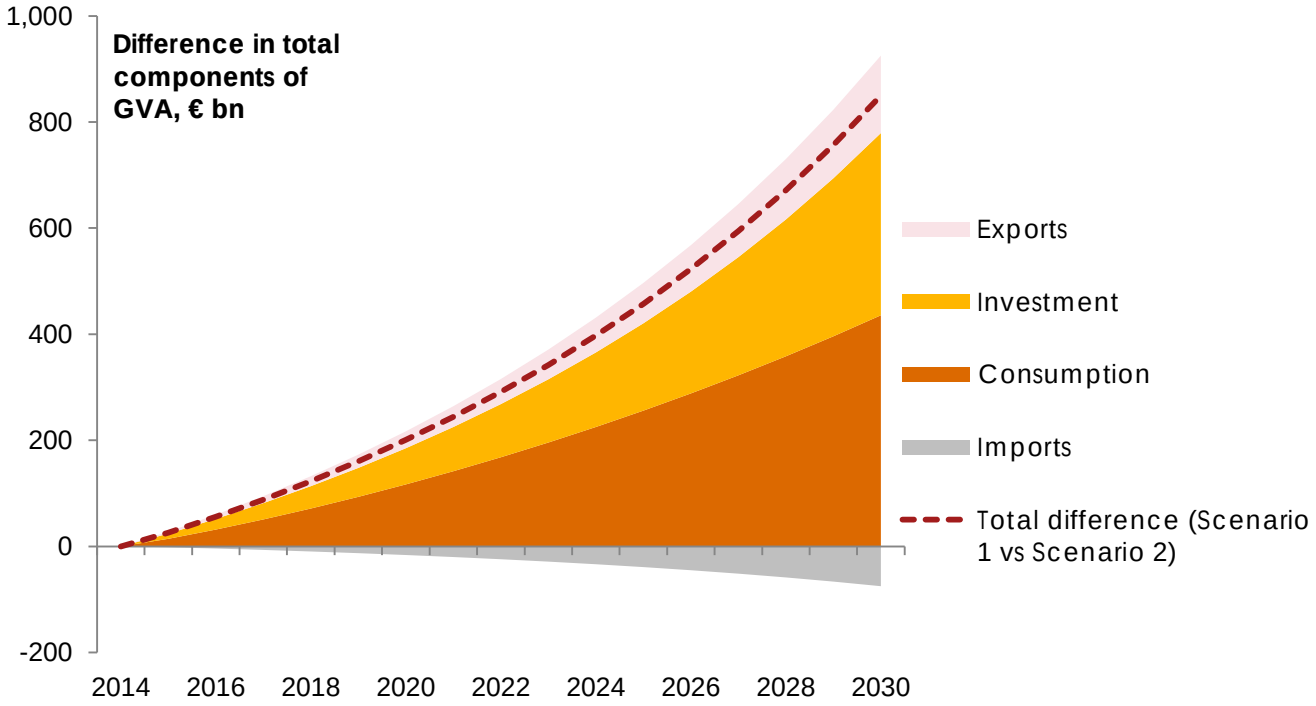
One way to measure GDP is on an "expenditure basis", i.e. in terms of the expenditure by household and businesses in the UK. The expenditure measure is made up of components according to the national accounting identity expressed as:

GDP = Consumption + Investment + Government expenditure + Exports – Imports

In this chapter, we describe the impact on the economy in terms of the constituents of GDP. Figure 3.3 shows that difference in total GDP by 2030 is €850 billion by 2030. Of this, €436 billion is due to differences in consumption, €344 billion is due to differences in investment. Exports are €146 billion higher in Scenario 1 compared to Scenario 2, and imports are €75 billion higher. Therefore, the resulting net trade impact in Scenario 1 is €71 billion higher in Scenario 1 compared to Scenario 2. This reflects the role of financial services as both a key contributor to EU exports, and its role as a facilitator of trade.

Figure 3.4 breaks down the differences in forecast GDP between Scenario 1 and Scenario 2 into their component parts over time. This chart represents the gap between the two lines in Figure 3.3.

