

PRACTITIONER POLICY PAPER



Europe Economics



Report prepared for the City of London Corporation and TheCityUK
by Europe Economics
Published July 2011

The Value of Europe's International Financial Centres to the EU Economy

City of London Economic Development
PO Box 270, Guildhall, London, EC2P 2EJ
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Foreword

As part of their effort to better inform policy and promote the competitiveness of the UK's financial services industry, The City of London Corporation and TheCityUK support the work of the International Regulatory Strategy Group (IRSG) which is committed to open and competitive markets driving sustainable economic growth.

Previous City of London and TheCityUK commissioned research has investigated the importance of the wholesale sector to Europe and the requirements for regulation. This latest research explores more fully the clustering of European financial centres and the networking between them, as they bring economic benefit both to the UK and the wider EU economy. This independent report, commissioned for the IRSG from Europe Economics, is a contribution to an evidence base which will inform the European debate on the regulation of financial services.

The 2007/8 banking crisis, and the subsequent bailouts and recession, has severely shaken any over-confident belief in the ability of the global banking system and financial markets to readily deliver faster growth with stability. With hindsight, we see the global crisis was a multi-faceted systemic failure – in products, supervision and corporate governance. Solutions to these problems are neither quick nor straightforward and we must recognise that future crises, of a different character from the past, will still occur. However, mitigation of future crises will be better if based on good understanding and engagement with the industry. The norm should be for a well-regulated sector, supporting economic growth in good times, but with built-in support systems that are well designed to resist shocks and contagion in bad times.

The report sets out robust measures of the economic contribution to the EU made by financial services firms operating in its major financial centres. It is illuminated by interviews undertaken with practitioners in different centres and by case studies drawn from EU businesses, the customers and clients of the financial services sector. We are grateful for the contributions of members of the Roundtable of European Financial Centres and individuals in the European financial services and broader business community who have helped to shape the final report by their openness and depth of insight.

It is easy to see the direct benefits of financial services to households in the EU. Many, such as effective and reliable retail banking services are often taken for granted. One evident success of the EU single market is the way EU firms now compete across borders to offer households cheaper and more efficient services. Less easy to explain are the complementary but more complex financial services for businesses, large and small, that in turn bring indirect but substantial benefits to households. These facilitate the efficient allocation of

capital through the flow of investment funds from those with available financial resources to those best placed to use these resources productively; they spread the risks of business and innovation to those best placed to bear them; they support business growth and so ultimately improve the wellbeing of EU citizens.

The report shows that firms located in eight major International Financial Centres - Amsterdam, Dublin, Frankfurt, London, Luxembourg, Madrid, Milan and Paris - account for the bulk of financial service provision in the EU. Such concentration in financial centres provides better access to capital, talent and markets, and brings a specialisation in the provision of services to global business. This generates direct economic benefits in the form of lower costs for consumers. This benefit then spills over into higher growth and boosts tax revenues. Location in these centres contributes to economic efficiency and boosts overall EU economic performance. The indirect contribution is that such specialisation and spatial concentration allows complementary specialisation in other business sectors and other geographic regions. This brings lower cost and a competitive dynamic to these other industries and boosts jobs in their domestic markets. This is a general benefit brought about by competition within the single market.

This is a challenging time to be benchmarking. Households, firms and governments are making painful budgetary adjustments in an effort to deal with the overhang of the severe global financial and economic crisis of 2008/9. The EU is restructuring the framework of regulation for financial services and seeking to make more transparent the wholesale markets in derivatives and currency. Governments are progressively reversing the state ownership of those banks rescued during the crisis. Most problematically, governments need markets to deal with the substantial increase in member state debt and fiscal deficits that were the response to the recent banking crisis – a crisis which also served to expose the underlying unsustainable fiscal position of some EU member states.

To establish a regulatory framework that can mitigate future crises, while not over-regulating in a way that inhibits growth and innovation, we need a better understanding of how financial services work and the real impact of regulation on the functioning of business. We welcome the spirit of engagement with the Commission and the Parliament that informs this process. Engaging proactively with business is essential for policymakers looking for effective solutions to the current set of problems, and that of course is a two-way process. These will need to ensure that EU financial services and their financial centres remain an important part of the EU's offering to global business. We should value the support financial services provide for other sectors of the economy throughout the EU - lowering the costs faced by households, businesses and governments and increasing the potential for trade-led growth and investment. This is in line

with the aspirations for the Europe 2020 strategy - both tapping the potential of the Single Market and attracting private capital to finance growth.

There are clear messages in the report for European governments. In a world where capital and talent are increasingly mobile, financial centres need to be deep and concentrated so as to establish regional advantage as business hubs, conduits for capital flows and pools of expertise and innovation. Having such centres embedded in the EU provides substantial direct benefits in terms of tax revenue, export earnings, employment and capital flows.

Stuart Fraser, Chairman of Policy, City of London
Stuart Popham, Chairman, TheCityUK

1 INTRODUCTION

- 1.1 All developments at present in the finance sector occur against the background of the deepest international financial crisis of modern times, bailouts of banking sectors around the world, and consequent discussions of extensive regulatory changes and changes to other issues of particular importance to the financial sector, such as personal tax, corporate taxes, and immigration rules.
- 1.2 A traditional response of the financial sector, when policy challenges and criticisms have arisen, has been to point to what one might call its “industrial policy significance” — its contribution in terms of jobs, GDP generation and taxes paid. Straightforward versions of such analysis would focus on the direct jobs, gross value added, and taxes of the financial services industry itself. More sophisticated versions would consider “indirect” jobs, value added, and taxes for industries in the region around a financial centre, created via “multiplier” effects.
- 1.3 Such analysis continues to be important, relevant and true in its own right. But in the current crisis policy criticism has evolved in a direction in which the traditional industrial policy significance arguments have limited purchase. In particular, it has been alleged (by the Chairman of the UK Financial Services Authority) that some of the activity of the wholesale financial services sector is “socially” useless.¹ A number of economists and analysts have joined in, suggesting that (at best) the key activities of the financial services sector merely pass value around, rather than generating any new value, and that high salaries and high investment returns in the financial services sector arise from lack of competition, market failures of various sorts, and the gaming of government bailout promises.
- 1.4 Trust in financial service providers has also reduced amongst the public. A recent survey by Edelman, the public relations company, showed that only 16 per cent of those Britons surveyed trust banks, down from 46 per cent in 2008.²
- 1.5 Critiques of the financial sector have added to traditional scepticism and antipathy towards financial services, from those that always alleged the activities of financial markets were little more than gambling games for the rich. When combined with the desire of taxpayers to find someone to blame for the recession, for the monies devoted to banking bailouts, and for subsequent public spending cuts and tax rises, a widespread sentiment has arisen that, far from the large amounts of GDP and employment generated by financial services being attractive, the economy and society would be better off without them.

¹ *Prospect*, 27 August 2009

² Cited in the *Financial Times*, 16 February 2011

- 1.6 To achieve real purchase in the debate in this context, a consideration of the value of international financial centres must go well beyond these traditional bounds and into a much deeper understanding of the broader contribution of the financial sector — how business investment is funded, including small local businesses; how pensions are paid for; how companies manage to buffer themselves against bad times, to hedge against risks, and insure against disaster; how broader access to financial services enables households to smooth consumption during periods of unemployment or unexpected drops in income (e.g. short-hours working) or family surprises (illness, divorce, babies) and hence to deliver greater overall macroeconomic stability (contrary to much recent discussion); how interventions in distressed businesses can preserve value and restore long-term jobs; how governments use international financial centres to borrow to service public spending in periods when tax takes are temporarily depressed.
- 1.7 This report demonstrates that it simply isn't true that the activities of international financial centres are socially useless (or even socially destructive) or that financial sector innovations are generally destructive. International financial centres produce and contribute towards a whole host of socially useful functions that households, businesses and governments benefit from.
- 1.8 Since much of financial services regulation is now set at the European level, we frame the discussion and analysis in this report in a Europe-wide context, rather than being framed purely in terms of the interests of one member state. There are three key aspects to this. First, it is important to recognise that although London is of course the largest global financial centre in Europe, it is far from the only one. The contributions of the international financial centres in Amsterdam, Dublin, Frankfurt, Madrid, Milan, Luxembourg, Paris, and other locations in the EU are also of tremendous importance to the economic and social well-being of Europe as a whole. Second, investment returns and job opportunities in the international financial centres of Europe are not taken up only by citizens of the state within which the centre is to be found. Europeans gain returns on their investments in international financial centres across the continent and travel across it to work in centres beyond their own state. Third, the benefits of the business activities carried out in specific international financial centres are not accrued only by that state. The activities of London's financial centre, for example, benefit car companies in Sweden, pharmaceuticals manufacturers in France, clothes manufacturers in Italy, agribusinesses in Poland, and so on.
- 1.9 These wider economic benefits are particularly important to recognise given the crisis of confidence in European competitiveness, exacerbated recently by the slow rates of recovery in Europe from the financial crisis relative to the rapid return to strong growth in emerging economies. Zhu Min, special advisor to the International Monetary Fund (IMF), coined the phrase "three-speed" recovery in the opening debate of the World Economic Forum in Davos 2011. This involves emerging economies growing at more than six per cent in 2011, the US by three per cent and Europe by less than two per cent. The challenge facing Europe has been underlined in a recent study by Citigroup. This forecasts that the share of global economic output accounted for by Western Europe in 2050 will be seven per cent. that This represents a substantial decrease from the current

figure of nineteen per cent. While there are four economies in Western Europe in the largest ten in the world today (France, Germany, Italy and the UK), Citigroup expect this to have dropped to one by 2050 (the UK) and even this is in part due to the forecast's currency assumptions. *The Wall Street Journal* said of this study that it "should open Europe's eyes".³

Methodology

- 1.10 This report assesses the value of Europe's international financial centres by evaluating the direct and indirect benefits to European households, businesses (the non-financial corporate sector) and governments from financial services in general and the international financial service centres in particular.
- 1.11 We begin this analysis by providing in the next chapter an overview of the benefits of financial services. In subsequent chapters we explore these benefits in more detail and quantify their benefits to households, businesses and government.
- 1.12 As part of this study, we conducted a number of case studies in the following sectors:
- Three in each of:
- Retail
 - Biotechnology/pharmaceuticals
 - Car manufacturing
- Two in:
- Agribusiness
- One in each of:
- Energy
 - Green manufacturing
- 1.13 We draw upon these case studies throughout our report, in particular during chapter four, which looks at the benefits to Europe's businesses. By focusing upon particular firms within these sectors we are able to explore in specific cases the ways in which international financial centres have enabled them to grow and to serve their customers. Through cross-border linkages between international financial centres and sectors crucial to the economic and social well-being of Europe the many roles of international financial centres in maintaining and enhancing standards of living in Europe are illustrated. The firms upon which we have conducted case studies are described briefly below.

³ *The Wall Street Journal*, Friday – Sunday, February 25 – 27 2011

Table 1.1: List of case studies

Company	Sector	Country	Description
Deinove	Biotechnology	France	Green technology company specialising in the development and commercial exploitation of high-performance processes for production of biofuels and other compounds of industrial or pharmaceutical value.
GlaxoSmithKline	Pharmaceuticals	United Kingdom	Third largest pharmaceutical, biologics, vaccines and consumer healthcare company by revenue in the world.
UCB	Biopharmaceuticals	Belgium	Biopharmaceutical manufacturer founded in 1928 with headquarters in Brussels.
Daimler	Car manufacturing	Germany	Daimler is an automotive company founded in 1886 with headquarters in Stuttgart.
Volvo	Car manufacturing	Sweden	Volvo is a commercial vehicles company founded in 1927 with headquarters in Gothenburg.
Renault	Car manufacturing	France	Automotive manufacturing company founded in 1899 as Société Renault Frères.
Ahold	Retail	Netherlands	International group of supermarkets based in the United States and Europe with a presence in the Czech Republic, Slovakia and the Netherlands.
Benetton	Retail	Italy	Fashion apparel company with headquarters near Venice.
Unilever	Retail	UK-Netherlands	Multinational corporation that owns a significant number consumer product brands in foods, home care and personal care.
KTG Agrar	Agribusiness	Germany	One of the leading producers of agricultural products in Europe cultivating more than 30,000 hectares in Germany and Lithuania
ZT Kruszwica	Agribusiness	Poland	Largest processor of oil seeds and manufacturer of vegetable fats in Poland and one of the largest in Central Europe.
EDF	Energy	France	Major energy company founded in 1946 with headquarters in Paris.
Iberdrola	Green manufacturing	Spain	Global leader in wind power and a major international electricity group.

International Financial Centres: Overview

Linkages to leading international financial centres

1.14 We link the benefits experienced by the businesses covered by our case studies, as well as other businesses, households and governments, not simply to the financial sector but to a number of important international financial centres in Europe. We focus upon Amsterdam, Dublin, Frankfurt, London, Luxembourg, Madrid, Milan, and Paris. Below we provide an overview of the strengths and specialisms of each.

Amsterdam

1.15 The Netherlands has one of the most mature pension industry in the EU (the total pension capital in The Netherlands is €746 billion, ranked second in absolute terms in Europe), with well-developed pension administration, asset liability management, fiduciary management and other areas concerning an aging population. In addition to pension management, the Dutch financial services industry, which is centred in Amsterdam, has a strong reputation in efficient payment systems (financial logistics) and securities trading.⁴

Dublin

1.16 While Dublin has a diverse financial services centre, incorporating banking, insurance, and trading venues, as well as more niche segments such as aircraft leasing, payments and money transmission and corporate treasury,⁵ it is perhaps in fund management that Dublin has most earned its global reputation in financial services. Approximately €689 billion of alternative investment funds are under management in Ireland, constituting more than 41 per cent of the worldwide total. More than 358 fund promoters choose Ireland as the location for the administration and/or domiciliation of their funds, the majority originating in the UK (46 per cent) and the USA (39 per cent).

Frankfurt

1.17 Frankfurt's largest financial services subsector is banking, with approximately €2,951 billion in banking assets and 74,000 employees. At the end of the third quarter of 2010 loans from Frankfurt banks to domestic non-banks were €343.6 billion.⁶ Frankfurt attracts a significant proportion of foreign banks. At the end of March 2010 157 of the 223 (71 per cent) banks operating in Frankfurt were foreign, and a further 40 banks were represented through offices.⁷

⁴ Holland Financial Centre 2010

⁵ Corporate treasury consists of standalone subsidiaries of large non-financial services organisations (e.g. pharmaceutical companies) which conduct in-house treasury function for their parent company.

⁶ Frankfurt Main Finance (2010) <http://www.frankfurt-main-finance.com/en/frankfurt/facts-and-figures/index.php>

⁷ Helaba Research (2010), 'Financial Centre Frankfurt: A magnet for foreign banks'

London

1.18 London is Europe's leading financial centre. In the city the insurance sector employs 50,000 and in 2009 17 per cent of all global trading in equities took place, a higher proportion than anywhere except New York. UK fund managers (predominately based in London) managed portfolios worth 11 per cent of the global total, again second only to the US. In addition to financial derivatives trading, commodity trading forms an important part of the London financial sector, and London hosts three major derivatives exchanges that account for around 15 per cent of global trade in commodities: NYSE Liffe, Europe's biggest exchange for 'soft commodities'⁸; London metal Exchange, the leading global exchange for non-ferrous metals; and ICE Futures Europe, the biggest electronic regulated exchange for energy products.⁹ London is also a leading global centre in carbon markets¹⁰ and a leading source of capital and expertise for marine insurance, ship-chartering, shipping finance, ship classification, legal and accounting services and dispute resolution.

Luxembourg

1.19 Of the 152 banks located in Luxembourg, 15 per cent are from Luxembourg and Belgium, with the rest from countries such as Germany (45 per cent), France (15 per cent), Italy (11 per cent) and the UK (8 per cent).¹¹ Luxembourg is the largest centre in Europe for investment funds and second in the world after the United States. At the end of 2009 the net assets of nationally domiciled investment funds (both UCITS and non-UCITS) were €1,841billion.¹² Fund promoters from over 40 countries have domiciled funds in Luxembourg, contributing to the development of a centre of excellence for fund administration and custody and transfer agent activities.

Madrid

1.20 According to a ranking calculated by Deloitte for the importance of financial institutions (based on variables such as the presence of foreign banks, the rating of the banking system, the total assets of banks and bank lending to the private sector), Madrid is ranked fourth after Hong Kong, New York and Singapore. Madrid ranks fourth in European equities market capitalisation, and Madrid's Stock Exchange is second in terms of number of listed companies, just behind New York Stock Exchange (NYSE plus NASDAQ).¹³ The Bolsas y Mercados Españoles (BME) operates all stock markets in Spain and is also headquartered in Madrid. At the end of 2009 the BME was the third most important equity

⁸ Although a large proportion of agricultural futures and options are traded on Liffe Paris

⁹ TheCityUK 'Financial Markets in the UK', November 2010

¹⁰ Carbon markets involve the buying and selling of emission allowances and reduction credits. They have a crucial role in enabling countries and companies to reduce carbon emissions and meet their compliance objectives with respect to achieving greenhouse gas emission (GHG) targets under the Kyoto Protocol.

¹¹ Luxembourg Bankers Association (2010) 'The Luxembourg Experience' Joint EBF/ABA Conference

¹² European Fund and Asset Management Association Fact book 2010

¹³ Deloitte (2010), 'Madrid Financial Centre: One of the best options in the current international context' Madrid Centro Financiero

Introduction

market in the world in terms of market capitalisation (€904 million) and fourth in terms of turnover (€1,149 million).¹⁴ Madrid also has key links with Latin America, with Spanish institutions improving their presence in South American countries, and Banco Santander being ranked the best bank and best Project Finance Bank in Latin America by *The Banker* magazine in 2009.

Milan

- 1.21 The most important subsector in the Milan financial sector is banking. The Italian financial system as a whole is centred on the banking sector which holds approximately 60 per cent of total unconsolidated financial assets. The Italian corporate sector's debt consists overwhelmingly of short-term bank loans, more so than other European countries.¹⁵ Milan is home to the majority of Italian banks (198 institutions) and more than 40 international banks. The city also hosts the Italian Stock Exchange which lists over 225 companies and transacts over 90 per cent of all company capitalisation in Italy.¹⁶

Paris

- 1.22 Paris accounted for 25 per cent of France's premium income for life and non-life insurance in 2006. Paris also has a strong corporate banking sector and asset management sector, with the latter growing by 75 per cent in terms of the number of asset management companies since 1997.¹⁷ A leading contributor to the Paris financial sector is the Paris Stock Exchange — NYSE Euronext. NYSE Euronext Liffe transactions in Paris represented 95 per cent of agricultural futures transactions and 99.9 per cent of agricultural options transactions in 2009.¹⁸

Specialisms

- 1.23 Following the discussion above the table below summarises the specialisms of the international financial centres within Europe that are the main focuses of this report.

¹⁴ Deloitte (2010), 'Madrid Financial Centre: One of the best options in the current international context' Madrid Centro Financiero

¹⁵ OECD Economic Surveys: Italy, June 2009

¹⁶ EIU/EA EU Non-Capital Competitive Cities Study <http://www.gregclark.net/papers/milangregclark.pdf>

¹⁷ Economic Development Agency, Paris Region 2008 <http://www.paris-region.com/index.jsp?LANGUE=1>

¹⁸ Futures and Options Intelligence cited in PricewaterhouseCoopers (2010) 'Data gathering and analysis in the context of the MiFID Review', prepared for the European Commission. Data relate to transactions and not turnover, which is more evenly split between London and Paris.

Table 1.2: Areas of specialism and importance in International Financial Centres

City	Specialisms
Amsterdam	Pension management; financial logistics
Dublin	Fund management and administration; aircraft leasing
Frankfurt	International banking, insurance; derivatives exchanges; fund management
London	International banking; fund management; trading in securities, derivatives and commodities; private equity and hedge fund management; carbon markets; maritime finance
Luxembourg	International banking; fund management
Madrid	Stock exchange; links with Latin America
Milan	Banking
Paris	Insurance; Commodity exchanges

Source: Europe Economics analysis

Structure of Later Sections

- 1.24 In Sections 2 to 4 we shall provide an overview of the key social benefits of financial services to:
- (a) households;
 - (b) firms; and
 - (c) government.
- 1.25 Whilst this section will consider such benefits at a high theoretical level, later sections will explore them in more detail and seek to quantify them.
- 1.26 For each of these groups of stakeholders (households, firms, government), we shall explore the role of the financial sector in terms of:
- (a) direct benefits;
 - (b) savings and investments;
 - (c) loans and other capital-raising;
 - (d) cash-flow management; and
 - (e) insurance and risk-management.
- 1.27 However, before we do that, we shall complete this Introduction by briefly exploring an overarching benefit of the financial sector, non-specific to households, firms or

government. This is probably the greatest social contribution of the sector: the payments system and hence money itself.

The Payments System and Money

- 1.28 By the payments system we mean the complex and inter-related web whereby workers receive their wages, households pay bills to firms, firms pay bills to each other, individuals are able to withdraw money from banks and cashpoints, and so on.¹⁹
- 1.29 In a modern economy, the vast majority of monetary payments do not take place with physical notes and coin but, rather, via the financial system. For example, as at January 2011 the total stock of notes and coin in the UK was £58bn (including the notes and coin held in the financial sector and not used in transactions), whilst the total stock of broad money was £2,170bn (or £1,554bn excluding intermediate OFCs).²⁰ Therefore more than 97 per cent of all money in the economy is not notes and coin.²¹
- 1.30 Thus in a modern economy, it is the financial sector that delivers virtually all of the benefits of money itself. The use of money greatly facilitates innovation and productive activity by reducing transaction costs involved in trade. Money has three key functions. Its most obvious is as a *medium of exchange*. Under a barter economy, to engage in trade we would have to identify a double coincidence of wants — for example, if you have the skill to write an economics textbook and want a pork roast for dinner, you would have to find someone who had a spare pork roast but wanted a new economics textbook. To identify such double coincidences of wants takes a great deal of time, if it can be achieved at all. Where it cannot be achieved, either we must forego trade altogether or engage in complicated and costly "barter chains". By using money you can convert your textbook writing into dinner and much else besides, without needing your chef to have a passion for monetary theory. This enables much additional trade and specialisation, and frees us to spend our time in productive activities.
- 1.31 A second important function of money is that it serves as a *store of value*. If you had to swap your textbook directly for dinner, you would have to eat that dinner straight away before it went cold. The use of money which stores value enables you to swap goods or services you give up today for goods or services you get later. Money within the financial

¹⁹ Key components of the payments system include the Clearing House Automated Payments System (CHAPS), BACS (originally an acronym for Bankers Automated Clearing Services), Faster Payments Service (FPS), TARGET2 (Trans-European Automated Real-time Gross Settlement Express Transfer System 2), VocaLink.

²⁰ Figures are for the seasonally adjusted series here:
<http://www.bankofengland.co.uk/statistics/fnc/2011/Feb/Final%20NC.pdf>
and M4 excluding OFCs is here:
<http://www.bankofengland.co.uk/statistics/fm4/2011/jan/Sectoral%20breakdown%20of%20aggregate%20M4%20and%20M4%20ending.pdf>

M4 was obtained from the interactive database here:
<http://www.bankofengland.co.uk/mfsd/iadb/fromshowcolumns.asp?Travel=NlxAZx1xSCx&ShadowPage=1&FromCategoryList=Yes&CategID=6&NewMeaningId=LM4L%2CLM4&HighlightCatValueDisplay=M4&ActualResNumPerPage=21X41X61X81X101X121X141X161X&TotalNumResults=167&XNotes=Y&C=61C&C=U8&XNotes2=Y&ShowData.x=28&ShowData.y=10>

²¹ $58 \div 2170 = 2.7\%$.

sector may serve as a superior store of value — for example, interest might be paid on money saved.

- 1.32 The third, and probably most valuable function of money, is as a *unit of account*. This means that money is used as a common yardstick to compare the value of one good or activity with another. For example, if you had bartered one pork roast for a box of apples and five haircuts for a textbook, you would not know how many apples a textbook was worth. Money provides a common measure which enables you to translate the value of apples into textbooks. This is extremely valuable because it enables money prices in an economy to send all kinds of signals and pass all kinds of information around an economy. If the money price of apples rises and that of textbooks stays the same, that may mean that you would prefer to stop writing textbooks and start growing apples. The unit of account function enables a price mechanism to guide economic activity to where it is most valuable.
- 1.33 It is sometimes suggested that orthodox economics teaches that the management of the stock of money (i.e. monetary policy) can have no effect on the real value of output or other real variables. But this is not true. If the stock of money is managed badly, then money cannot serve its functions efficiently. Most famously if the stock of money is mismanaged so that it is not kept at stable or predictable levels, there will be volatile changes in the general price level (inflation or deflation) which undermine the store of value function of money and hence people's ability to plan for the future. Probably even more importantly than this, inappropriate changes in the general price level undermine the informational content of prices (the unit of account function), and hence undermine the ability of prices to guide economic behaviour.
- 1.34 The use of money greatly enhances economic efficiency. It enables us to spend time inventing things or building things or having fun with our friends instead of searching for someone who has a pork roast and wants a textbook, or trying to find some way to store our pork roast before it goes cold, or checking out all the possible transactions we don't engage in to see whether any of them is more valuable than what we currently do. The mismanagement of the money stock will reduce real output and real growth. Likewise, even small improvements in the way we manage money can lead to greater growth and output in the future.

2 BENEFITS TO HOUSEHOLDS

Direct Benefits

- 2.1 The direct benefits of the financial sector to households are the employment opportunities it creates and the wages earned and dividends and other capital income households receive on their investments in the sector (e.g. by owning shares in banks, directly or indirectly (e.g. via pension funds)).
- 2.2 Of course, in addition to the employment opportunities created working for banks, insurance companies, intermediaries, hedge funds and so on themselves, there are also jobs created working for related companies such as law firms, accountants, IT suppliers, sandwich suppliers, coffee suppliers, and so on that financial sector companies use.

Gross value added (GVA) by financial services in the eight cities

- 2.3 The GVA of the financial services industry improves the welfare of households. The tables below summarise the GVA of the financial sectors of the eight cities and of GDP in four city areas.

Table 2.1: Economic contribution of financial services in eight cities²²

City	Gross value added (€bn)	Proportion of country's financial sector GVA	Proportion of city's total GVA
Amsterdam	€ 7.73	25%	20%
Dublin	€ 11.40	80%	N/A
Frankfurt	N/A	N/A	N/A
London	€ 62.54	45%	20%
Luxembourg	€ 9.00	100%	32%
Madrid	€ 12.56	19%	10%
Milan	€ 22.10	30%	N/A
Paris	€ 45.00	23%	15%

Source: Europe Economics data file – Data for Frankfurt not available

- 2.4 The relative importance of the financial sector in the cities to the financial sector in the country as a whole varies significantly. Luxembourg is an extreme case in this respect, reflecting the significance of the city in the country's overall economy. Financial services in Ireland are also highly concentrated upon Dublin. Paris contributes just over 23 per cent of the country's financial sector GVA (using the broad definition) but accounts for 90 per

²² As the data have been taken from a variety of sources there will be some measurement discrepancies. Data refer to 2008 and 2009.

cent of its banking.²³ The relative importance of financial services to the rest of the economy within each city also varies, but not as widely.

- 2.5 Wholesale finance makes an important contribution towards the value added by financial services in the eight cities. The EU wholesale financial sector was worth €219bn in 2008, with five EU member states (France, Germany, the Netherlands, Spain and the UK) accounting for 80 per cent of this. The vast majority of the contributions of these member states are made in members of the eight cities within these member states.²⁴

Finance and economic growth

- 2.6 Households benefit from the additional economic growth that finance generates. Academic research confirms that when financial sectors are more developed, economies grow faster, and that the greater development of the finance sector is a key *cause* of that faster growth. As international financial centres are at the vanguard of innovation within the financial sector, they are vital to generating such faster growth.

Box 1: Academic literature on the impact of financial development on economic growth

Levine (2005)²⁵ concludes that, while subject to important qualifications, most of the empirical evidence — independent of methodology, samples, econometric technique, variables used to proxy for the level of financial development, etc. — finds a positive correlation between the level of financial development and economic growth and that this cannot be simply because faster economic growth results in greater financial development (what economists call “reverse causality”).

In particular, Levine (2005) notes that there is robust empirical support for the idea that a more developed financial system influences economic growth by alleviating the financial constraints of firms. On this issue, the seminal paper in the academic literature is that of Rajan and Zingales (1998)²⁶, which found that the level of financial development of a country (measured by total capitalisation as a share of GDP or accounting standards) fosters growth particularly in industries that tend to rely heavily on external funds in order to finance their activity.

The Rajan and Zingales' results were later backed by many studies, including Guiso et al. (2004a), Beck et al. (2008) and Levchenko et al. (2009). Guiso et al. (2004a) found that if the EU had a level of financial development similar to that of the US its annual average growth rate could be increased by 0.15 percentage points. Beck et al. (2008)²⁷ found that a higher level of financial development tends to disproportionately increase growth in industries that are “naturally”

²³ Paris Region: www.paris-region.com

²⁴ London Economics, *The importance of wholesale financial services to the EU economy*, Report to the City of London

²⁵ Levine, R. (2005), "Finance and Growth: Theory and Evidence", in Aghion and Durlauf (eds), *Handbook of Economic Growth*, Elsevier.

²⁶ Rajan R. and Zingales, L. (1998), "Financial Dependence and Growth", *American Economic Review*, 88, 559-586.

²⁷ Beck T., Demirguc-Kunt A., Laeven L. and Levine R. (2008), "Finance, Firm size and Growth", in *Journal of Money, Credit and Banking*, 50, 7, pp.1379-1405.

composed of many small firms, because such industries tend to be subject to greater credit constraints. Levchenko et al. (2009)²⁸ found that both growth and volatility are increased by financial market liberalisation, whilst De Nicolò Juvenal (2010) found, using data for a large number of advanced and emerging economies observed over the period 1985-2009, that financial integration is associated to higher growth, *lower* volatility and higher liquidity of equity markets.

Another important paper not in the tradition of Rajan and Zingales (1998) is that of Guiso et al. (2004b)²⁹ who found that, in Italy, the regional relative level of financial development (captured by the likelihood that an individual had been denied access to credit) tends to increase competition, growth and the probability an individual starts a new business.

Is additional financial development as valuable once a country is already financially developed?

2.7 Some economists and policymakers, while not denying that finance matters for growth, have argued that its effects are highly “non-linear”. Specifically, they claim that growth tends to be enhanced much more by an increase in financial development when the country is poorer than when it is richer. Indeed, under this line of argument, once economies achieve high levels of broader economic development, further financial development would have little or no growth-enhancing effects.

Box 2: Academic literature on “non-linear effects”

A theoretical model of non-linear effects of financial development on growth appears in Aghion et al. (2005).³⁰ That paper’s analysis is motivated by the lack of convergence in per capita income and productivity between the poorest and the richest countries. In principle, one might expect that, in poor countries, innovation should be easier to achieve given that it mainly consists of imitation of already developed and well established technologies. However, in order to imitate, firms in less developed countries need to invest in R&D to be able to master the new technologies originally discovered in countries at the technology frontier. In turn, because the internal funds generated within the firm are usually limited by the firm’s productivity, firms might have to use external finance to fund their R&D projects.

The paper regards this as creating an “agency” problem because the entrepreneur could disguise the fruits of innovation and restrict returns to capital-providers (a form of fraud, at least in the economists’ sense, even if not in the legal sense), and this effect would be stronger the less advanced is the financial system (e.g. because monitoring of the use of loans is less effective).

²⁸ Levchenko A., Rancière R. and Thoenig M. (2009), "Growth and Risk at the Industry Level: the real Effects of Financial Liberalization", *Journal of Development Economics*, 89, 2, pp. 210-222.

²⁹ Guiso L., Sapienza P. and Zingales L. (2004), "Does local Financial Development Matter?", *The Quarterly Journal of Economics*, 119, 3, pp. 929-969.

³⁰ Aghion P., Howitt P. and Mayer-Foulkes, D. (2005), "The Effect of Financial Development on Convergence: Theory and Evidence", *The Quarterly Journal of Economics*, 120, 1, pp. 173-222.

As a result, firms in less rich countries with less developed financial systems might find it harder to fund the innovations necessary to imitate frontier technologies, and so might continue to experience lower growth rates. However, the more advanced the financial system, the less important these bad effects will be. One implication is that, in countries with very well developed financial systems (where there is little or no remaining opportunity to “defraud” capital-providers), further increases in financial development will have little impact on their long run value of output.

Aghion et al.’s empirical results backed their theoretical model, in that in countries with a high level of financial development (all EU15 countries bar Belgium) an increase in private credit of 28 percentage points increased long run output by only 1 per cent.

Recent empirical evidence lends, however, only partially supports arguments for highly non-linear effects of financial development. For example, Brezigar Masten et al. (2008)³¹ found a much larger effect of financial development on growth in the case of EU-transition countries, but they do not find robust evidence that there is no effect for the EU richer countries. Similarly, Huang and Lin (2009)³² found a stronger effect of financial development for low income countries but they reject the hypothesis that the effect is zero for high income countries. (Interestingly, they also found that in high income countries financial development would affect growth by fostering capital accumulation, while in low income countries by both favoring capital accumulation and productivity growth.)

2.8 Our interpretation of this literature is that the marginal benefits of enhanced financial development are likely to be greater for less financially-developed economies, but that even in highly financially developed economies increasing financial development is likely to promote greater prosperity to a non-trivial extent.³³

Quantitative impacts

2.9 In the Appendix, we use a standard model to estimate the impacts of economic development on growth, considering how much the increase in economic development over the 2000s (which in some parts of Europe was quite significant) has promoted growth, and how much scope there is for some member states to enhance their growth rates by catching up to the level of financial development of the most advanced states.

2.10 The table below quantifies how much financial development increased over the 2000s in selected member states.

³¹ Brezigar Masten A., Coricelli F. and Masten I. (2008), "Non-linear Growth Effects of Financial Development: Does Financial Integration Matter?", *Journal of International Money and Finance*, 27, pp. 295-313.

³² Huang H. and Lin S. (2009), "Non Linear Finance Growth Nexus. A Threshold with Instrumental Variable Approach", *Economics of Transition*, 17, 3, pp. 439-466.

³³ In later sections, we shall model the potential size of the financial sector in a well-functioning developed economy.

Table 2.2: How financial development increased over the 2000s (selected member states)

	Index of financial development in 2000	Index of financial development in 20008	Change: 2000-2008
Germany	1.15	1.02	-11.3% ³⁴
Greece	0.42	0.92	119%
Spain	0.65	1.72	165%
France	0.81	1.06	30.9%
Italy	0.71	1.03	45.1%
Luxembourg	0.96	2.11	120%
Netherlands	1.25	1.93	54.4%
Poland	0.25	0.41	64.0%
Portugal	1.18	1.72	45.8%
UK	1.21	1.89	56.2%

2.11 Next we report our results for how much this increase in financial development affects growth. The first column considers how much growth was increased by the increase in financial development during this period. The second column considers how much higher growth is in these member states on account of their having higher financial development than Poland (the least developed in our sample). The third column considers how much higher or lower growth is in these member states on account of their having different degrees of financial development from the UK.

³⁴ Germany experienced a significant retrenchment over the 1990s and 2000s following reunification. Its debt contracted, relative to GDP, over the period covered here and in absolute terms from 2004 on. This is covered in the Europe Economics paper for the European Parliament on Household Indebtedness in the EU (2010). Limited progress on German financial development, particularly its low use of equity financing, was a well-known policy-maker concern in the late 1990s through to the mid 2000s — for example see this report of the Lamfalussy “Committee of Wise Men”: http://www.maec.es/SiteCollectionDocuments/Espana%20y%20la%20Union%20Europea/PoliticasyComunitarias/mercado_interior/InformeLamfalussyPDF288Kb.pdf

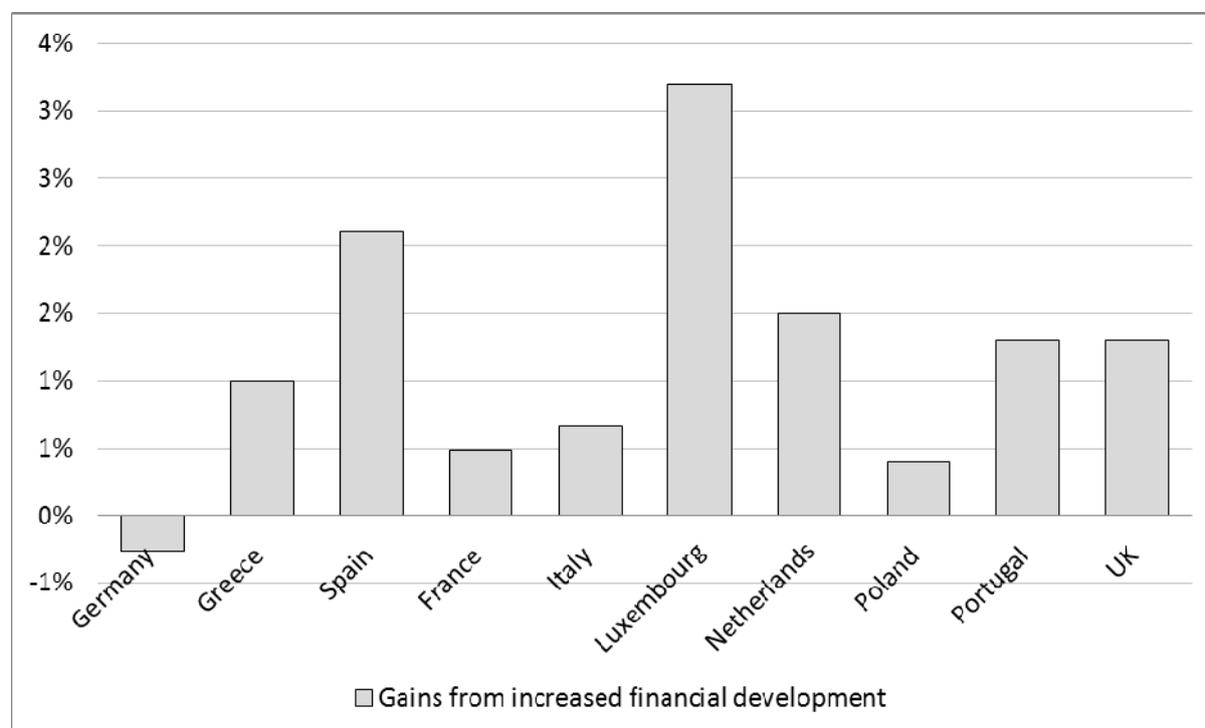
Table 2.3: How differences in financial development increase/decrease growth (selected EU member states)

Gains from increased financial development		Gains relative to Poland		Gains (Losses) relative to UK	
Germany	- 0.26% ³⁵	Germany	1.2%	Germany	-1.7%
Greece	1.0%	Greece	1.1%	Greece	-2.0%
Spain	2.1%	Spain	2.6%	Spain	-0.3%
France	0.49%	France	1.3%	France	-1.6%
Italy	0.66%	Italy	1.3%	Italy	-1.8%
Luxembourg	3.2%	Luxembourg	4.7%	Luxembourg	+0.6%
Netherlands	1.5%	Netherlands	3.3%	Netherlands	+0.1%
Poland	0.4%	Poland	0	Poland	-3.6%
Portugal	1.3%	Portugal	3.1%	Portugal	-0.4%
UK	1.3%	UK	2.9%	UK	0

2.12 The gains from increased financial development are also presented in the following figure. German retrenchment following reunification explains their being the anomaly in the figure below.

³⁵ Again we see the impact of the post-reunification period, causing Germany to be an exceptional and negative case.

Figure 2.1: Increase in growth over 2000s as result of increased financial development



2.13 For example, we note that France experienced growth of nearly half a per cent over the 2000s because of the increase in its financial development, and 1.3 per cent more than if it had only been as developed as Poland, but 1.6 per cent less than if it had achieved the same level of financial development as the UK.

Employment in financial services

2.14 International financial centres make a significant contribution to employment in the EU. The table below presents the employment in financial services in each of the cities on which employment information was available.

Table 2.4: Employment in financial services in European international financial centres

City	Employment in Financial Services
Amsterdam	54,500
Dublin	19,954
Frankfurt	75,900
London	352,000
Luxembourg	47,714
Paris	270,500

Source: *Europe Economics* – Data unavailable for Madrid and Milan

International opportunities for employment in financial services

2.15 The international financial centres considered in this report provide households with international opportunities for employment and career development.³⁶ The wholesale finance sector alone contributed 1.36 million jobs across the EU in 2008, with almost half of these in France, Germany and the UK.³⁷

Dublin

2.16 Multi-nationals employ approximately 240,000 people across all sectors of the Irish economy. The International Financial Services Centre (IFSC) in Dublin alone accounts for ten per cent of that figure, employing an estimated 24,000 people (2009 figures). Of these, 10,121 people are employed by the 58 international banks operating in Dublin.³⁸

Frankfurt

2.17 With around 200 foreign headquarters and representative offices, Frankfurt is home to banks from forty different nations. Frankfurt's international community comprises 24 per cent of its population. The presence of international bankers has fostered demand for a variety of additional services. For example, five new, private English language schools have opened in the last 10 years, as well as a public bilingual English-German Gymnasium.