Figure 3.4: Difference in GDP and its components between Scenario 1 and Scenario 2, € billion



Source: PwC analysis

The cost of borrowing is lower in Scenario 1 relative to Scenario 2 which triggers greater investment in Scenario 1. The higher investment leads to an increase in productivity and greater returns to capital, which reinforces the differences in investment levels.

Consumption is also significantly higher in Scenario 1 relative to Scenario 2. This is because of the higher productivity in Scenario 1, relative to Scenario 2, which leads to an increase in household income, and therefore allows higher consumer spending.

The higher productivity in Scenario 1, relative to Scenario 2, leads to greater international competitiveness which leads to an increase in exports. On the other hand, greater productivity is also associated with businesses being able to source production inputs from overseas. Further, greater consumption also means that more imports will be required in the domestic market.[22]

[22] Note that the imports are estimated to be higher in Scenario 1, but as imports make a negative contribution to GDP according to the National Accounting Identity, the difference imports is shown to be negative in Figure 3.4.

Impact on GVA and employment by sector

On its own, the FS sector employs nearly 6 million people and generates €731 billion in GVA in 2013. In addition, other sectors also depend on it. The fortunes of the FS sector have influenced GVA and employment in other sectors. For example, in the pre-recession period, growth in the FS sector was accompanied by growth in employment in other sectors. Similarly, during the crisis, the decline in the FS sector had an effect on the wider economy.

Error! Reference source not found. shows the forecast difference in sectoral real GVA between the two scenarios, and Table 3.3 shows that the difference in the number of jobs created.

Table 3.2: Difference in real GVA created between Scenario 1 and Scenario 2, € billions

	2020	2025	2030
Agriculture and mining	3.5	8.7	16.9
Manufacturing	18.0	48.8	103.3
Construction	17.9	46.3	101.2
Wholesale and retail trade	12.8	29.8	56.0
Transportation	5.7	13.0	23.5
Telecommunications and post	2.7	5.9	10.3
Catering and accommodation	2.6	6.3	11.9
Computer programming and consultancy	5.2	13.4	29.1
Total financial, insurance and auxiliary services	85.2	171.7	274.5
Financial services	*61.7*	*124.1*	*198.0*
Insurance services	*15.1*	*30.4*	*48.5*
Auxiliary financial services	*8.4*	*17.2*	*28.0*
Real estate	26.6	63.3	118.9
Legal and accounting services	5.1	13.3	28.5
Other services	12.6	32.0	67.6
Public services	2.4	5.1	8.6
Total	**200.5**	**457.5**	**850.1**

Source: PwC analysis

The FS sector shows the largest GVA impact across all sectors in Scenario 1, relative to Scenario 2, of €275 billion, of which €49 billion accrues to the insurance sector, €28 billion accrues to services auxiliary to the FS sector, and the rest, €198 billion, accrues to integral (non-auxiliary) financial services.

The analysis suggests that employment in the FS sector will increase by 1.8% per year on average in the period from 2015 to 2030 in Scenario 1 while GVA growth in the same period is 1.9%. The corresponding increase in employment in Scenario 2 is approximately -0.2% per year while the GVA growth in the same period is close to zero.

Among the other sectors, those with strong linkages to the FS sector show the largest gains. This is consistent with historical growth patterns, where strong performance in the FS sector was accompanied by growth in other sectors.

Outside the FS sectors, gains are largest in the manufacturing, construction, trade and services (including the computer programming and consultancy, real estate and the legal and accounting sectors). The services sector benefits from the downstream purchases of the FS sector, while the manufacturing and construction sectors are able to create jobs through increased growth associated with more effectively targeted lending and more suitable financial products.

Overall, an additional 11 million jobs are created in Scenario 1 relative to Scenario 2. Further, more jobs are created in the wider economy (8.7 million jobs) as opposed to the FS sector (2.3 million jobs).