London

2.18 In 2008, 13.7 per cent of migrants in the UK workforce worked in financial intermediation. Dawson et al (2006) found that 22 per cent of graduates recruited into London's financial sector are from overseas, and a high proportion of these are from France and Germany.

2.19 Unlike other sectors, the number of migrants granted work permits and first permissions in the UK financial sector has remained relatively stable between 1995 and 2007. In absolute terms, the total number of permits/permissions granted in the UK tripled from 3,200 in 1995 to 9,700 in 2007. However, in percentage terms, the figures have remained relatively constant. In 1995, 13.2 per cent of all permits/permissions granted in the UK were granted to financial services, compared to 11 per cent in 2007 (MAC, 2008).³⁹

³⁶ Data on Amsterdam was not available — we substitute Dublin in this case.

³⁷ http://217.154.230.218/NR/rdonlyres/DF649F73-2F5D-4C3E-AA24-E491A280A9B5/0/BC_RS_ImportanceofWholesaleFStoEUEconomy09.pdf

³⁸ Source: *Financial Services Ireland*, 2010

³⁹ This is compared to Computer services, whose number of permits rose from 1,800 in 1995 to 23,700 in 2007, or from 7.6 per cent to 26.9 per cent.

Luxembourg

2.20 The banking sector alone accounts for nearly 60 per cent of the Luxembourg financial centre's direct and indirect workforce and directly employed over 27,000 people in June 2008. The proportion of foreign staff in the banks of Luxembourg increased from 55 per cent in 1995 to 75 per cent in September 2008.

Table 2.5: Employment in Luxembourg banks — September 2010

Luxembourgers	6,776
Residents/Non-Residents	19,442
Total	26,218

Source: ABBL (2010)

2.21 Overall, 44 per cent of the population was born outside the country. 42 per cent of the people employed within Luxembourg commute daily from surrounding countries — France, Belgium, Germany and the Netherlands. Cross-border commuting has contributed to the rise of a functionally-integrated cross-border metropolitan area of around 800,000 inhabitants.

Table 2.6: Cross-border employees in the financial sector — March 2010

German Residents	3,926
Belgian Residents	4,322
French Residents	6,235
Cross-Border Employees	14,483
Total (including residents)	29,475

Source: ABBL (2010)

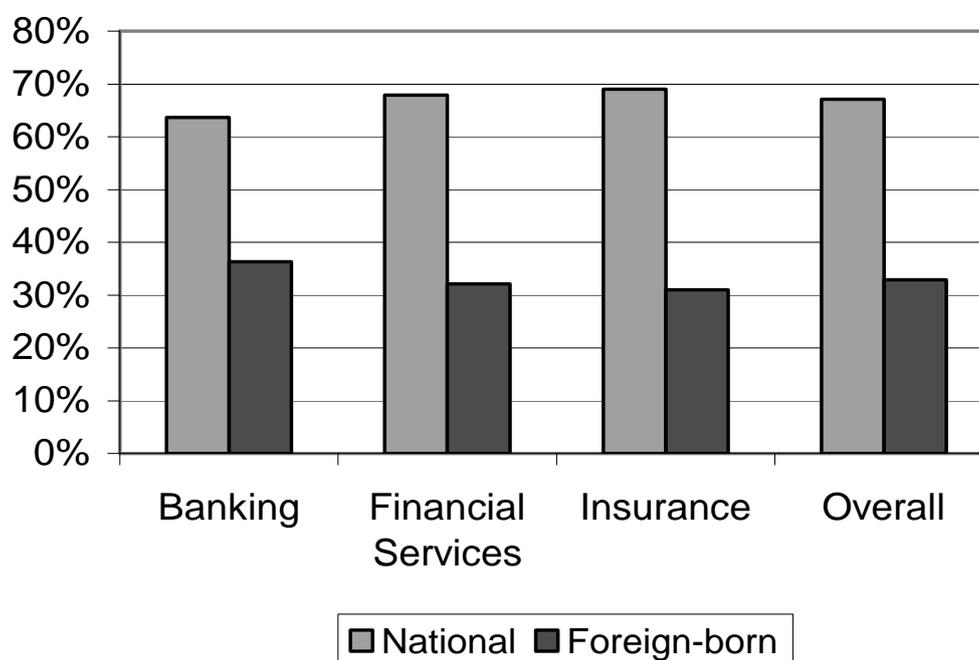
Madrid

2.22 In 2009, foreign citizens accounted for 17.5 per cent of Madrid's total population (roughly 575,000 people), compared to only 2.8 per cent in 1999. Finance-related courses (and in collaboration with finance sector firms, universities and other institutions in Madrid have established a large number of agreements with counterparts in other countries, particularly Latin America, including the IberoAmerican Postgraduate University Association (AUIP), the Carolina Foundation and Banco Santander (one of Spain's largest banks). These agreements contributed towards the significant internationalisation of Madrid's workforce that the past ten years have witnessed. This internationalisation has been a more prominent feature in the financial sector than in others. Sectors that are more domestically focused than finance have less demand for workers with international skills and experiences. Madrid's financial sector has, therefore, increasingly engaged in a global talent search as it has advanced in scale and complexity.

Global market for talent

2.23 Bloomberg divides the international finance sector into four categories: banks, financial services, insurance, and real estate — we have focused here upon the first three of these (noting that the real estate category does not include mortgages).⁴⁰ In each of the eight cities we used Bloomberg to identify the three largest firms by turnover in each of these three categories. Where possible we identified the nationality of the CEO of these firms and where this was not possible we identified the nationality of the chairman.

Figure 2.2: Nationalities of CEO/chairmen in our eight cities



2.24 For example, in London we identified CEOs/chairmen within our sample of Portuguese, German, and American citizenship in London’s banking sector. South Africans and French chairmen were also present in our samples on the insurance and financial services categories in London. The cosmopolitan nature of the upper echelons of the financial sector in London, Europe’s leading financial centre, reflects the importance of sourcing talent from all over the globe to success at the highest levels.

2.25 Free movement of labour within the European Union opens up the opportunity for Europeans to work across a range of international financial centres, as the figures above illustrate, and, in particular, they create the opportunity to work in London and, hence, pick

⁴⁰ Bloomberg uses the Industry Classification Benchmark (ICB) developed by the FTSE and Dow Jones Indexes. The principal aim of the ICB is to categorize individual companies into subsectors based primarily on each company’s major source of revenue.

up the kinds of skills and experiences available when working in one of the world's leading financial centres. If it were not relatively easier for Europeans to gain these experiences in London, then the best European talents would be more likely to seek them out in New York, Hong Kong or Singapore — globally leading financial centres beyond the borders of Europe.

Savings and Investments

- 2.26 As well as working in the financial sector, households are users of its services. Perhaps the most obvious way they use the sector is for savings and investments. Households invest money by (amongst other ways) depositing it in banks (loaning it to the bank in exchange for interest); buying retail investment products (such as pensions or unit trusts); buying shares (on stock markets, alternative investment markets, or even in the form of private equity).
- 2.27 It is useful, analytically, to distinguish between “saving” (understood as simply accumulating funds, without risk) and “investment” (understood as placing capital at some risk in order to secure a return), even though in practice there is no risk-free means of saving (and hence no pure saving) and even though much household investment has a savings component or motive to it.
- 2.28 The purest forms of saving available to most households are bank deposits (though even these are formally loans to the bank, rather than pure savings vehicles). “Demand” deposits pay relatively low interest but involve the bank promising to supply the depositor with the amounts deposited on demand.⁴¹ “Time” deposits are less liquid but tend to earn higher rates of interest. They are less liquid because savers have to commit to have their money deposited with the bank for a set period of time. Higher interest rates tend to be offered to compensate for this reduced liquidity.
- 2.29 Saving is very valuable to households and to wider society for a number of reasons:
- (a) people save up to purchase things that they do not have sufficient own funds to purchase immediately — especially for relatively large items such as weddings, holidays, a deposit for a house, education, or household goods such as new fridges or televisions, but also for known high-expense periods such as Christmas;
 - (b) by saving, households can create a buffer to protect themselves in difficult times, such as if a job is lost, there is a period of ill-health or injury, or there is some sudden unexpected expense (such as a baby);
 - (c) people save up to support themselves after retirement.

⁴¹ It is normal to call this a “withdrawal”, even though it is really the bank repaying a loan it received from the depositor — the depositor does not technically own anything to be “withdrawn” (e.g. depositors do not technically own their deposits).

- 2.30 Of course, households do not *need* to use the financial sector for such savings. They could, for example, simply store the money at home (say, in a safe) or purchase jewels or precious metals. However, there are many reasons why it is desirable for the considerable bulk of household and business funds to circulate within the financial system rather than being stored at home. Fairly straightforward reasons for this include:
- (a) Large quantities of cash (or, even, precious metals or jewels) kept in homes represent a temptation to crime. Funds stored in this way might also be subject to destruction through fires or other accident, creating uncertainty.
 - (b) Large volumes of (and large quantities in) transactions occurring in the form of cash create a temptation to tax evasion or other regulatory evasion as transactions might not be reported. Related to this, there would be a burden on individuals and small businesses to track their transactions, and they might fail to meet their tax or regulatory reporting obligations simply through oversight as well as through malice.
 - (c) Funds simply stored at home are idle, whilst deposits in banks support economic activity by forming the basis for investment loans (see below).
- 2.31 In addition to saving, households also invest. Households benefit from investment by securing a future income stream or monies that can function as income or savings.

A model of the value of “pure savings” under certainty

- 2.32 To consider the value of being able to save versus simply consuming one’s current income, we have developed a very simple model of a representative agent in an economy. The model has the following features (with certainty):
- (a) The agent comes into existence aged 20.⁴²
 - (b) The agent’s salary rises 2 per cent each year from age 21 to age 65.
 - (c) From age 65 on, the agent has a salary equal to the salary she would have received aged 20. (We can interpret this as a state benefit.)
 - (d) The agent dies at the end of her 80th year.
 - (e) The agent has a logarithm utility function. (This is a technical assumption that has the consequence that, ideally, and under certainty, the agent would like to consumption precisely the same amount each period in life.)

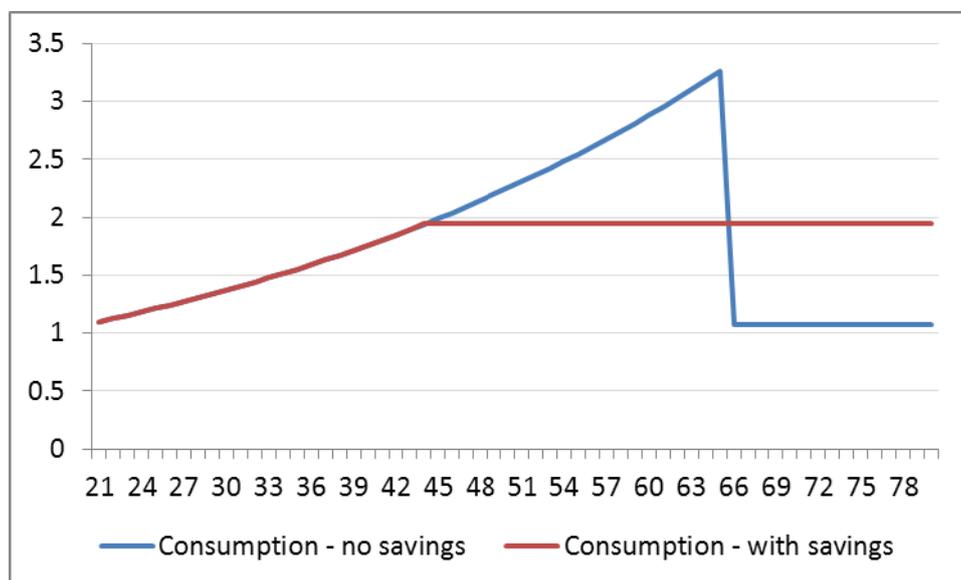
⁴² For technical reasons, though we assign an initial “aged 20” income to the agent, the agent neither earns nor consumes in her 20th year.

- 2.33 Now suppose that the agent could neither borrow nor save. Then every period her consumption would precisely match her income.
- 2.34 If, by contrast, she could save (we exclude the possibility that she can borrow for now — returning to it below), then from age 44, instead of consuming all her income each period, she would consume the same amount, initially saving (so consuming less than her income) and then from age 65 onwards using her savings to raise her consumption.⁴³

Model results

- 2.35 The effect of introducing savings under our model is that in retirement, our agent is able to consume 59 per cent more than in the case where she cannot save. This delivers her additional utility, over the lifetime, equivalent to her having 3.7 per cent higher income every period (including a rise in benefits of the same amount). We observe that this figure is sensitive to the assumed 2 per cent rate of wage growth across the working life. For example, if wages rose only 1.5 per cent per year, then the additional value of being able to save would naturally be lower — equivalent to just 2.1 per cent of additional income. And if wages rose faster at 2.5 per cent per year, then the ability to save would be worth as much as an extra 5.7 per cent of lifetime income.

Figure 2.3: Model results - consumption



- 2.36 Bear in mind that this is a very simple model in which there is certainty (so no call for unplanned borrowing, for example), no investment returns (so no investment motive for

⁴³ Note that we are defining “pure” savings here — no risk is taken, and there is no investment return. Note also that our model is expressed in real terms — there is no inflation. If there were a risk-free asset available to invest in, and people discounted the future at the risk-free rate, then the results would be equivalent to those here.

saving), and in which the elderly automatically receive a base income equivalent to that of a twenty year old. So we are here identifying a “pure savings” effect.

Pensions provision across the EU

- 2.37 The ways in which the financial sector supports pension provision in Europe are as varied as the different pension models applied across the continent. The OECD reports that occupational pension plans are dominant in Western Europe and that these plans are voluntary in the UK and quasi-mandatory (i.e. most workers are enrolled as a result of employment agreements between unions and employers) in the Netherlands.⁴⁴
- 2.38 Two of the five largest pension funds in Europe are Dutch (ABP and Zorg en Welzijn) and one is Spanish (Reserva de la Seguridad Social).⁴⁵ ABP is the pension fund for employers and employees in the service of the Dutch Government and the education sector. It has a capital value of €218bn.⁴⁶ This is invested across a diverse range of fixed income investments (5.5 per cent in government bonds, 16 per cent in corporate bonds, 11.2 per cent in index-linked bonds), equities and alternative investments (35.5 per cent in equities, 13 per cent in real estate and 8.4 per cent in commodities) and other investments (14.1 per cent in hedge funds). ABP invests in shares and convertible bonds via international financial centres across the world; including 127 in Austria and 508 in Belgium, amongst a European total of 32,777.
- 2.39 In the Czech Republic, for example, rather than through occupational pensions, the most common means by which the state pension is supplemented is through a private pension. Almost one in three Czech citizens – 45 per cent of the workforce – has a private pension with a total of €5.3bn under management at the end of 2006.⁴⁷ Such growth contributes towards pension funds being the largest category of fund in the world. In January 2008, *The Economist* reported that Morgan Stanley estimates that pension funds worldwide hold over US\$20 trillion in assets, the largest for any category of investor ahead of mutual funds, insurance companies, currency reserves, sovereign wealth funds, hedge funds, or private equity.⁴⁸
- 2.40 The ageing of European society is likely to increase the propensity for Europeans to invest in pension funds and to access, through a variety of pension forms, the services of international financial centres. In some states however, such as in Austria, the use of insurance products means that pension assets under management are relatively modest. Nonetheless, this demonstrates an alternative means of preparing for old age that draws upon the services and expertise of international financial centres.

⁴⁴ <http://www.oecd.org/dataoecd/3/49/41218144.pdf>

⁴⁵ Pension Funds Online

⁴⁶ Pension Funds Online

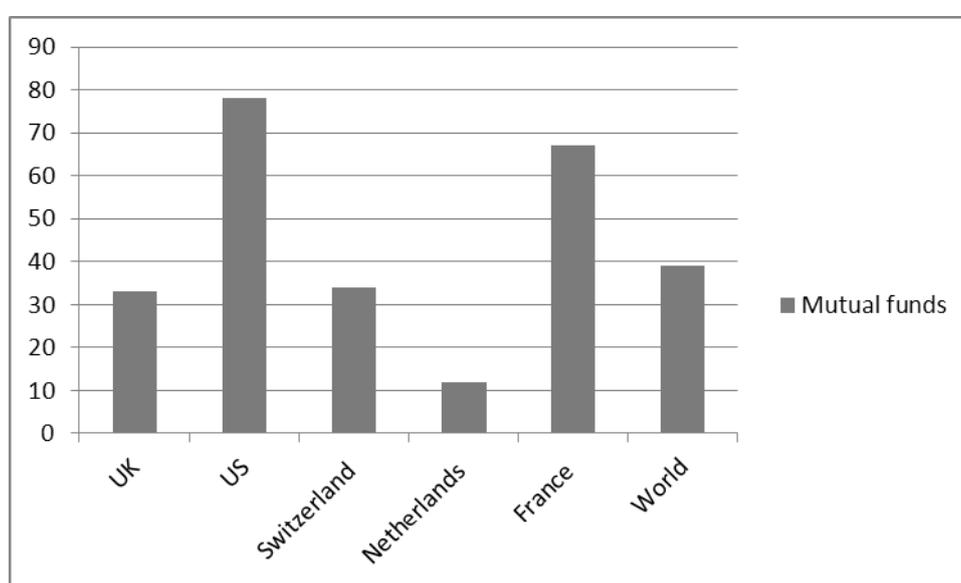
⁴⁷ <http://www.pensionfundsonline.co.uk/countryprofiles/czechrepublic.aspx>

⁴⁸ http://www.economist.com/node/10533428?story_id=10533428

Mutual Funds

2.41 Another important savings vehicle is mutual funds. Investors in mutual funds benefit from the expertise of the fund manager and therefore, these funds open up investment returns to savers that they otherwise would not have, due to a lack of expertise comparable to that held by the fund manager. Alongside the UK and the US, France, Luxembourg, Australia, Italy and Japan are recognised as important mutual fund centres.⁴⁹ The figure below illustrates the size of the mutual funds in various jurisdictions as a percentage of GDP.

Figure 2.4: Mutual funds as a percentage of GDP (by source of funds) 2009



Source: TheCityUK, Fund Management 2010

Loans

2.42 Households use the financial sector to borrow funds. It is useful to distinguish between *planned* and *unplanned* borrowing. A key function of planned borrowing is consumption smoothing. If people never took on debt, then their options would be either to consume all of their income each period or to save up (early in life consuming less than income) and consume from their savings later. In practice, people take some of the latter path in respect of pensions savings. But the life-cycle of earnings typically involves a rising path — i.e. people typically earn less in their 20s (say) than in their 40s and 50s. This is partly because of rising economy-wide productivity over time, but also because people become

⁴⁹ TheCityUK, Fund Management 2010

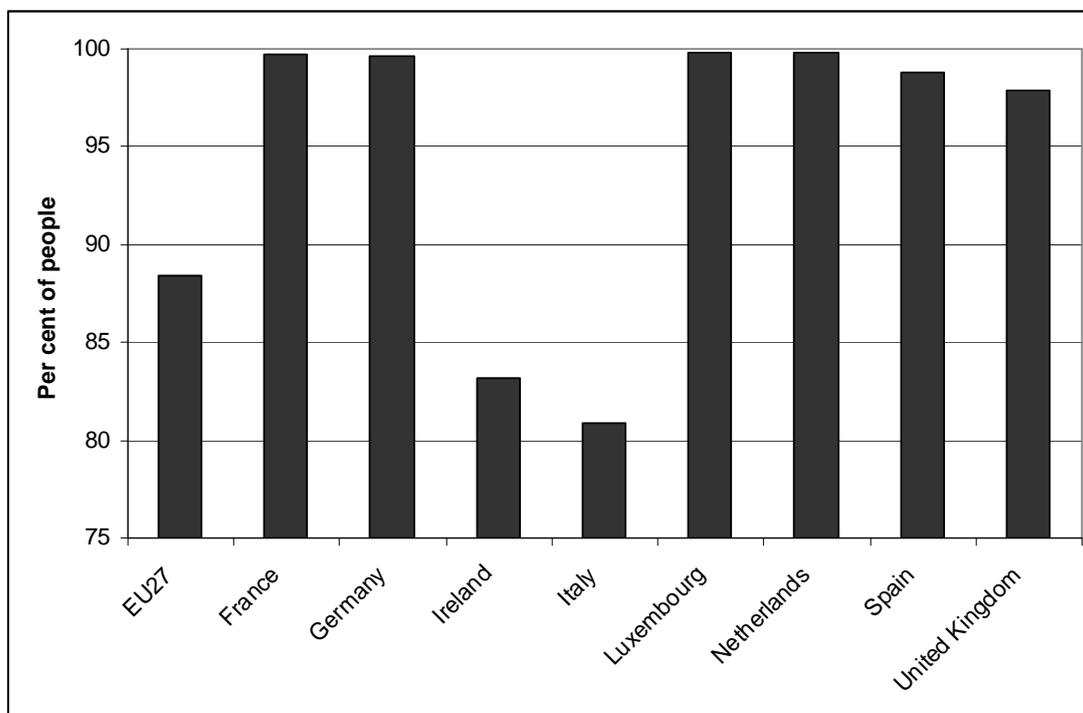
more productive as they acquire work experience and are promoted and have salary rises because of it.

- 2.43 This means that if they had to save up when they were young, their consumption would differ very markedly between life stages — when young consumption would be much lower than in middle life. And this is certainly true to some extent. But by borrowing when young and paying off debts later, out of raised incomes, people can make their consumption smoother — avoiding unnecessary hardship when young at the expense of modest consumption reduction in mid-life.
- 2.44 People engage in planned borrowing for many of the same purchasing purposes that they save — education, weddings, household goods, holidays and so on. However, they also engage in planned borrowing for major purchases of consumer durables, such as cars and houses, for which saving in advance is rarer (simply because of the amounts of money involved and the point in life at which the purchase is typically made). Consumer durables provide a stream of services. If we rented them (e.g. as house tenants) we would pay the cost of those services in the periods we received them. If we buy them, there is an upfront investment. But by taking on debt for such purchases, we better match the period in which we make payments (servicing and repaying our debts) to the period in which we receive the services we purchase. It is certainly possible (and does indeed happen) that finance for housing and other consumer durables proceeds via equity sharing rather than debt (e.g. Islamic mortgages and other shared equity schemes for house purchase). But debt is a much more popular instrument.
- 2.45 Another form is investment in human capital. A classic example of this might be someone borrowing in order to fund a post-graduate degree. In such a case it is intrinsic to the process that the higher incomes to repay the loan come later than the initial investment. Important social benefits of the financial sector in this sense are that it promotes economic development (through enhanced human capital) and social mobility (by allowing those from poorer backgrounds, but with talent, to train themselves and thereby obtain opportunities that, in the absence of the ability to borrow, they would not have).

Use of banks for cash-flow management

- 2.46 The percentage of households containing someone with a bank account in 2008 was above 95 per cent in 15 of the 27 EU member states. The percentage was above 80 per cent in 24 of the 27 EU member states, the exceptions being Bulgaria, Romania and Greece.
- 2.47 The figure below shows the percentage of people living in households with a bank account in 2008 in the EU member states of the eight Cities. All states' figures exceed 80 per cent, with the Netherlands and Luxembourg tied at the top (99.8 per cent each) and Italy and Ireland at the bottom (80.9 and 83.2 per cent respectively). The average figure for the EU27 is 88.4 per cent.

Figure 2.5: Per cent of people living in households with a bank account in 2008 in the states of the eight cities

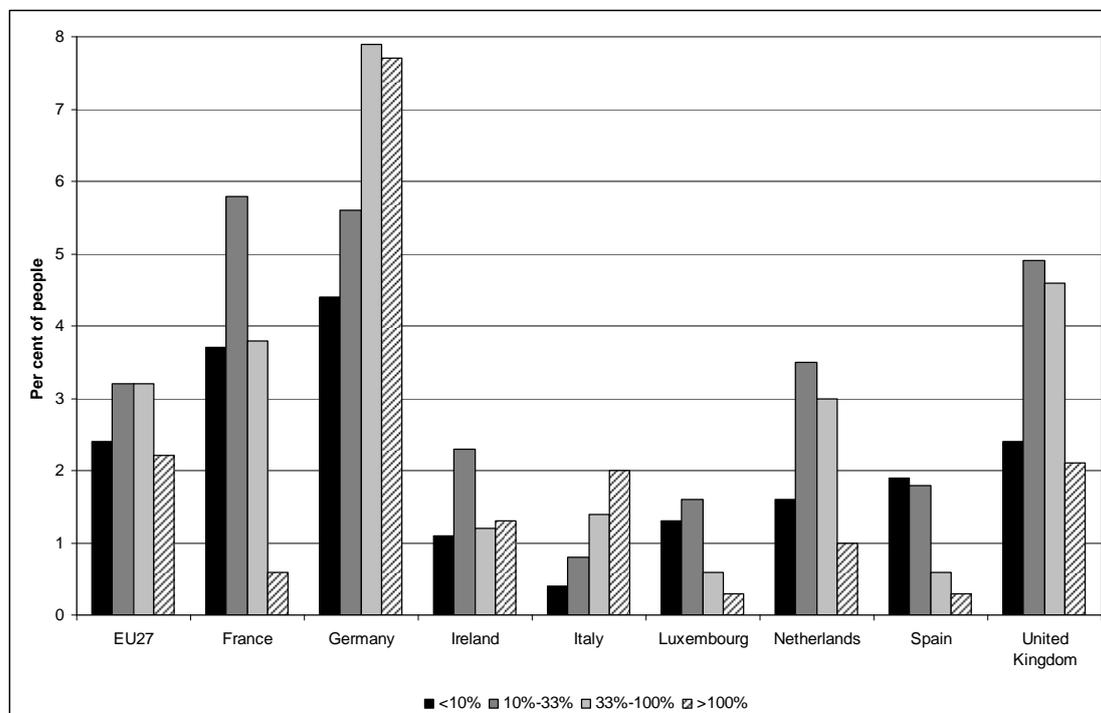


Source: Eurostat

- 2.48 In 1964 households in the UK deposited 40 per cent of GDP with banks and building societies and borrowed only 14 per cent. Household borrowings have increased from 14 per cent of GDP to 76 per cent in 2010. Their deposits grew less rapidly; increasing from 40 per cent of GDP to 72 per cent in 2010. Something similar happened in the corporate sector.⁵⁰ Total bank lending has grown more dramatically than deposits in banks and ‘a customer funding gap’, which means a deficiency of customer deposits (household or corporate) versus loans to those sectors, has developed. Wholesale finance has enabled this gap to be bridged and more capital to be extended to households.
- 2.49 The figure below shows the percentage of individuals across the EU27 and in each of the member states of the eight cities in various degrees of indebtedness.

⁵⁰ Figures taken from Adair Turner’s speech to Cass Business School, 17 March 2010

Figure 2.6: Share of individuals in indebted households, by size of the owed amount (as a per cent of monthly incomes) in 2008 in the states of the EU27 and of the eight cities



Source: Eurostat

2.50 In Germany in 2008 7.7 per cent of individuals lived in households with an imbalanced amount which represented more than 100 per cent of their monthly disposable income. Only four other member states have more than two per cent of individuals with an imbalance on their bank accounts of over 100 per cent: Austria (5.3 per cent), Slovenia (3.4 per cent), Cyprus (2.9 per cent) and the United Kingdom (2.1 per cent). Of the states of the eight cities, France, Germany and the United Kingdom have higher levels of household debt relative to monthly disposable income than other states.

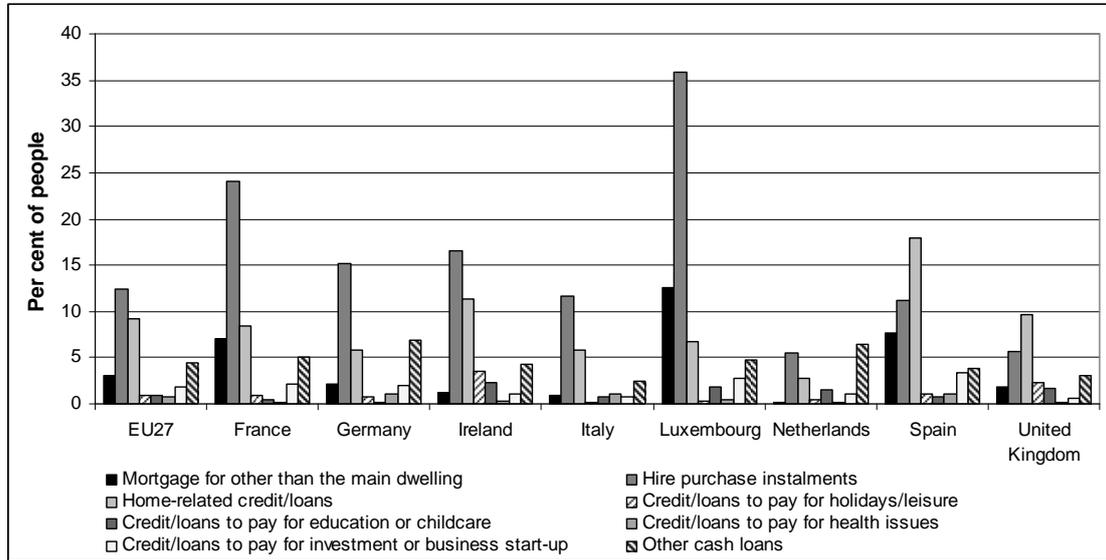
Table 2.7: Lending to Eurozone households

	Outstanding amounts of household loans in Dec 2009, €bn			
	Loans to Euro-area households	of which...		
		Consumer credit	Lending for house purchase	Other lending
AT	133.7	24.8	73.5	35.5
BE	104.7	8.9	79.3	16.5
BG	9.8	4.9	4.3	0.6
CY	20.9	4.8	10.5	5.6
CZ	37.1	7.1	26.1	4
DE	1,415.1	179	962.3	273.8
DK	309.1	17.1	265.2	26.9
EE	7.4	0.8	6.1	0.6
ES	876.7	92.5	657.2	127
FI	98.4	12.4	71.9	14.2
FR	953.4	155.2	716.4	81.7
GR	97.7	27	67.7	3
HU	29.1	13	14.7	1.5
IE	143	24	110.3	8.7
IT	496.6	57.4	280.5	158.8
LT	8.4	1	6	1.3
LU	30.2	1.5	17.1	11.6
LV	8.6	1	6.8	0.8
MT	3.5	0.4	2.5	0.7
NL	424.8	25.1	378.4	21.3
PL	103.2	31.2	52.4	19.6
PT	139	15.8	110.7	12.5
RO	23.6	17.2	5.7	0.7
SE	227.6	15	151.7	61
SI	8.4	2.9	3.9	1.6
SK	13.9	1.9	9.5	2.6
UK	1195.7	148.6	992.1	55
Euro area	4,960.1	633.4	3,551.7	775

Source: ECB, Eurostat

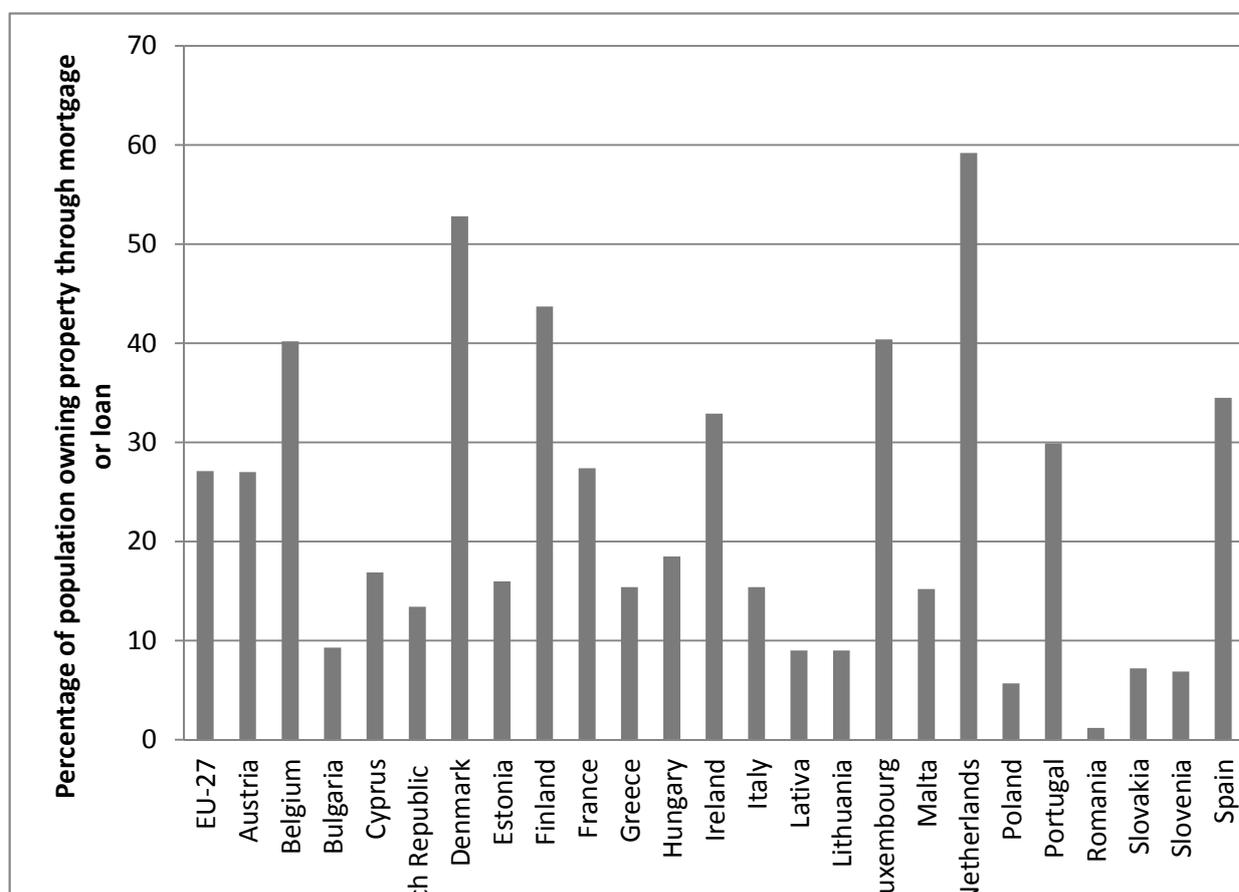
- 2.51 Figure 2.7 shows the type of debt that households have. A striking 35.8 per cent of individuals in Luxembourg in 2008 lived in households paying hire purchase instalments. Then we illustrate how dependent Eurozone households are on finance for home ownership.

Figure 2.7: Share of individuals in indebted households, by type in 2008 in the states of the EU27 and of the eight cities



Source: Eurostat

Figure 2.8: Percentage of population owning home through a mortgage or loan



Source: Eurostat – Data not available for Germany⁵¹

Results of our model

2.52 Let us return to our model. First let us consider planned borrowing (in the sense that when the borrowing is required is known in advance), then we shall consider making provision for unplanned borrowing (so, although the agent plans against the risk of needing to borrow, *when* that occurs is not known in advance). Our agent still has the same features, but this time we allow her to borrow as well as to save (still under conditions of complete certainty). This is “pure” borrowing, like the pure savings above, with no interest to pay on borrowing.

⁵¹ In Germany, the owner occupation rate was about 43 per cent on the most recent data available (2007), versus an EU average of 67 per cent. However, these figures, and the figures for those owning houses, are not comparable to the other figures in Figure 2.8, as it is a much more common practice in Germany, than elsewhere in Europe, to own a house one does not live in (and hence is not one’s “home” for the purposes of Figure 2.8) and to live in a house one does not own.

Planned borrowing

- 2.53 The agent will consume more than her income, borrowing to cover the difference, until she is 40. From then until retirement she saves, and then consumes in retirement.
- 2.54 This time, because she has borrowed earlier in life and needs to pay those loans off, her retirement income is not quite so high — it is now only 47 per cent higher than if she could neither save nor borrow. But because she has been able to smooth her income perfectly over her lifetime, rather than being forced to under-consume when young, her total lifetime utility rises further — by an amount equivalent to a further 0.9 per cent of lifetime income (i.e. being able to borrow as well as save is equivalent, in utility terms, to having an additional 4.6 per cent income every year throughout life).
- 2.55 Again, this result is sensitive to the rate of wage growth. If wages grew only 1.5 per cent per year, then being able to borrow as well as save would add utility equivalent to 2.6 per cent extra income; if they grew 2.5 per cent annually, then being able to borrow as well as save would add utility equivalent to an extra 7.3 per cent of income.

Cash-flow management

Unplanned indebtedness

- 2.56 In addition to planned indebtedness, households also experience unplanned indebtedness. This might arise because of unexpected unemployment, illness, or injury reducing labour income by more than it is feasible to reduce consumption in the short term. It might also arise because of unexpected additional costs — such as the unplanned birth of a child. In such circumstances, households take on debt in order to either see them through a temporary shortfall (e.g. if an unemployed worker is expected to find work again soon) or in order to facilitate and smooth the process of reducing consumption to a new lower-and-sustainable level.
- 2.57 It is worth observing that if the risk of facing unplanned indebtedness is lower, then households will find it optimal to enter into higher planned indebtedness. The optimal amount of planned indebtedness will depend upon how rapidly income is expected to grow across the lifecycle. If income growth over the lifecycle is more rapid, then it is optimal to take on more debt when younger. Typically, faster-growing economies will be associated also with steeper growth across the lifecycle.

Credit facilities

- 2.58 Closely related to unplanned loans are financial sector credit facilities such as overdrafts and credit cards. These provide access to funds, and can be thought of as an option to take out a loan (without an obligation). These can be useful for households in managing short-term and relatively small cash-flow issues. (Larger and longer-term cash-flow issues are more likely to be addressed via loans.)
- 2.59 Such short-term cash-flow issues might arise for a number of reasons:

- (a) a surprise cost in a particular month
 - (b) an administrative delay to an income source (e.g. a problem with one's firm computer)
 - (c) a miscalculation (e.g. forgetting that a certain bill needed to be paid)
 - (d) intrinsic volatility in costs or income (e.g. for a self-employed person or an employed person paid by commission only)
- 2.60 Without the ability to draw on credit facilities, households would either have to save more (leaving funds idle), secure loans (then left idle) or be subject to large volatility in consumption. There would also be an increased risk of defaulting on other loans (making securing such loans difficult and expensive).

Unplanned borrowing in our model

- 2.61 Now we adjust our model to make provision for shocks — unemployment, babies, divorce, sickness. We model this by assuming that, precisely three times during the working life (i.e. between the ages of 21 and 65) instead of receiving the expected salary for that period (which rises, anyway, at 2 per cent per year, regardless of whether it is received that period or not), the agent receives only the same income as in retirement (we can interpret this as a state benefit — other “shocks” raising costs might be conceived as reducing net funds available by an amount equivalent to income being reduced to the benefit level).
- 2.62 The agent does not know when these “shocks” will occur. To simplify the analysis, we assume that, when able to borrow and save, the agent pre-commits to a consumption path across the working life, and then consumption in retirement varies depending on in which periods the “shocks” actually occurred.⁵²
- 2.63 Being able to save and borrow to make provision for unplanned borrowing has a value equivalent to a further 0.6 percentage point cent rise in starting income — in the absence of being able to save and borrow, with 2 per cent wage growth one would need an income 5.2 per cent higher each period to achieve the same lifetime utility.
- 2.64 At 1.5 per cent wage growth being able to save and borrow would be equivalent to 2.7 per cent additional lifetime income. At 2.5 per cent wage growth, being able to save is equivalent to 8 per cent additional lifetime income.

⁵² We make this assumption, rather than the alternative assumption that each period the agent “updates” her expectations of when she expects to become unemployed and hence her planned consumption path, to simplify the explanation of what we have done. It does, however, slightly affect the numerical answer produced.

Implications of our model for appropriate size of financial sector

- 2.65 It has been alleged in many quarters, recently, that the financial sector had become “simply too big” in many member states. According to our model, with wage growth over the lifetime of 2 per cent a well-functioning financial sector has the capacity to add around 5 per cent to GDP through pure savings and borrowings effects⁵³, whilst if income growth is faster than this, at 2.5 per cent, that rises to 8 per cent, and if wage growth is less, then the value added through pure savings and borrowings effects is less than 3 per cent of GDP.
- 2.66 To understand the implications it is important to observe that this effect is modelled on the basis of risk-free savings and borrowing. The financial sector *can* (indeed, a well-developed financial sector probably *should*) add more than 5/8/3 per cent to GDP (depending on the wage growth rate), but doing so is then intrinsically associated with some combination of:
- (a) operating internationally, adding value to consumption smoothing by citizens of *other* countries;
 - (b) taking risk — risks lending for business ventures, personal loans that might potentially not be repaid, risk management activities associated with insurance, speculative activities, and so on; and
 - (c) activities that though often conducted through the financial sector are not intrinsic to it, such as providing business advisory services (e.g. how to set up a business) etc.
- 2.67 Note that where risk-taking is a key element, then as well as added value to GDP there should be expected to be added volatility in it.
- 2.68 When the gross value added of a financial sector is smaller than its potential “pure savings and borrowing effects” contribution to GDP, that will indicate some combination of:
- (a) savings and borrowing being managed outside the financial sector, through other means (such as raising children to support one in old age, or borrowing money from family members);
 - (b) financial services being imported from abroad; and
 - (c) lack of development in financial services.
- 2.69 It is of interest to compare the figures produced by our model with the actual gross value added of the financial sector, and net trade thereof, for various EU member states.