Table 3.3: Difference in jobs created between Scenario 1 and Scenario 2, thousands

	2020	2025	2030
Agriculture and mining	117	282	541
Manufacturing	329	818	1,665
Construction	375	957	2,057
Wholesale and retail trade	278	636	1,177
Transportation	92	207	369
Telecommunications and post	33	71	122
Catering and accommodation	68	159	299
Computer programming and consultancy	65	165	354
Total financial, insurance and auxiliary services	739	1,465	2,307
Financial services	*483*	*955*	*1,499*
Insurance services	*151*	*299*	*470*
Auxiliary financial services	*105*	*211*	*337*
Real estate	37	87	161
Legal and accounting services	62	159	335
Other services	274	684	1,420
Public services	54	112	183
Total	**2,524**	**5,804**	**10,990**

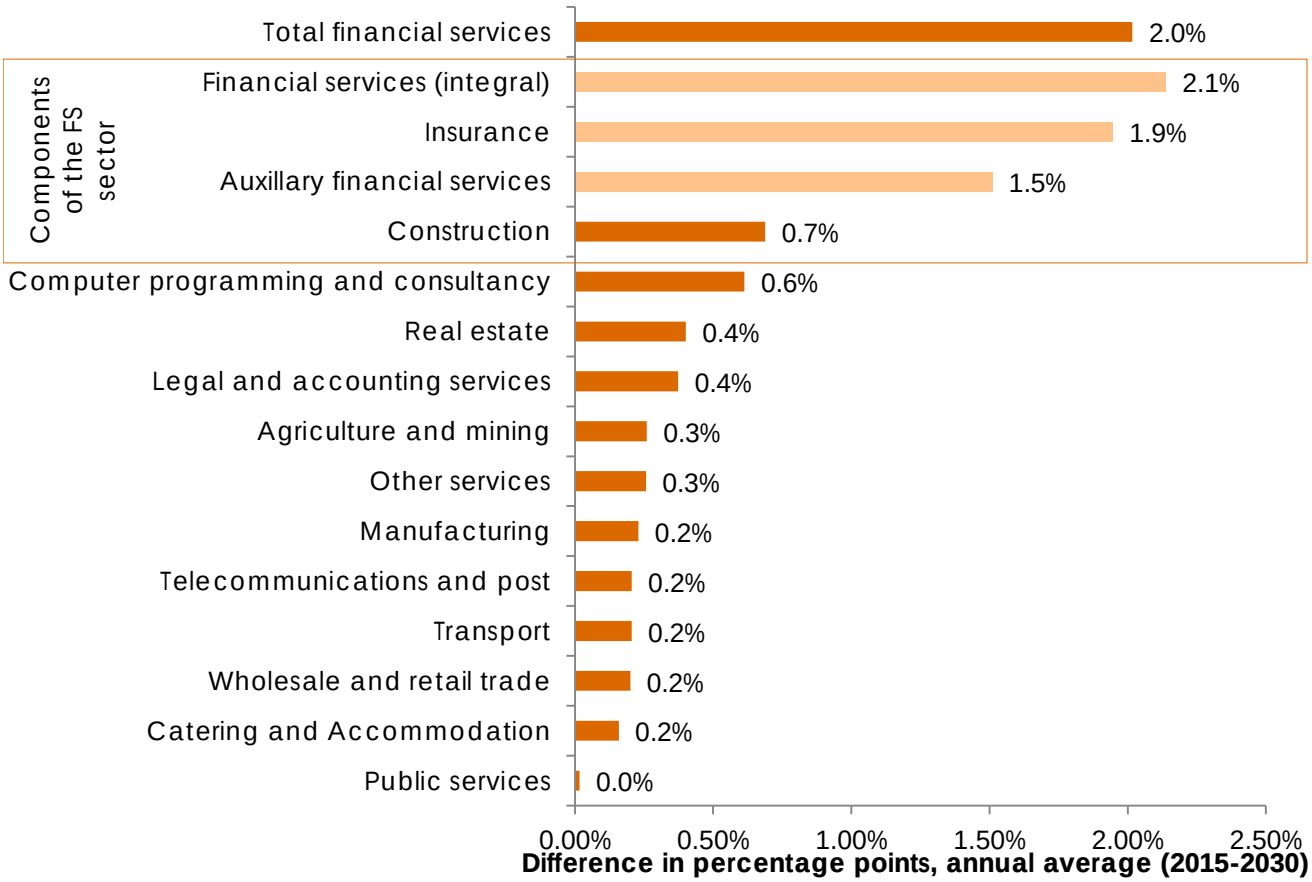
Source: PwC analysis

The impact on the non-FS service sectors is shown in Figure 3.5 which shows the difference in GVA growth rates by sector between Scenario 1 and 2.