⁵³ ...given the model’s key assumptions, such as the frequency of shocks or the level of benefits relative to salaries.

Table 2.8: Gross Value Added and net exports of financial sector, 2009

	GVA as % of GDP	Net exports as % of GDP
Austria	4.1%	0.2%
Belgium	5.2%	0.2%
Czech Republic	3.3%	-0.1%
Denmark	5.8%	0.0%
Estonia	3.0%	0.0%
Finland	2.6%	0.2%
France	4.5%	0.0%
Germany	3.6%	0.2%
Hungary	3.7%	-0.1%
Ireland	8.8%	1.0%
Italy	4.5%	-0.1%
Luxembourg	23.4%	32.6%
Netherlands	6.4%	0.0%
Poland	3.4%	-0.1%
Portugal	6.8%	0.0%
Slovak Republic	3.4%	-0.8%
Slovenia	4.3%	0.0%
Spain	6.0%	0.0%
Sweden	3.9%	0.2%
UK	8.6%	1.9%

2.70 We observe the following points:

- (a) Only six member states have gross value added of the Financial Sector of 6 per cent of GDP or higher: Ireland, Luxembourg, Netherlands, Portugal, Spain, UK. Of these, all but Spain are known for having long-standing or highly developed financial sectors, and Spain's level of financial development has risen greatly in recent years, now being only exceeded by Luxembourg, the Netherlands and the UK (see Table 2.2).
- (b) The member states with gross value added well above 6 per cent — Ireland, Luxembourg, and the UK — are the only three member states that are significant net exporters of financial services.
- (c) France and Germany appear as wealthy member states with relatively smaller financial sectors.

2.71 We conclude that, if 2 per cent were a reasonable approximate medium-term sustainable rate of income growth, the only member states with financial sectors materially larger than the added value through pure savings and borrowings effects are Ireland, Luxembourg and the UK, and since Luxembourg is a very significant net exporter, that leaves only the

UK and Ireland that, on our model, might plausibly be said to have had a financial sector so large, relative to GDP, that it had clearly entered into the territory where either it was dependent upon more rapid wage growth than 2 per cent, or if that size of financial sector had been sustained over the long-term, there was inevitably a trade-off of additional gross value added from the financial sector being associated with additional risk (and hence volatility in GDP).

- 2.72 We note again that exploiting such a trade-off is virtuous — the optimal amount of risk and volatility, and hence faster growth in GDP — as per our earlier model — is not zero. Furthermore, the fact that the financial sector is involved in activities associated with risk and return, and hence intrinsically volatile, does not imply that the financial sector's involvement in these activities increases the risk of the economy as a whole. Indeed, in many instances, as we shall see below, the involvement of the financial sector in such activities actually reduces whole-economy risk, because the use of the financial sector allows much more efficient diversification of risk.
- 2.73 For most member states, if wage growth over the medium term can be 2 per cent or higher, their financial sectors still offer considerable further scope for development, even just to exhaust the potential rewards of efficient savings and borrowing — and that is before one takes account of the scope to exploit the trade-off of risk, return, and higher growth.
- 2.74 Another point to note is the leveraged effects of changes in wage growth rates upon the optimal size of the financial sector. A rise of one quarter in the growth rate of the economy (from 2 to 2.5 per cent) drives a 60 per cent increase in the smoothing-based component of the size of the financial sector.
- 2.75 We can think of this point in combination with the earlier analysis of how increases in financial development are drivers of more rapid growth. A simplistic way to express the difference between this and the earlier section would be that the *quality* of the financial sector is a driver of more rapid economic growth, whilst more rapid economic growth is a driver of and increased optimal *size* in the financial sector. But this is simplistic because achieving a given quality of financial sector will in practice not be possible unless the sector has sufficient size. Thus there is feedback between the two elements.

Insurance and Risk Management

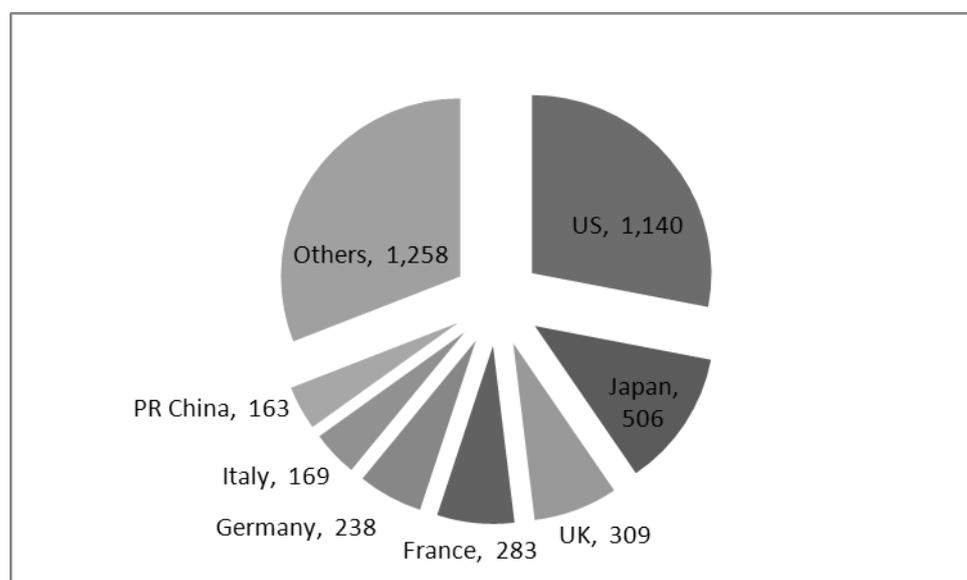
- 2.76 Households manage their risk through a variety of insurance products. These include:
- Health insurance. For example, accidental death and dismemberment insurance; dental insurance; disability insurance; total permanent disability insurance; income protection insurance; long term care insurance; and vision insurance.
 - Life insurance. For example, permanent life insurance; term life insurance; universal life insurance; variable universal life insurance; and whole life insurance.

- Residential insurance. For example, contents insurance; earthquake insurance; flood insurance; home insurance; landlords insurance; mortgage insurance; and property insurance.
- Other kinds of insurance include casualty insurance, crime insurance, group insurance, liability insurance, marine insurance, no-fault insurance, pet insurance, phone insurance, reinsurance, terrorism insurance, travel insurance, vehicle insurance, wage insurance, workers' compensation.

2.77 Use of such insurance creates a number of social benefits. Because insurance allows risks to be pooled and diversified by insurance companies it is much cheaper for households to achieve the same level of protection via an insurance product than via savings, investments and loans. And in addition, of course, households achieve the effects they would by saving — allowing them to manage difficult life events, such as ill-health, the death of a major household salary-earner, or a house burning down, without precipitate reductions in consumption.

2.78 The total volume of premiums in various markets is shown in the figure below.

Figure 2.9: Gross insurance premiums (\$bn)



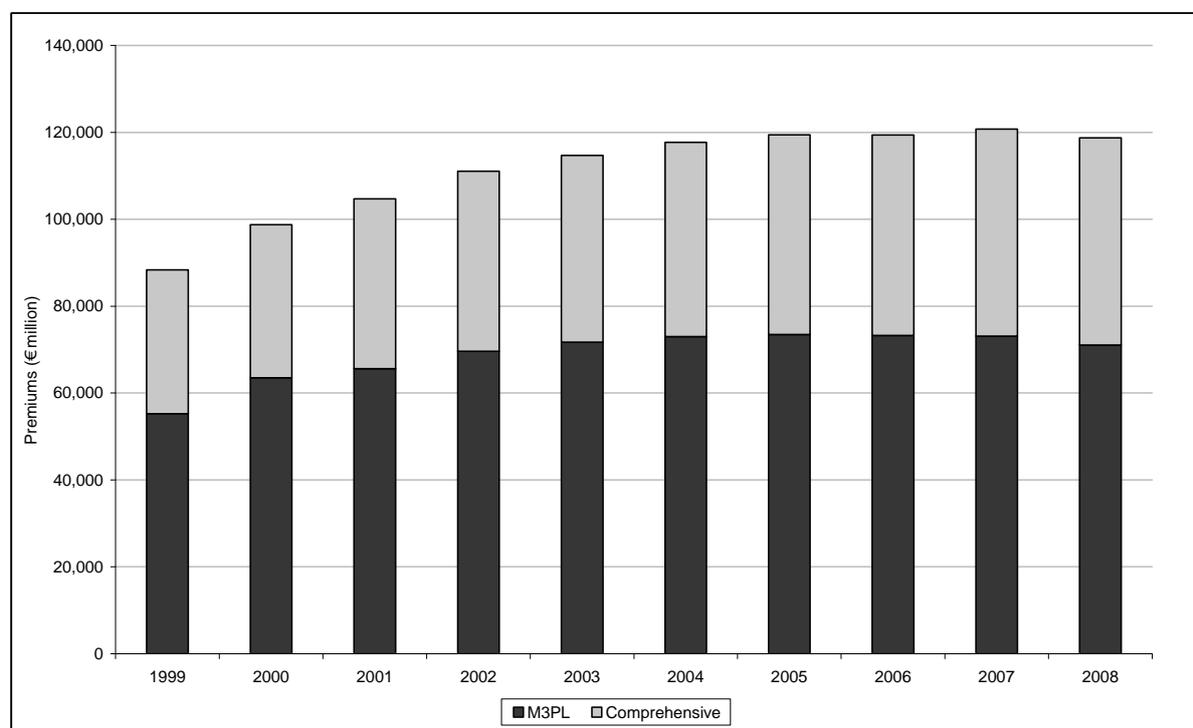
Source: SwissRe

2.79 Two importance forms of general insurance are motor and home insurance.

Motor insurance

2.80 Europe has the largest motor insurance market in the world, with almost 300 million vehicles on the road and total motor insurance premiums in the EU27 of just under €119 billion in 2008. However, the market shrank in nominal terms in 2008.

Figure 2.10: Total motor premiums for EU27 by sector, 1999–2008



Source: Comité Européen des Assurances (CEA), Europe Economics (EE) analysis

2.81 The market in the EU27 is largely dominated by that in France, Germany, Italy, Spain and the UK, which together account for just under 75 per cent of all motor insurance premiums.

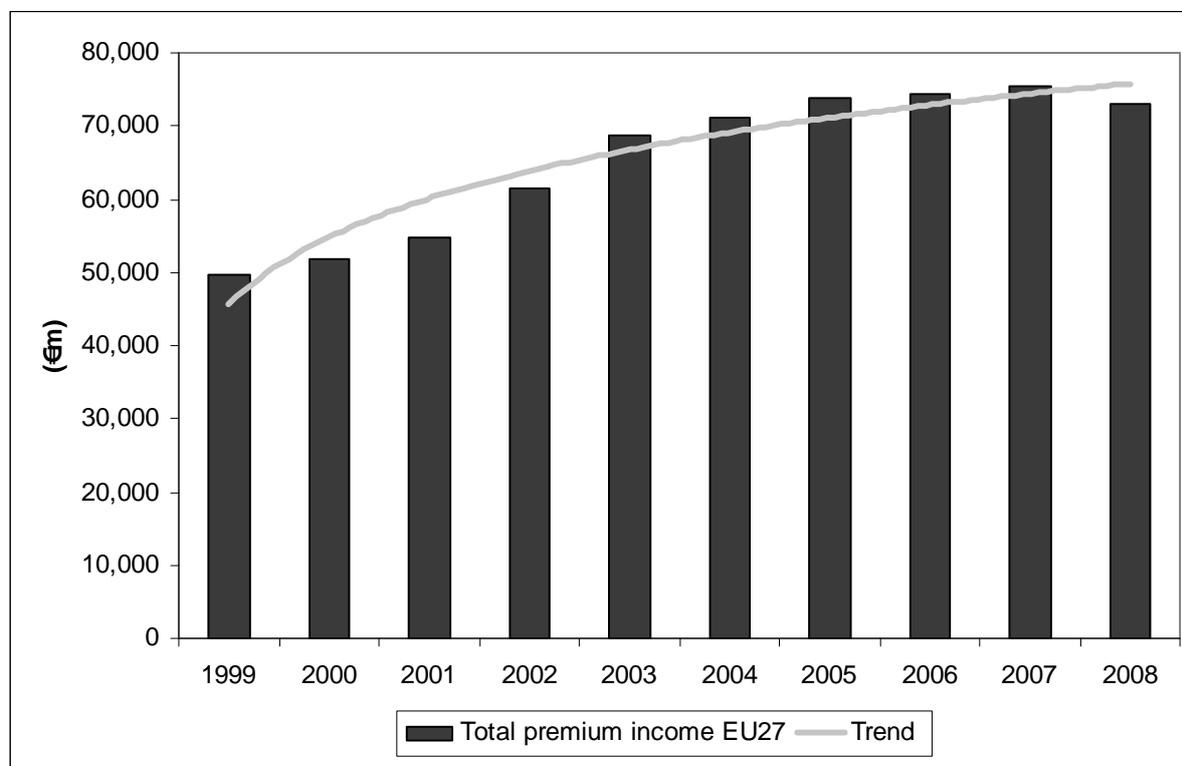
2.82 It is thought that around 800,000 vehicles are stolen each year in the EU and around 60 per cent of these are not recovered.⁵⁴ So long as these vehicles are insured and the terms of the insurance policies are complied with then the owners are compensated following thefts. This would not be the case in the absence of motor insurance, which means that it is a financial service bringing a benefit to households.

Home insurance

2.83 Similar to the experience in motor insurance, recent years have not seen significant growth in real terms in the size of the market, which stood at just over €74 billion in 2008. The earlier period of growth was driven largely by increasing penetration of insurance by the CEE member states and significant market growth (in absolute terms) in the UK, Ireland, Sweden and Spain. Indeed, the UK accounted for 25 per cent of the change in total premiums in the EU in the period 1999–2008.

⁵⁴ Europol

Figure 2.11: Total premiums in the EU27, 1999-2008



Source: CEA, EE calculations

- 2.84 As a general rule, the fastest growth was focused in the CEE member states, Malta and Cyprus. Indeed, looking at those ten markets recording the fastest rate of growth between 1999 and 2008, the only exceptions to this general rule were the markets in Greece and Spain.
- 2.85 It is reported that in 2008 almost 1.8 million fires occurred in the EU and around 20 per cent of these were classified as “structure fires”.⁵⁵ While not all of these structures will have been homes, a considerable number of them will have been. Again, so long as these homes are insured and the terms of the insurance policies are complied with then the owners will be compensated following these fires. This would not be the case in the absence of home insurance, which means that it is a financial service bringing a benefit to households.

The finance sector and macroeconomic volatility

- 2.86 If households were unable to borrow, that would tend to increase macroeconomic volatility in a modern growing economy, because when people became unemployed or otherwise

⁵⁵ Center of Fire, *Statistics Report 2008*

fell on hard times, they would have to scale back their consumption more aggressively than is necessary when they can borrow. This more aggressive reduction in consumption would correspondingly lead to second-round effects on other businesses, spreading and amplifying the effects of macroeconomic disturbances.

- 2.87 Of course, if there was no financial sector then (as we have argued above) the economies would be much smaller and much slower-growing anyway, so it is possible that the *absolute* level of macroeconomic volatility would be lower. (In very slow-growing, small economies, macroeconomic volatility can be very low.) And of course by promoting innovation and risk-taking, the presence of a financial sector tends to increase macroeconomic volatility (if we never take any risks, we never make any mistakes, and mistakes (e.g. investment in projects that go bad) are a key source of macroeconomic volatility). But the consumption-smoothing effect tends to diminish macroeconomic volatility. The net combination of these effects tends to result in less macroeconomic volatility in practice, for a given level of wealth and rate of growth, in more financially-developed economies. For example, macroeconomic volatility in developed economies tends to be less than in less developed economies, and macroeconomic volatility in modern times (say, since the Second World War) has been less than historically (say, in the 1920s and 1930s or before). However, the issue is by no means clear cut — and *ought* not to be, since some macroeconomic volatility is a symptom of health (if we never make any mistakes, we aren't taking enough risks).
- 2.88 Academic empirical studies have been conducted to quantify these effects. For instance, Cecchetti et al. (2006)⁵⁶ empirically found that financial development reduces the volatility of both consumption and real growth. In particular, Cecchetti et al. (2006) estimate the proportion of consumers who are actually liquidity constrained (i.e. that they cannot consume more than their current income) and then provide some empirical evidence suggesting that increased access to credit markets enable households to smooth their consumption, which in turn leads to less growth volatility. Their estimates for their sample of OECD countries show that the share of constrained consumers generally ranges from 0.4 (Switzerland), to 0.94 (UK).
- 2.89 They also conduct econometric tests, using both time series and panel data evidence, finding that the fraction of liquidity constrained consumers is significantly reduced by financial development, measured by the ratio between private credit and GDP. In particular, the panel data estimates seem to suggest that an increase in the private credit to GDP ratio of 10 percentage points (e.g. from 80 to 90 per cent) would decrease the share of constrained consumers by about 9.6 percentage points. Using a methodology described in the paper they are able to derive the relative importance played by the reduction in the share of constrained consumers in explaining the reduced variance of consumption observed in their sample period and they find that, in the case of the UK, the

⁵⁶ Cecchetti S., Flore-Lagunes A. and Krause S. (2006), "Financial Development, Consumption Smoothing and the Reduced Volatility of Real Growth", mimeo, American Economic Association Conference, 2007.

variance of consumption growth declined over the period 1992-2004 by about 1.6 percentage points with respect to the period 1981-1991 and that the share of constrained consumers fell by about 46 percentage points over the same time period.

- 2.90 With their econometric analysis they are able to attribute 18.3 per cent (i.e. 0.29 percentage points) in the fall of consumption variance to the fall in the share of constrained consumers. Taking the panel estimates of the relationship between the share of constrained consumers and the degree of financial development mentioned above at face value, and observing that the average value of financial development in the UK went up by about 0.68 in the 1981-91 period to about 1.18 over the 1992-2004 period, we can argue that the fall in financially constrained consumers in the UK might have been entirely due to the increase in the level of financial development. In turn, this would allow us to attribute the whole 0.29 percentage points fall in the variance of consumption to the increased financial development that have occurred over the sample period.
- 2.91 In other words, the reason the UK economy was less volatile (that there were fewer recessions and less unemployment) in the period 1992 to 2004 was because of increased development in the financial sector. If correct, that clearly implies a highly material positive impact of the financial sector on social welfare.

3 BENEFITS TO NON-FINANCIAL CORPORATE SECTOR

Direct Benefits

- 3.1 Many other types of firms — law firms, accountants, IT suppliers, sandwich suppliers, coffee suppliers, and so on — supply goods and services to financial sector firms.
- 3.2 Furthermore, in the industrial sectors covered by our case studies international financial centres can be seen to provide services that are intrinsic to the operations of the firms covered by our case studies:
- Since GSK operates in various markets it holds foreign currency to conduct its activities. The exposure of overseas operating subsidiaries to transaction risk is minimised by matching local currency income with local currency costs. For this purpose, internal trading transactions are matched centrally and the company manages inter-company payment terms to reduce foreign currency risk.
 - Volvo calculates its finances through the Swedish Kroner. Since AB Volvo is a global company, it adjusts its global trading in the US, UK, Europe, etc. through the respective exchange rates.
 - Approximately 65 per cent of Ahold's net sales are generated by subsidiaries whose activities are conducted in a currency other than the euro, mainly in the US dollar (but also in the Czech crown).
 - At the end of 2010, EDF allocated 50 per cent of its shares in RTE to a dedicated asset portfolio to cover costs related to the decommissioning costs of nuclear plants.⁵⁷
 - Iberdrola transactions carried out in foreign currencies are adjusted for the exchange rate on the transaction date. Financial derivatives are used for further adjustments due to changes in the exchange rate from the transaction date to when the payment is received.
 - The 2009 annual report of KTG Agrar states that they have taken out insurance against storm damage on an appropriate scale.
 - EDF has an extensive set of insurance policies, including damage insurance against their nuclear facilities. These facilities would not be able to be built or operated were they not insured.

⁵⁷ EDF. *2010 Full-year Results: Improved industrial performance, Exceptional provisions, Regained financial flexibility*. EDF, 16 Feb. 2011. Web. <press.edf.com>.

- 3.3 Many of the activities highlighted above involve accessing foreign currency to conduct trade. This is fundamental to much cross-border trade; an activity integral to improved economic performance in Europe.

Savings and Investments

- 3.4 First we focus upon savings and investment *by* firms. Below we shall consider the use of the financial sector to obtain investment *in* firms.

- 3.5 Firms will often have some element of liquid working capital, to act as a buffer against losses, to manage discrepancies in time between when payments are made and when payment is received (e.g. in a long project where there is only payment at the end, upon delivery of the final product) sudden cash-flow issues. Small elements of such liquid working capital might be held at the workplace (e.g. petty cash), but most of it will be held in the financial sector in some way. For example, it might be kept as form of “savings” in a bank in the form of demand or time deposits. Or the bank might offer the facility to purchase short-term government bonds on behalf of the company. In this way the company can secure a modest return on liquid funds.

- 3.6 Perhaps the most straightforward form of investment *by* firms, using the financial sector, is the purchase of stakes in other firms — with the limiting cases of mergers and takeovers. Firms might seek to take over other firms to obtain synergies, economies of scale, change their business model, to employ cash reserves, because they believe their managers can manage the acquired firm more efficiently or because they see a business opportunity for the firm that they believe others have missed.

- 3.7 Now if there was no financial sector, there could still be mergers and acquisitions. Firms could approach each other directly and negotiate (indeed, that happens even *with* a financial sector). But the presence of a dedicated financial sector allows greater efficiency and more options concerning the conduct of mergers and acquisitions. This is particularly relevant in a case where a company has many shareholders. If there was no financial sector, then a company owned by many small stakeholders would be very complex to negotiate a takeover with. With a financial sector, when a firm is listed on a stock exchange, a firm can simply declare an offer price and see who will sell.

Acquisitions through international financial centres

- 3.8 Cash-rich firms can choose to invest in acquisitions, as well as to grow organically. International financial centres are important means for conducting acquisitions in a modern economy. Below we review the benefits of financial services experienced by non-financial corporate entities by looking at the role of international financial centres in some significant mergers and acquisitions involving our case study firms.

- 3.9 Acquisitions and divestitures allow companies to grow, enter into new markets, change their product portfolio or raise funds when necessary. Such acquisitions or divestitures are complex financial operations and firms often seek financial advisers to provide the necessary professional advice.

Box 3: Acquisitions/divestitures in our case studies

A large number of acquisitions occur in the retail sector. For example, Unilever made several big acquisitions in 2000 which more than doubled company's assets. These acquisitions were funded mostly through bonds and other loans. For example, in 2000 Unilever issued five new corporate bonds in three different currencies using Deutsche Bank, HSBC and BNP Paribas as book runners.⁵⁸

In the energy sector, EDF made major international acquisitions in 2009 by acquiring British Energy; partnered with Centrica; and 49.99 per cent of United States' nuclear business in Constellation Energy. These acquisitions and mergers contributed €1.2bn to the Group's operating cash flow. The financing of British Energy was secured through a syndicated bank loan of £11bn and private bond placement. Syndicated loans were fully repaid during 2009 following refinancing, particularly with the issues of bonds on Swiss, French, Japan and other markets in several currencies. Book runners for these bonds included Calyon, RBS, Societe Generale, ABN Amro, BNP Paribas and HSBC.

Another large acquisition was undertaken by Iberdrola's purchase of Scottish Power in 2007 for £14.4bn. Smaller scale acquisitions from agribusiness sector include 2006 merger between ZT Kruzswica and three other companies from the vegetable fats industry: Ewico Sp., ZPT Olvit Sp. and Olvit-Pro Sp. Consequently, ZT Kruzswica became not only the biggest Polish manufacturer of vegetable fats but also one of the largest in Central Europe.

Box 4: Acquisitions/divestitures involving financial advisors in our case studies

In 2004 UCB decided to focus only on biopharmaceuticals and, as part of this refocusing, it acquired the Celltech Group in the UK for a final value of £1.37bn. Financial advisors involved in this acquisition included Cazenove, Panmure Gordon, JP Morgan, Lazard LLC and a number of international law firms. The acquisition was mainly funded by increase in current liabilities in the form of financial debt from credit institutions. Both the advisors and credit institutions were largely drawn from international financial centres.

In 2006 UCB also acquired Schwarz Pharma in Germany, which is the largest acquisition in the firm's history. The acquisition helped UCB to enrich its range of products and enter new fields. Firms advising on this €3.38bn acquisition included Braveheart Financial Services, Deutsche Bank and Rothschild. This acquisition was financed by a combination of equity and liabilities. UCB raised over €2bn through non-current interest bearing loans and borrowings from the banking sector and also increased the number of shares by almost 25 per cent.

In another illustration of the importance of the kind of advice provided by international financial

⁵⁸ The book runner is a firm responsible for looking after the administration of a new bond issue.

centres, Rabobank and ABN Amro advised Ahold in 2006 when they bought 29 supermarkets in Netherlands. Ahold's have also expanded into the Czech Republic through acquisition activity and acquired 56 stores from Austrian company Ragusa in 2005.

Large acquisitions and divestures are very common among car manufacturers. In 2007 Daimler sold European Aeronautic Defense and Space Co to Sogea consortium for €1.5bn. In the same year, Daimler sold Chrysler Holding to a US private equity firm for €5.5bn. Bear Stearns, Goldman Sachs and Ernst & Young were involved as financial advisers. This significant divesture led to a decrease in assets, which was matched by a decrease in liabilities while equity remained stable.

Other examples can include the acquisition of a medium and heavy duty trucks unit from Renault by Volvo in 2001 for €1.86bn. The acquisition was advised on by JP Morgan and Clifford Chance LLP. In the same year, Volvo increased its turnover by 45 per cent.

Loans and Other Capital-Raising for Investment

“Capitalism” in its strict sense

- 3.10 Firms raise funds for investment in a number of ways, but particularly by selling shares, selling corporate bonds, and taking out bank loans. The separation between providers of capital (shareholders, bondholders, bank lenders) and the users of capital (managers of firms), the capitalist/manager distinction, is what is referred to, in the strict sense, as “capitalism”.
- 3.11 Capitalism (in this strict sense) creates great social benefits, because it allows those with good business ideas or management skills, but without funds, to obtain funding for their business projects, and it allows those with funds, but without ideas or management skill, to use those funds productively. This creates great benefits in terms of the value of the businesses that would not exist without capitalism, but also in terms of a dynamic and innovative society and in terms of social mobility. If only those with funds or able to obtain funds from those they knew well (e.g. family members) could pursue their business projects, then the talents and ideas of many less well-off people would be squandered.
- 3.12 Now of course in theory capitalism would be possible without a financial sector, in the sense that individuals with capital could advertise in the press (or indeed go directly to universities or churches or pubs) and announce that they wanted to receive ideas for potential investment (There is even a popular international television franchise — *Dragons Den* — using such a direct approach). But in practice only a tiny portion of opportunities can be accessed in this way.

Different forms of capital

- 3.13 It is vastly more efficient for capital-providers with different risk appetites to engage with different types of financial institution. Some will aggregate their funds by depositing them in banks or buying shares in banks. These banks have a number of important functions:
- (a) They aggregate deposits of one scale (e.g. many small deposits) into another (e.g. fewer large loans for mortgages).
 - (b) They transform maturity (e.g. deposits may be for a short time — say, withdrawn after a month — but loans for a long time — e.g. a twenty-five year mortgage).
 - (c) They pool risk (e.g. some borrowers will default, which might bankrupt individuals; larger institutions can withstand a certain proportion of defaulting, and hence offer little risk to savers).
 - (d) Economies of scale (e.g. in information gathering — a bank might set up credit assessment techniques that are efficient when there are many loans provided every day but which would be prohibitively expensive for one saver to carry out alone).
 - (e) Specialisation (a bank might specialise in lending for a certain purpose — e.g. mortgages, or commercial loans to local businesses).
- 3.14 Other capital-providers might prefer to buy shares in higher-risk specialist lenders, such as venture capital providers or private equity firms. Others might purchase shares or bonds directly from companies or in secondary markets (equity and bond markets). Such secondary markets greatly increase the available pool of investment capital, because they allow investors to provide funds over desired timescale and with much greater liquidity. If one could not trade shares or bonds at all, then the only investors would be those willing to tie up their investment capital until the bonds and equity matured (which might mean waiting until the company was liquidated). If one could only trade such bonds and equity directly (without an exchange) it would be much more difficult to identify willing buyers and to negotiate an appropriate price.
- 3.15 The financial sector also allows much more specific forms of capital to function, according to the risk appetite of investors. Some might want common equity, others preference shares, others junior debt, others senior debt, others secured debt, and so on. Use of the financial sector provides investors with a much broader range of capital-provision choices than would otherwise be feasible.
- 3.16 With access to a greatly diminished pool of capital, if firms could not trade equity and debt freely or if equity and debt were not available in different risk forms, the cost of investment capital would be much higher and there would be fewer new firms, fewer innovations, and firms would expand more slowly. Furthermore, different forms of capital are associated with different degrees of intervention in the management of companies in different scenarios — common equity typically allows some influence over management under normal circumstances; bondholders gain greater influence when companies become

distressed. This allows the targeting of particular forms of management expertise to the organisation/oversight of firms.

- 3.17 We should also not neglect the great value of speculation in markets where debt and equity is traded publicly and visibly. Speculators make money by identifying strengths or weaknesses in assets that others have missed. For example, speculators might identify that a company is in material danger of defaulting on its debts, and start selling (perhaps even shorting) its debt. This might well happen at a stage where the management of the company itself (which is, almost by definition, not well-run) has failed to comprehend its problems. Under such circumstances it is routine for the management of companies to condemn speculators and say they are wrong. And indeed sometimes they will be. But often they will be right — after all, it is by being right that they make money.
- 3.18 In such cases the information that this firm is risky is transmitted around the market at an earlier stage than would otherwise occur, allowing other market participants to react and plan. It is also likely to leave the company with some residual opportunity to rectify its problems before matters become unsalvageable. This is all of great social value, meaning that value-destroying enterprises can be converted into value-creating enterprises, that other companies are less likely to be dragged down by the unexpected failure of one company, and jobs are saved and salaries preserved.

Determinants of sources of investment funding for firms

- 3.19 Banks and other financial institutions are sources of investment funds for firms. The form and availability of this funding tends to vary depending on:
- the size of the firm
 - whether the firm is new or established
 - how much collateral the firm has
 - how innovative the firm is
 - how much on-going risk the firm faces
- 3.20 Some parts of the financial sector are more able than others to meet the financing requirements of firms along these dimensions. Venture capital funds may be more prepared to extend funds to newly established, small or risky firms, for example, than high-street banks. Therefore, the elimination of forms of financial activity makes it harder for the sectors of the economy best served by these kinds of activity to develop and grow.
- 3.21 The financial sector thus allows for better directed investment. When investment is better directed, a given amount of society's wealth produces greater output in the future — a significant benefit.

The size of the firm

3.22 Typically, the larger the firm the more financing options it should have available to it. This is illustrated in the table below.

Table 3.1: Financing options open to different sized firms

	Definition (turnover)	Bank lending	Equity markets	Private placements	Bond markets
SMEs	Under £25m	Yes	Limited	No	No
Mid-sized companies	£25m to £500m	Yes	Limited	Limited	No
Large companies	Above £500m	Yes	Yes	Yes	Yes

Source: HM Treasury/BIS, *Financing a private sector recovery*, July 2010

3.23 It can be difficult for lenders to assess the viability of a loan to SMEs; particularly, if they lack a measurable track record or security.

3.24 Around ten per cent of mid-sized companies in the UK use equity markets to raise capital and the largest five per cent are able to access debt capital markets as well.⁵⁹ For the most part, however, these firms rely on banks for external finance.

3.25 Private placements, corporate bonds or commercial paper can be used to access debt capital markets. This is an important alternative to bank lending for large and upper mid-sized businesses. Equity finance is also important for large firms, particularly those with high growth potential.

Whether the firm is new or established

3.26 In general, young firms and firms operating in “new markets” tend to generate a sizeable fraction of breakthrough innovations: therefore the existence of financial intermediaries that establish specialised relationships with those firms and perform the tasks of evaluating their projects, helping them to grow and finally go public serves a key role, namely that of incentivising socially valuable innovations.

3.27 Not all financial intermediaries are willing or able to take this form. While a venture capitalist may only do fewer than 20 deals a year, which is trivial compared with the number done by most banks, one US study found that 60 per cent of venture capital profits come from 7 per cent of its deals.⁶⁰ This means that venture capitalist are typically less risk averse than banks and can provide finance to SMEs that they consider to have untapped growth potential.

⁵⁹ HM Treasury/BIS, *Financing a private sector recovery*, July 2010

⁶⁰ Cited *Financial Times*, 21 November 2010

How much collateral the firm has

- 3.28 Banks are generally willing to lend financial resources but require collateral; as a result, most start up firms often find it difficult to receive enough financial support. In turn, some alternative investment funds, such as private equity firms, have specialised in providing finance to firms that cannot offer adequate collateral or that operate in rapidly growing markets and that therefore are inherently more risky but also more difficult to evaluate. This has important social implications, because the economic literature has made it clear that a non-negligible portion of productivity growth in a given sector originates from the entry of those new and more efficient firms that often find it difficult to receive financial support from “conventional” financial intermediaries.

How innovative the firm is

- 3.29 Different kinds of financial service providers are backed by different kinds of investors with varying appetites for risk. Some investors may be risk averse and they will tend to invest in financial service providers that provide finance to firms with more routine and standard business models. In contrast, other investors may have a larger appetite for risk and may invest in financial service providers that provide finance to firms with more innovative and novel business models.
- 3.30 Where financial service providers are confronted with Knightian risk⁶¹, it is possible to apply decision making rules, such as maximising expected returns, which contain the risk exposure of investors. Where financial service providers are confronted with Knightian uncertainty⁶², such rules cannot be applied and investors are required to accept a greater degree of risk. Venture capitalists are financiers who typically have greater risk appetites than other forms of financiers and are, therefore, better able to finance businesses of this type.

How much on-going risk the firms faces

- 3.31 Volatility is intrinsic to some industries and not to others. The biotech industry, for example, might be thought to fall into this category. In the 18 months prior to March 2000, the American stock exchange’s biotech index grew 563 per cent, compared to a 238 per cent rise in the NASDAQ. However, over the next two years, share prices on the biotech index collapsed.⁶³ Firms in more volatile industries are more likely to be financed by financial service firms backed by investors with larger risk appetites. In addition to the

⁶¹ This concept holds that situations with risk were those where decision makers are faced with unknown outcomes but with known ex-ante probability distributions. For example, a financial service provider may know the profits of firms within a given industry are normally distributed but they may be unable to place the particular firm that has approached them for financing on this normal distribution.

⁶² Knightian uncertainty exists in a situation where the probability distribution of a random outcome is unknown. For example, a firm may be approaching a financial service provider for financing to launch a completely new product. The probability distribution of profits accruing to firms manufacturing such products is known.

⁶³ Money Week, 31 October 2005

source of finance, the way in which finance is extending may differ in intrinsically volatile industries as compared with other industries. Banks may be, for example, prepared to extend credit lines to firms in intrinsically volatile industries but they may be less prepared than they would be when dealing with firms in other industries to expose themselves by extending large loans.

Conclusion

- 3.32 Using the financial sector as the means to obtain business capital has huge social benefits. It allows entrepreneurs without their own money to pursue their ideas. It allows capital-providers with different risk appetites, different inclinations towards putting in time, and different investment assessment skill to find investment opportunities that match their needs. In this way society gets greater investment and hence greater output, more innovation and ideas, better social harmony, and greater social fairness.

Equity markets

- 3.33 Stock exchanges are an important source of funding used by corporations. The number of companies listed on the main European stock exchanges was over 12,000 in 2009.⁶⁴ Total value of share trading on the same exchanges in 2009 reached almost \$11tr. New capital raised on these stock exchanges (excluding Deutsche Börse and Luxembourg where the information is not available) was about \$327.4bn.⁶⁵ Further to this, investments by European private equity and venture capital firms amounted to €73.8bn in 2007.⁶⁶
- 3.34 As of December 2009 the main European stock exchanges listed over 12,000 companies with a total market capitalization of £8.4tr. The table below disaggregates listed firms and market capitalization for several stock exchanges. In 2009, over 500m trades with a turnover of £5.3tr were carried out on these exchanges.

⁶⁴ Here we refer to BME (Spanish Exchanges), Borsa Italiana, Deutsche Borse, Irish Stock Exchange, London Stock Exchange, Luxembourg Stock Exchange and NYSE Euronext.

⁶⁵ Federation of European Securities Exchanges and World Federation of Exchanges

⁶⁶ European Private Equity and Venture Capital Association

Table 3.2: Number of listed companies and market capitalization

Exchange	Number of companies with listed shares	Market Capitalization (billions €)
BME (Spanish Exchanges)	3,472	1,000
Borsa Italiana	296	457
Deutsche Börse	783	901
Irish Stock Exchange	64	43
London Stock Exchange	2,792	1,950
Luxembourg Stock Exchange	266	73
NYSE Euronext	1,160	2,000
TOTAL	12,240	8,405

*NYSE Euronext includes Amsterdam, Brussels, Lisbon and Paris

Source: Federation of European Securities Exchanges (FESE)

- 3.35 The table below shows the amount of funds raised on the selected stock exchanges in Europe in 2009. The first column represents funds raised through initial public offering (IPO) of newly listed firms. The second column represents funds raised by already listed companies. These companies can either issue new shares (capital increase) or they can sell already issued shares (sale). According to the table below companies raised almost €170bn on the main European stock exchanges.

Table 3.3: Investment flows (€m)

Exchange	Newly Listed Companies (IPO)	Already Listed Companies	Total
BME (Spanish Exchanges)	1,372	14,294	15,666
Borsa Italiana	160	18,562	18,722
Irish Stock Exchange	8	2,098	2,106
London Stock Exchange	2,541	90,976	93,517
NYSE Euronext*	397	31,916	32,313
TOTAL	11,832	157,883	169,717

*NYSE Euronext information is from 2010

Source: FESE

- 3.36 The information in the table above includes all sectors and all firms (domestic and foreign). Using the Bloomberg database we obtained information on all public offerings in 2009 for domestic firms by sector.

Table 3.4: Investment flow by sector (€m)

Exchange	Amount raised	Amount raised by domestic firms	Amount raised by domestic non-financial firms
Paris	1,755	1,755	1,387
Xetra ⁶⁷	5,235	5,125	4,976
Dublin	139	139	139
Borsa Italiana	136	128	120
London	47,235	43,995	10,102
Luxembourg	1,942	-	-
Amsterdam	6,200	4,060	1,084
Madrid	2,648	2,648	1,980

Source: Bloomberg and Europe Economics analysis

3.37 The above analysis includes only publicly listed companies. Other companies also obtain funds from private equity and venture capital firms. In 2007 European private equity and venture capital firms invested almost €74bn.⁶⁸

Bond markets

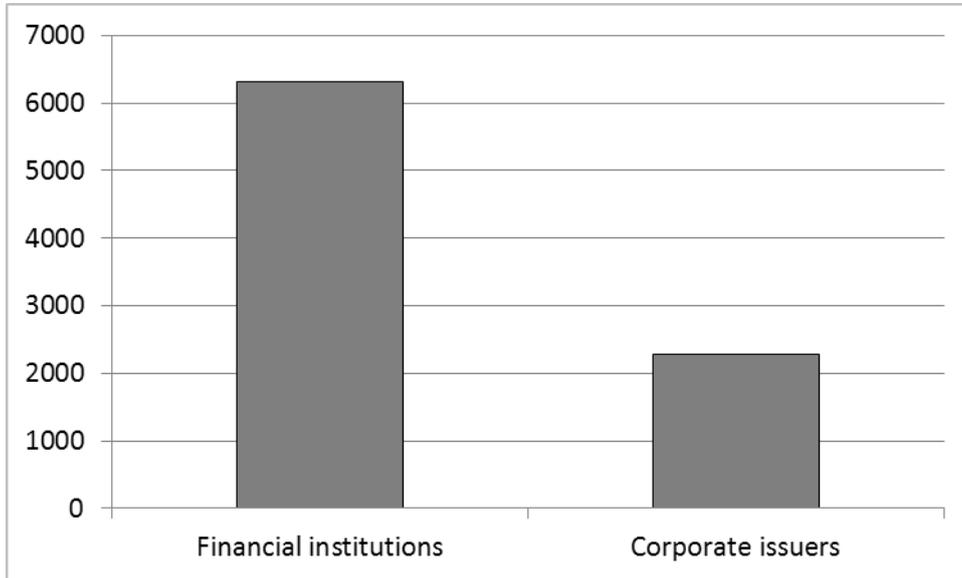
3.38 Bond markets are an inherent part of financial markets and a very important source of funding for companies or governments. In terms of total debt outstanding, European corporations raised a total of \$23.4tr as of December 2009.⁶⁹ This debt was raised by both financial institutions and non-financial corporates on both international and domestic markets. The disaggregation between corporates and financial services for domestic debt securities can be seen in Figure 3.1.