The construction sector shows the most additional growth when comparing Scenarios 1 and 2 (0.7% more). The computer programming and consultancy sector, legal and accounting services sector, and the real estate sector also show significantly more growth in Scenario 1. The differences in the growth are driven by their comparatively strong linkages with the FS sector. In Scenario 1, these sectors directly benefit from the expansion in the FS sector, as a result of the increase in the FS sector's demand for goods and services from other sectors. In Scenario 2, these sectors perform less well due to slower growth in the FS sector.

The differences in the growth rate of the construction and real estate sectors between Scenarios 1 and 2 are indirectly driven by growth in the FS sector. This means that in Scenario 1, sectors that benefit from FS sector expansion subsequently increase their investment in the construction and real estate sectors. Conversely in Scenario 2, these sectors reduce investment in the construction and real estate sectors as a result of slower growth in the FS sector. Manufacturing and trade, which show the largest differences in absolute terms, differ by only 0.2% in average GVA growth rates. The difference in GVA growth is the greatest in the construction sector, where GVA grows at 1.8% in Scenario 1, compared to 1.1% in Scenario 2.

Figure 3.5: Difference in sector GVA growth rates between Scenarios 1 and 2, annual average (2015-2030)



Source: PwC analysis

4. Conclusions

A well-functioning FS sector is critical to the economic growth of Europe. 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 others. Banks also help businesses manage their risk and investments, raise capital, and facilitate efficient flows of domestic and international capital. The sector is therefore an important supplier of services to households and businesses, and is also an important source of demand for other sectors.

This report looks at two possible scenarios for the future of European financial services, and highlights how growth in the FS sector can have significant impacts on growth in other sectors in the economy. Our modelling suggests that an increase in FS sector GVA of €1 billion is associated with a change in total EU GDP of around €2.3 billion to €3 billion, demonstrating the important multiplier effect of FS growth and its role in promoting and supporting the growth of other industries. If the FS sector achieves annual growth of 1.9% over the 2014-2030 period, approximately 11 million jobs will be created across the whole economy, of which 79% will be outside the FS sector. This is broadly in line with research by Aghion *et al.* (2004), which suggests that the provision of a well-functioning financial system is critical for growth.

On the other hand, our findings also highlight the risks of continued slower growth in the FS sector, as a result of a more challenging regulatory and market environment. Our analysis suggests that under a scenario of continued low growth in the FS sector (compared to growth of around 2.9% per annum between 2000 and 2008), the GVA for the whole EU economy only increases by 1.4% annually between 2015 and 2030. Although the difference in growth rates seems relatively small, the cumulative impact on the size of the economy is significant: by 2030, the size of the EU economy is €850 billion larger in Scenario 1 than in Scenario 2.

Our analysis helps to show policymakers and regulators that they should remain cognisant of the importance of the FS sector in driving growth in the EU economy, and shows the benefits of a policy and regulatory environment which supports sustainable growth in the sector, to enable financial services to support the growth of other sectors. A sustainable FS sector is also important in realising the goals of the EU's Capital Markets Union initiative to diversify the financial system with deep and developed capital markets and establish a single market in the EU to unlock the flows of cross-border capital. Policymakers should carefully consider the potential impacts of new regulatory initiatives such as bank structural reforms and the financial transaction tax, and how they interact with existing rules and reforms, on the sector's ability to continue supporting economic growth.