⁶⁷ Xetra is an electronic securities trading system based in Frankfurt, Germany. It was created for the Frankfurt Stock Exchange and is operated by Deutsche Börse.

⁶⁸ European Private Equity and Venture Capital Association

⁶⁹ Data gathering and analysis in the context of the MiFID review, Pricewaterhouse Coopers, July 2010

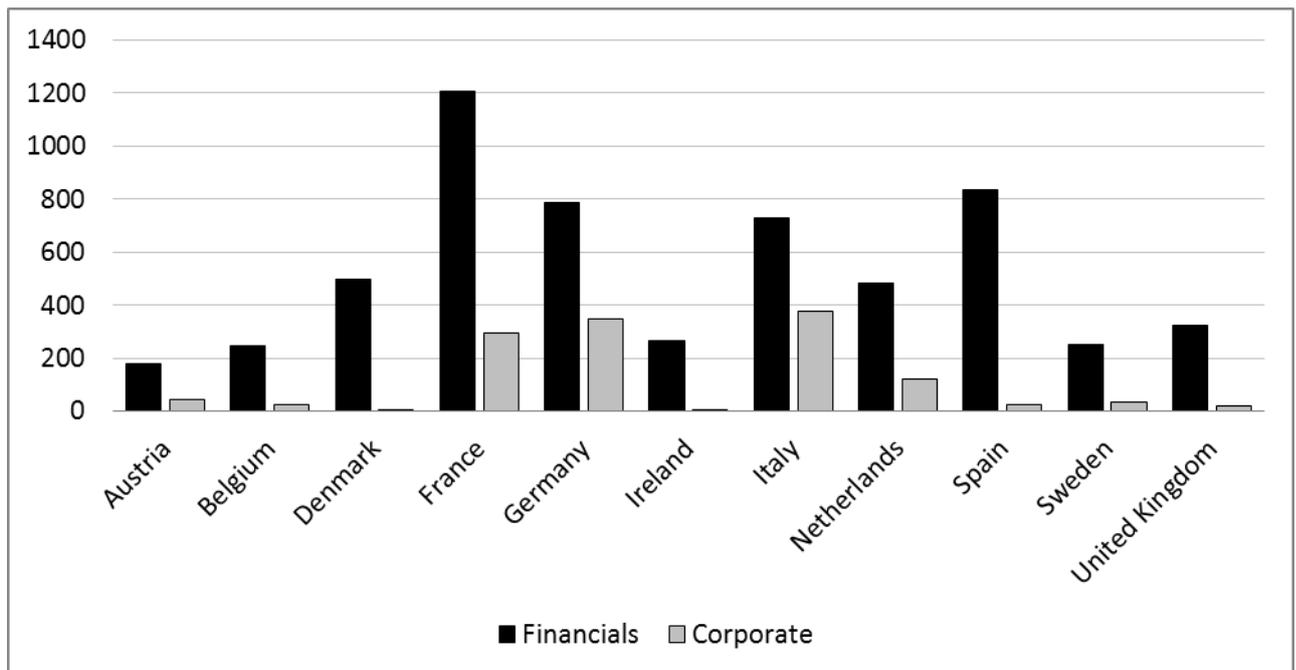
Figure 3.1: European bond market (billions \$)



Source: PWC report

3.39 The figure below shows domestic debt securities to financial and non-financial corporations by country. In total, domestic debt markets allowed non-financial companies to raise about \$2.3tr as of December 2009.

Figure 3.2: Domestic debt securities by country as of Sep 2010 (billions €)

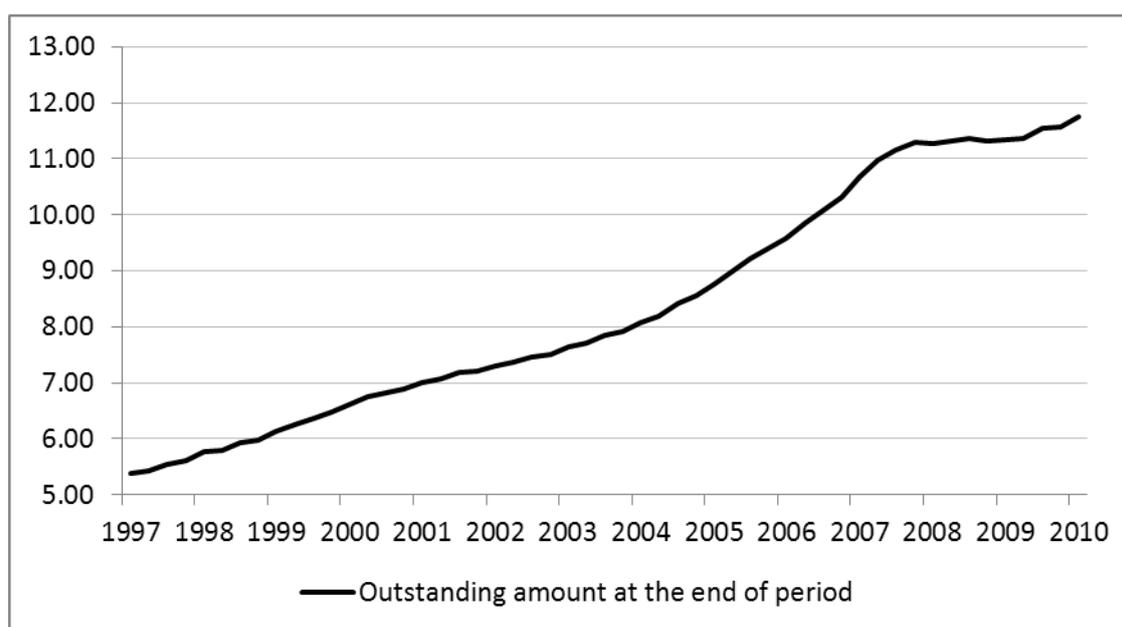


Source: Bank for International Settlements quarterly review

Bank loans

3.40 Figure 3.3 shows the development of outstanding amount of loans from credit institutions to non-monetary financial institution in Euro area since 1997.

Figure 3.3: Bank loans outstanding (tr €)



Source: European Central Bank

3.41 In terms of domestic loans, the table below presents information on outstanding corporate bank loans to non-financial domestic corporations obtained from the European Central Bank (ECB) and central banks of individual states.⁷⁰

⁷⁰ As the numbers come from different sources they may not be directly comparable due to different definitions.

Table 3.5: Corporate bank loans to non-financial domestic corporations– selected states (2009)

	Outstanding amounts (billions €)
Germany	936.7
France	780.8
UK	562.1
Netherlands	331.7
Italy	868.7
Spain	897.5
Ireland	92.4

Source: Central banks and European Central Bank (ECB)

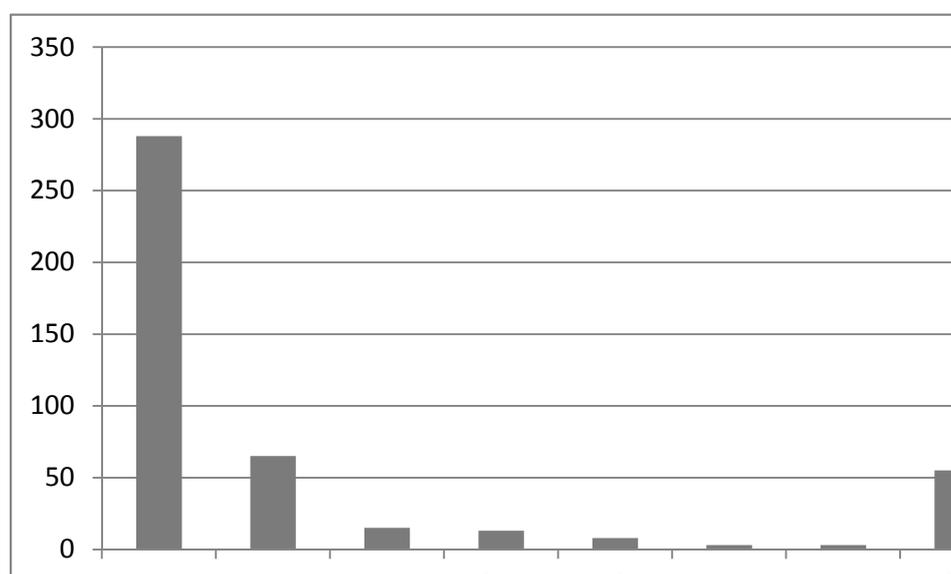
3.42 In 1964 the private, non-financial, corporate sector deposited 8 per cent of GDP with banks and building societies and borrowed 3 per cent of GDP. Their borrowings increased to 35 per cent of GDP in 2010 and deposits to 17 per cent of GDP in 2010. Wholesale finance bridged the ‘customer funding gap’ that developed over this period and extended more funding to businesses.⁷¹

Private Equity

3.43 Private equity is another source of finance to businesses. This is most developed as a source of finance in the US. However, various European jurisdictions are developing as centres of private equity activity. While this development has been impeded by the financial crisis, an increasing proliferation of financing models in Europe increases the financing options open to European business. Private equity funds raised in various jurisdictions are shown in the figure below.

⁷¹ Figures taken from Adair Turner’s speech to Cass Business School, 17 March 2010

Figure 4.4: Private Equity funds raised in 2008 (\$bn)



Source: TheCityUK, *Private Equity 2010*

Effects of financial development on innovation

- 3.44 International financial centres can provide funding not only for domestic companies but also for companies located abroad and thus they increase the number of funding sources from which companies can choose.
- 3.45 Here we provide some quantification of the potential impact of financial development on innovation. Higher GDP growth, associated with the financial development of a country (and the existence of an important financial centers is a key element of this), might be related to more efficient and developed financial sectors encouraging innovation. Academic papers that have established a positive link between finance and innovation. A very recent study on this issue shows that of Benfratello et al. (2008)⁷² who found that the local development of the banking sector (measured by the density of bank branches) positively affects the likelihood that firms engage in process innovation and carry out R&D activity, particularly if firms are small, active in high tech sectors and in sectors more dependent on external finance.
- 3.46 The effect is economically significant: if we go from the first to the third quartile of banking development in the Italian provinces (i.e. from 0.305 to 0.533 branches per 1000 thousands inhabitants) the likelihood of firms to engage in process innovation is increased by almost 6 per cent. Obviously there are issues with extrapolating a figure from one

⁷² Benfratello L., Schiantarelli F. and Sembenelli A. (2008), "Banks and Innovation: Microeconomic Evidence on Italian Firms", *Journal of Financial Economics*, 90, pp. 197-217.

study based on an Italian sample to the whole of Europe (e.g. different countries might have different financial structures, more or less based on banking, etc.) Figures reported in Benfratello et al. (2008)⁷³ would suggest that if we moved from the first quartile at the EU level (i.e. similar to Sweden or Slovakia, with a density of 0.19) to the third quartile (i.e. the case of Germany, with a density of 0.48), the likelihood that a firm undertakes process innovation might rise by approximately 7.5 per cent.

- 3.47 Not only is there empirical evidence that the development of the banking sector might spur innovation; in the recent years there have been a growing number of studies that have claimed the importance of private equity companies (and in particular venture capital funds) in boosting innovation, because they tend to provide equity finance disproportionately to young and small companies that operate in more innovative and risky sectors that traditional bank operators cannot or do not want to target. Although a consensus on the magnitude of the effect of venture capital on the likelihood of innovation has not yet emerged (because venture capitalists are very good at targeting "good" companies that perhaps could have innovated anyway), a very influential study (Kortum and Lerner, 2000)⁷⁴ found that one dollar of venture capital funds is from 1.5 to 3 times more effective in stimulating patenting than one dollar of corporate R&D.
- 3.48 Europe Economics (2009)⁷⁵ used this estimate together with other estimates taken from the academic literature on the relationship between R&D expenditure and patents taken out at the firm level and between patenting and Total Factor Productivity (TFP), to derive an estimate of the relationship between venture capital investments and TFP. Europe Economics (2009) estimated that a ten per cent increase in venture capital investments might increase TFP of venture capital backed firms by between 1.5 and 3 per cent.⁷⁶ In 2008, the investment of private equity firms⁷⁷ in Europe amounted to about €54bn. Now, the existence of a large financial centre is key for the development of a thriving private equity sector: in fact, private equity firms require highly specialized and skilled employees and managers, and the existence of a large financial centre tends to increase the probability of finding such professionals (agglomeration externality).
- 3.49 Even if only half of the funds raised each year could be raised solely because of the existence of London and the few other large EU financial centres, in 2008 we would have had, without these financial centers, about €27bn of private equity funds less than we actually have had. This in turn could have reduced the TFP level of private equity backed firms by between 7.5 and 15 per cent. Although the actual number of private equity backed firms is not very large (about 6,000, according to Europe Economics (2009)), the

⁷³ Table 7, column 1 (a lower bound estimate, if compared with other and probably more robust figures reported in the paper).

⁷⁴ Kortum S. and Lerner, J. (2000), "Assessing the Contribution of Venture Capital to Innovation", *Rand Journal of Economics*, 31, 4, pp. 674-692.

⁷⁵ Lilico A., MCall I. and Conti M. (2009), "Ex-Ante Evaluation of the Proposed Alternative Investment Managers Directive", Report prepared by Europe Economics for the European Parliament's Committee on Economic and Monetary Affairs.

⁷⁶ See Europe Economics (2009), pp. 43 for the computations involved and for the caveats to this estimate.

⁷⁷ Venture capital firms are a subset of private equity firms and have the characteristics of targeting especially very young firms. In this follows we assume that they are very similar to other private equity firms.

impact on the aggregate economy would still be important, because the amount of corporate R&D carried out by EU27 firms in 2008 was about €151bn (Eurostat), i.e. about 3 times the amount invested by EU private equity and venture capital firms.

Cross-border activities

Equity offering

- 3.50 While many companies issue shares on their domestic stock exchange a significant number make use of international financial centres to raise funds abroad.
- 3.51 Many firms decide to list their shares on several stock exchanges. Multiple listings are undertaken by firms for various reasons, such as, they are thought to support the domestic share price and assist with international expansion. The number of domestic and foreign firms on main European exchanges is reported in the following table.

Table 3.6: Number of foreign listed firms

Exchange	Number of companies with listed shares	
	Domestic	Foreign
BME (Spanish Exchanges)	3,435	37
Borsa Italiana	291	5
Deutsche Börse	704	79
Irish Stock Exchange	55	9
London Stock Exchange	2,179	613
Luxembourg Stock Exchange	30	236
NYSE Euronext	990	170

Source: FESE

- 3.52 While multiple listings occur, shares are often issued only on one exchange. This is usually the domestic exchange of the firm. It should be noted, however, that that is not always true of firms in general.
- 3.53 In quantifying the volume of funds raised internationally through equity offerings we have to distinguish between equity offerings made internationally and international listings. Using the Bloomberg database we identified companies that are headquartered in one EU member state and list their common stocks abroad on one of the main EU stock exchanges.

3.54 We then took the foreign listed firms in the table above and researched the volume of funding which they have raised internationally through all IPOs and SPOs from 1980 onwards (the oldest equity offering in Bloomberg database took place in 1981).⁷⁸ Our results are presented below.

Table 3.7: Equity offering summary

	Amount of funds raised by non-domestic firms (millions of €)		Number of offerings	
	All sectors	Non-financial sectors	All sectors	Non-financial sectors
Amsterdam	4,654	3,154	6	5
Dublin	122	122	4	4
Frankfurt	8,169	5,248	21	15
Paris	41,083	40,893	16	12
London	9,319	8,048	143	131
Luxembourg	-	-	0	0
Milan	368	368	3	3
Madrid	2,518	2,518	1	1

Source: Bloomberg and Europe Economics analysis

3.55 The number of equity offerings was highest in London, almost seven times higher than in Frankfurt. Nonetheless, most funds have been raised in Paris. Equally, £35bn of the £41bn raised in Paris was raised in a single equity offering in 1996.⁷⁹

3.56 Funds raised internationally through IPOs and SPOs can be disaggregated by country. This is shown in the table below.

⁷⁸ It should be noted that all the above analysis only includes companies that are currently listed on foreign stock exchanges. Companies that were listed, issued equity abroad and then delisted their shares are not included in the analysis and so the total amount of funds raised through cross-border equity offering is likely to be higher.

⁷⁹ United Anodisers SA, a Belgium based company, raised over €35bn on Paris stock exchange in 1996 (Bloomberg database).

Table 3.8: Funds raised by country (millions of €)

	AT	BE	CY	FI	GR	IE	IT	LU	MT	NL	UK	CEE*
Amsterdam	-	1,500	-	-	-	-	-	3,090	-	-	65	-
Frankfurt	786	1,540	-	-	-	-	-	1,246	-	2,867	60	1,671
Paris	-	35,344	-	-	-	-	18	212	-	5,500	-	-
London	-	650	714	505	234	4,247	83	557	117	2,122	-	11
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-
Madrid	-	-	-	-	-	-	-	-	-	2,518	-	-

* CEE stands for Central and Eastern Europe

Source: Bloomberg and Europe Economics analysis

3.57 The London stock exchange is the most popular foreign stock exchange both in terms of number of foreign public offerings and number of countries from which foreign companies come from. In contrast, none of the foreign listed companies issued shares on Luxembourg stock exchange. Luxembourg plays a more important role in relation to bonds, as we discuss below.

3.58 In total companies raised €66.2bn on cross-border equity offerings of which over €60.3bn was raised by non-financial companies. However, the above analysis includes only public offerings and it does not include sales of already issued shares. Consequently the total cross-border benefits to foreign companies are likely to be higher.

Case Studies

3.59 All of the companies covered in the case studies are listed on at least one stock exchange. Larger companies often take advantage of multiple listing on several European and/or non-European stock exchanges. International financial centres allow companies to list their shares and thus obtain funds from equity offerings. Additionally, the underwriting of shares is more efficient as companies can choose the best underwriter.

3.60 The table below provides a list of stock exchanges where companies covered in our case studies list common stocks. The table is not exhaustive as many companies also allow their shares to be traded on several multilateral trading facilities or other trading platforms. Non-European exchanges are not included but several companies are also listed on major world stock exchanges.

Table 3.9: Equity listing

Company	Sector	Stock exchange
Deinove	Pharma/biotech	Paris, Frankfurt
UCB	Pharma/biotech	Brussels, German SE
GlaxoSmithKline	Pharma/biotech	London, German SE
Benetton	Retailer	Milan, German SE
Ahold	Retailer	Amsterdam, Milan, German SE
Unilever	Retailer	Amsterdam, London
Renault	Car manufacturer	Paris, Milan, German SE
Daimler	Car manufacturer	Milan, Bucharest, German SE
Volvo	Car manufacturer	Stockholm, German SE
EDF	Energy	Paris, German SE
Iberdrola	Green manufacturer	Madrid, German SE
KTG Agrar AG	Agribusiness	German SE
ZT Kruszwica S.A.	Agribusiness	Warsaw

German SE stands for German stock exchanges including Frankfurt, Stuttgart, Berlin and others

Source: Bloomberg and Europe Economics analysis

- 3.61 While multiple listing is very common among the companies, issuing new shares often happen only on a limited number of stock exchanges, often including the domestic one.
- 3.62 Unlike issuing corporate bonds, equity offering is not a regular financial operation for the companies. Issuing new shares is a complex process requiring the expertise of financial service providers. Underwriters in international financial centres compete with one another to meet the needs of issuing companies.
- 3.63 Several notable examples of equity offerings among companies covered in our case studies are listed below:
- (a) Invest Securities, a financial services group offering services to small and mid-sized companies helped to raise €12m in the IPO of Deinove on Paris Stock Exchange. Together with €2.35m from Truffle Capital, a French based venture capital firm, the company obtained enough financial resources to cover the needs of its R&D programmes for 3 years; allowing the company's 20 employees, including top researchers, to continue the development and commercial exploitation of innovative technological processes for the production of biofuels.
 - (b) In 2006 UCB, a Belgium company listed on Brussels stock exchange issued more than 43 million new shares to serve as stock components for the purpose of the voluntary take-over offer of Schwarz Pharma in Germany.⁸⁰ This was the largest

⁸⁰ Schwarz Pharma Annual Review 2006

acquisition in the firm's history and it helped UCB enrich its range of products and enter new fields such as Parkinson's disease. New products in advanced late-stage development from Schwarz Pharma further complemented UCB's expertise in the field of central nervous systems and thus enhanced the company's sales force's productivity.