Appendix 1: Discussion of the CGE model inputs

This chapter describes the impact on GDP of the key variables changed in the model. The effects of each variable differ significantly, and these effects are compared using their corresponding output elasticities. [23] Output elasticity is measured as the ratio of the estimated GDP impact (Scenario 1, as a % of Scenario 2) to the difference in the input variables (again, Scenario 1, as a % of Scenario 2). Table A.0.1 shows the output elasticities estimated from the model for each of the three input variables in this analysis.

Table A.0.1: Output elasticity results

Model variable	Description	Output elasticity estimates
The return on capital	Higher capital returns boost profitability and growth in both the FS sector and the wider economy.	0.12%
Capital efficiency	Financial product innovation is essential for EU sector growth	2%
Spill-overs from a well-functioning FS sector to productivity and demand	A well-functioning FS sector boosts business confidence leading to increased productivity and demand	0.49%

Source: PwC analysis

In the rest of this chapter, the three input variables are discussed in greater detail.

A1.1 The return on capital

The rate of return on capital experienced by the FS sector and the wider economy is important to the future success of the financial services sector. Within the FS sector there will be a broad range of rates of return that will vary between financial products. Usually this variance is correlated with risk (i.e. higher returns would be expected if investors take more risk).

When the average return on capital is changed, the integral financial services component of the FS sector (as opposed to the auxiliary and insurance components) gains the most from an increase in capital returns. This is because of its direct links with the wider economy. Higher returns fuel demand for capital from the non-FS sector and in turn this boosts profitability and GVA. These linkages are less strong in the insurance and auxiliary financial services sectors, so the wider demand effects are not as pronounced.

The output elasticity obtained from the model suggest that a 1% change in the rate of return on capital changes output by 0.12%, making it the weakest of the three input variables in this analysis.

[23] An output elasticity of X% implies that for every 1% change in the parameter estimate, GDP moves by plus or minus "*X*"%.

A1.2 Capital efficiency

The rate of innovation in financial products can lead to greater efficiency in the use of capital. Capital is a scarce resource, so increased efficiency in its usage will benefit both households and businesses. The increased complexity of financial products and the associated innovations has been cited both as a causal factor in the financial crises and a significant contributor to the financial boom prior to the crises.

The rationale for adjusting capital returns relates to the changes in capital returns relative to the capital stock in the 10 years prior to the financial crises, which are observed to adjust in real terms by approximately 1.5% above the long-term trend growth rate. So, in keeping with a broader vision for a more sustainable FS sector in the future, we have chosen to build a lower estimate in to Scenario 1. The corresponding metric for Scenario 2 is held significantly lower to restrict the growth in the FS sector.

Given this range of products and the importance of financial innovation for the FS sector itself, the output elasticity produced by the models capital efficiency parameter is substantial. The model suggests that for each percentage point increase in the whole economy capital usage, GVA will increase by 2.0%.

A1.3 Spill-overs from a well-functioning FS sector to UK productivity and demand

A range of spill-over effects might be associated with a well-functioning FS sector. In part, all of the different effects described above could be assigned this category. However, there are broader economic implications associated with the FS sector. The main channel that we focus on in this report relates to the issue of business confidence. The greater confidence that businesses have that their future output or profitability will increase, the more likely it is that they will invest, leading to an increase in the different components of GDP such as consumption and exports.

A well-functioning FS sector would be able to judge the likely risk and return associated with new investments and lend at an appropriate level. This is the situation reflected in Scenario 1 which assumes that businesses believe that if they were able to invest that the required finance would be forthcoming. In Scenario 2, the opposite is true. This lack of financial support might be due to reasons such as information constraints on behalf of lenders that mean they are unable to judge investment returns properly or are experiencing wider economic difficulties that might affect their lending – the interaction of the FS sector with the current Government debt crises may also be a reason.

The output elasticity associated with this parameter is also substantial: at 0.5%: Implying that if the FS sector is well functioning and facilitates productivity gains, wider economic spill-overs and increases in confidence and demand, then the UK economy will benefit. The scale of this result again reflects the strong linkages that the FS sector has with the wider economy.

Appendix 2: Bibliography

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