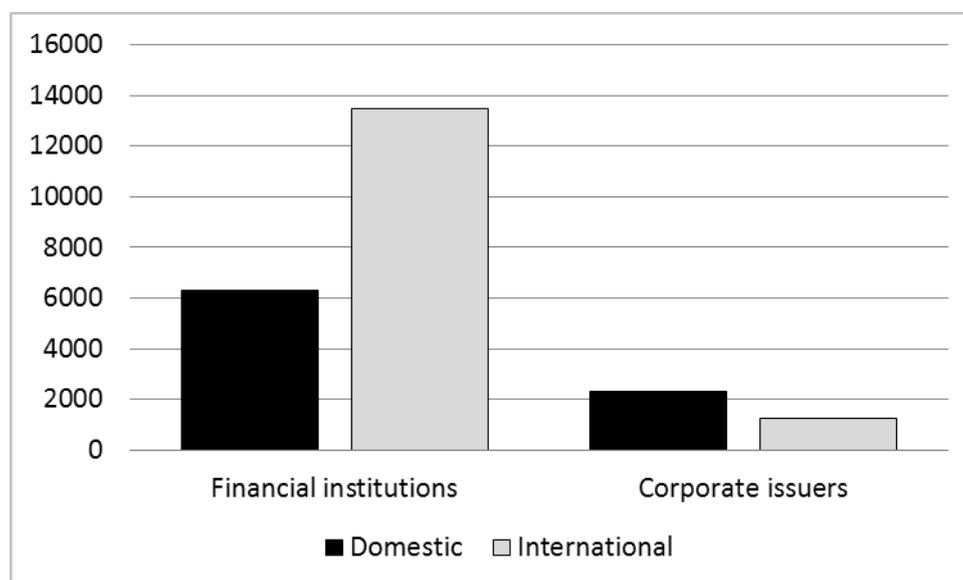
- (c) Iberdrola Renovables raised almost €4.5bn on Madrid Stock Exchange in December 2007 which was one of the largest IPOs that year. Due to its size, a number of financial companies were involved including ABN Amro, HSBC, Societe Generale, Dresdner Bank, Credit Suisse, Santander, JP Morgan and others. Earlier in the same year Iberdrola acquired Scottish Power Renewable Energy Holding Ltd, which in turn owned renewable energies in the UK and the US, gas storage, electricity and gas supply, and thermal electricity generation in the US. Following this large acquisition, the purpose of the capital increase carried out in December was to reduce the company's level of indebtedness in order to further finance its expansion plan.⁸¹ Furthermore, the company believed that the initial public offering would help to:
- (i) widen its shareholder base
 - (ii) provide access to the capital markets (including debt instruments) which could help in obtaining financing in the future
 - (iii) boost the company's prestige, transparency and brand image as a result of being a listed company⁸²

Corporate bonds

3.64 In terms of international debt securities, financial institutions raised more than twice as much on the international market than on the domestic market. Non-financial corporations raised about one third, almost \$1.3tr, of their funds internationally with the rest raised on domestic markets. However, international debt markets are dominated by financial institutions that raise about €13.5tr. This can be seen in the figure below.

⁸¹ In 2008 the company expanded in the United States, acquiring assets with a final value of over \$8bn.
⁸² Annual report 2007

Figure 3.4: International and domestic debt securities (outstanding as of December 2009)



3.65 The financial centres included in our study account for a majority of internationally (but also domestically) listed bonds as can be seen in the following table. Table 3.10 shows that Luxembourg is especially important for international debt together with Deutsche Börse and Irish Stock Exchange. While London is often used for domestic bond listing its significance internationally is much smaller than in equity markets.

Table 3.10: Bond listing

Exchange	Domestic Non Public	International
BME (Spanish Exchanges)	4,102	27
Borsa Italiana	262	356
Deutsche Börse	11,830	12,449
Irish Stock Exchange	6,682	17,592
London Stock Exchange	9,241	6,071
Luxembourg Stock Exchange	0	30,804
NYSE Euronext	n/a	3,371
TOTAL	41,482	72,522

Source: FESE

Case Studies

3.66 Companies often issue corporate bonds on a number of different exchanges and/or in various currencies. For example, Unilever issued five new bonds in 2000 in three different currencies with Deutsche Bank, HSBC and BNP Paribas as book runners. The table below shows upon which exchanges the companies in our case studies have their

bonds traded. This list is not exhaustive but clearly shows companies often issue corporate bonds on foreign stock exchanges.

Table 3.11: Bond listing

Company	Stock exchange
UCB	Frankfurt, Dusseldorf, Luxembourg
GlaxoSmithKline	Frankfurt, London
Unilever	London, Frankfurt
Renault	Luxembourg, Dusseldorf, Milan, Paris
Daimler	Luxembourg, Milan, German stock exchanges
Volvo	Luxembourg, German stock exchanges
EDF	Paris, Luxembourg, Frankfurt
KTG Agrar AG	Stuttgart

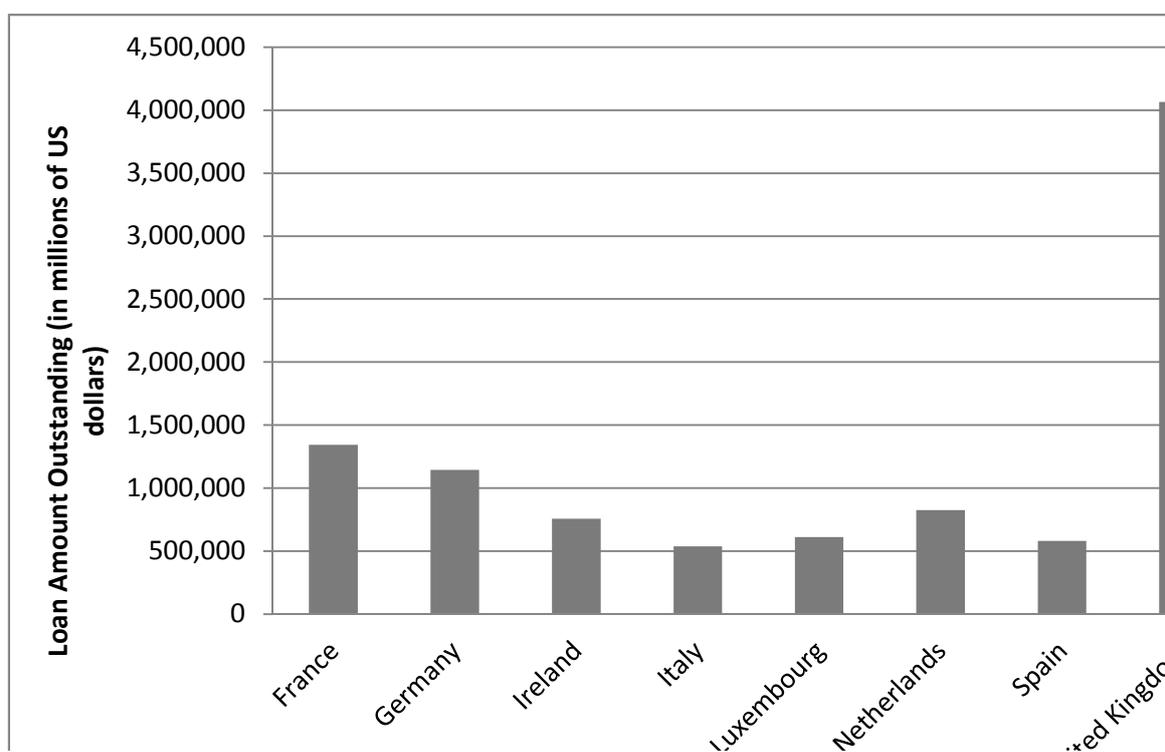
Source: Bloomberg and Europe Economics analysis

Bank lending

3.67 Large volumes of cross border bank lending occur between advanced economies. International financial centres are fundamental to these activities.

3.68 The table below shows the amounts outstanding in external bank loans by each of the states within which the eight cities are found.

Figure 3.5 Amounts outstanding in external bank loans in the states of the eight cities

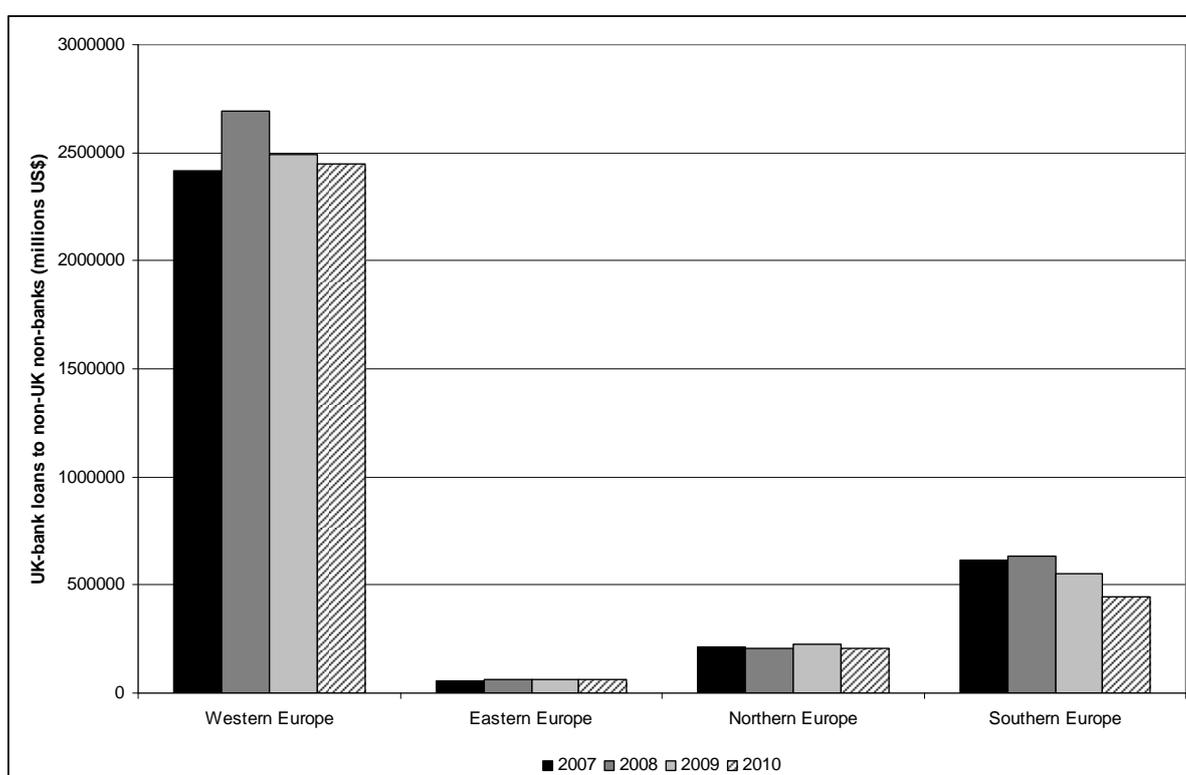


Source: BIS

3.69 The table above shows that of the states of the eight cities the banks of the UK are lending by far the most externally. London is, obviously, the pre-eminent banking centre within the UK and, therefore, the external lending of UK banks is largely driven by activities within London.

3.70 This bank lending from London is particularly important to the economies of Western Europe.⁸³ This is illustrated by the figure below that shows UK banks loans to non-UK non-banks by European region over 2007 to 2010.

Figure 3.6: UK bank loans to non-UK non-banks, by region, 2007-2010

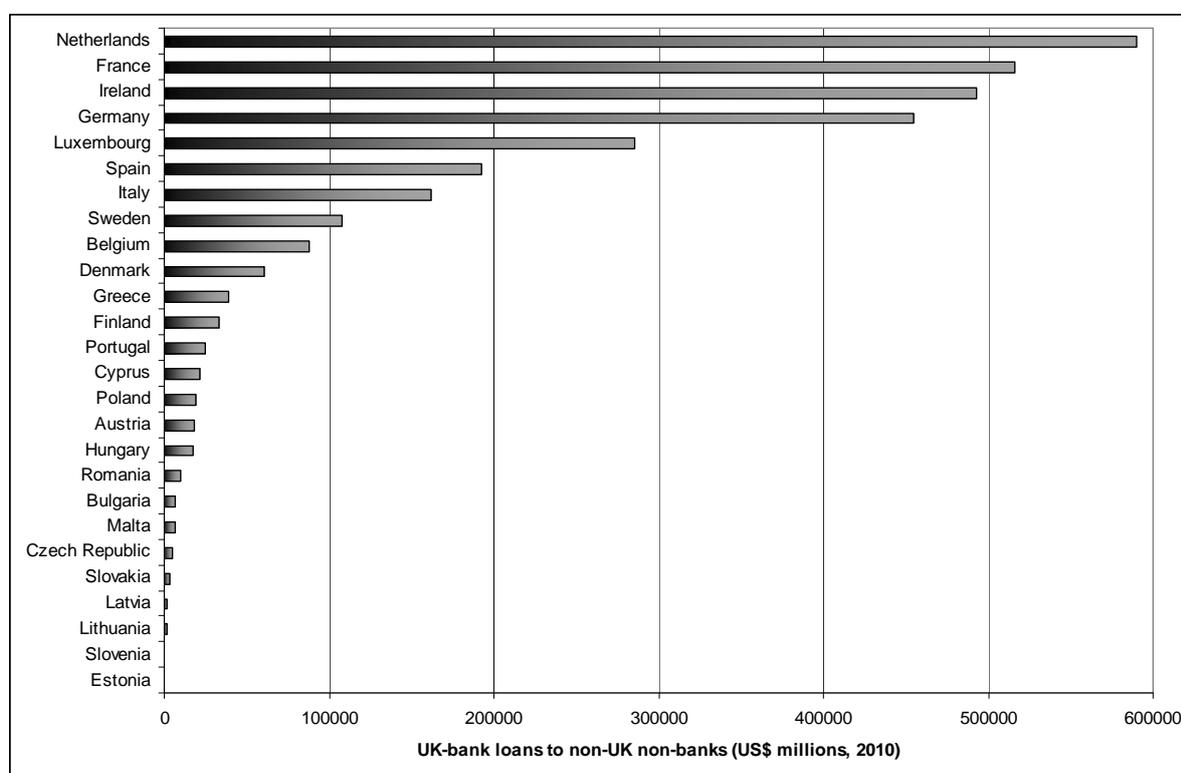


Source: Bank of England

3.71 The figure above shows a slight fall-off in external lending by UK banks following the financial crisis but not a substantial one. This indicates that lending by London banks is an important source of funding to businesses across Europe. The figure below, which shows lending by UK banks to non-UK non-banks by EU member states, shows in relative terms how important this funding is to the various economies of Europe. It is most important to the Netherlands, France and Ireland but the figure shows that lending by London banks is supporting economic activity across the EU.

⁸³ Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands and the UK.

Figure 3.7: UK bank loans to non-UK non-banks, by Member State, 2010



Source: Bank of England

Cash-flow Management

- 3.72 Even highly capital-solvent businesses can face temporary cash-flow problems. The costs and revenues of firms vary from period to period and may increase or decrease suddenly. These sudden shifts can expose firms to cash flow problems. Their revenues may temporarily become insufficient to finance their operations. Their costs may at an unanticipated juncture for a period of time exceed their revenues. In these circumstances, the extension of liquidity, such as credit lines, by financial institutions enables firms to manage the risks involved with short term liquidity issues.
- 3.73 When such issues are sufficiently temporary that they do not require new capital injections, they might be managed with overdraft facilities or credit lines.
- 3.74 Such liquidity provision has great social benefits. Without it, perfectly viable, well-run firms that either face temporary issues or bad luck would either have to shut down, or take out expensive and unnecessary loans, or their owners would have to surrender a share of the business. This would create additional barriers to firms setting up in the first place, and greater volatility in employment (as workers in firms that shut would be fired).

- 3.75 In particular, with the absence of liquidity provision by the financial sector, there would be fewer firms operating in risky sectors susceptible to cash-flow issues.

Cash-flow management by the firms in our case studies

- 3.76 The firms covered in our case studies have a range of liquidity requirements and means of managing these requirements.
- 3.77 Some firms discipline themselves by applying rules to manage their cash flow. For example, Benetton does not invest more than 10 per cent of its liquidity (except for bank deposits with a term of under two weeks) with any one issuer or counterparty and imposes a ceiling of €20m per issuer and/or counterparty with a rating lower than AA (or A in the case of sovereign issuers). Forecasting is also used to manage cash flow. Firms such as Unilever apply short and long term cash flow forecasts.
- 3.78 Some large firms have considerable resources available to them to manage cash flow. For example, at the end of 2009, EDF's total liquidities were €11.7bn and available credit lines were €10bn. GSK also manages its borrowing requirements through a sophisticated portfolio of long-term bonds and short-term financing to meet liquidity requirements.
- 3.79 Seasonality in demand can make cash-flow management important. ZT Kruszwica, for example, has accessed banks loans and this may be to accommodate the seasonality in their demand caused by most purchases of Polish rapeseed occurring in July and August.
- 3.80 UCB is a very different kind of firm to ZT Kruszwica and has very different means of managing cash flow. In 2009, UCB had three sources of liquidity available. They held €486m in cash and cash equivalents, €2m in marketable non-equity securities and €1,056m in unutilised commercial facilities. These assets have varying degrees of liquidity. Cash and cash equivalents are likely to be more liquid than the other assets, with the unutilised commercial facilities being the least liquid. In spite of their varying degrees of liquidity, however, all of these assets depend upon financial services of some sort. The payments system is required for cash to have the liquidity and value that it does. Marketable non-equity securities have to be traded on security markets to be converted into whatever form UCB require for them to fulfil their operations. This is more speedily and efficiently done than would otherwise be the case in the context of the kind of international securities markets that are hosted by international financial centres. Finally, unutilised commercial facilities also have to be traded on the relevant markets to be converted into whatever form UCB require for them to fulfil their operations. This is likely to be a less speedy process, and hence the assets are less liquid, than in the case of marketable non-equity securities. Nonetheless, international financial centres enable such facilities to be sold more speedily than would otherwise be possible.
- 3.81 The costs and revenues of firms vary from period to period and may increase or decrease suddenly. These sudden shifts can expose firms to cash flow problems. Their revenues may temporarily become insufficient to finance their operations. Their costs may at an unanticipated juncture for a period of time exceed their revenues. In these circumstances, the extension of liquidity, such as credit lines, by financial institutions enables firms to

manage the risks involved with short term liquidity issues. Credit lines form, for example, form a considerable part of the €6.5bn of the liquidity funds available to Renault.

Insurance and Risk Management

Risk-management and insurance

3.82 In addition to dealing with liquidity issues, financial institutions enable firms to manage their risks in the following ways:

- Enabling hedging
- Providing insurance

Hedging

3.83 Firms are exposed to risk in the form of movement in their costs and in their demand. Increases in the price of petroleum, for example, increase the costs for plastics manufacturers and reduce demand for the products of car manufacturers. Financial markets enable them to hedge against both of these kinds of risk. Movements in interest rates and in currencies can create similar risks, which firms can also hedge against in order to manage their risk exposure.

3.84 The use of financial markets by firms to hedge against currency and other risks prevents currency movements or other shifts (e.g. increased oil prices) from eroding profits. This encourages investment in sectors exposed to these risks, in particular international trade. In this way, the financial sector promotes growth and international competitiveness.

Insurance

3.85 Catastrophic risks, such as natural disasters, can destroy businesses. While in some instances businesses may prefer to self-insure, in respect of catastrophic risks efficiency gains are reaped by contracting with an insurance provider that is able to diversify risk.

3.86 Business insurance allows the pooling of risks to which businesses are exposed. This in turn makes it easier for businesses to manage risks to which they are exposed, reducing bankruptcies, and thereby facilitating investment in higher-risk sectors.

Use of international financial centres for risk management by firms in our case studies

3.87 We have identified various ways in which services provided by international financial centres assist the firms covered in our case studies to manage risk.

Currency risk

3.88 Many firms in our case studies are international and as such their revenues or funds are denominated in different currencies. Two types of currency risk are usually mentioned:

- (d) Transaction risk - the risk that exchange rates will change unfavourably over time.

(e) Translation risk - an accounting risk. Changes in the exchange rate over time will render a report inaccurate.

3.89 Almost all of the companies covered in our case studies appear to try to limit their risk exposure to transaction risk using financial derivatives to hedge their foreign exchange activities. For example, UCB uses forward contracts, foreign exchange options and cross-currency swaps to hedge certain committed and anticipated foreign exchange flows and financing transactions. Similar financial instruments are used, for example, by Volvo, Daimler and a number of the other large international companies covered.

3.90 Trading with derivatives requires exchange brokers, derivative exchanges and other financial services. International financial centres, thus, provide companies with opportunities to manage exchange rate risk which greatly assists companies with their international operations.

Interest rate risk

3.91 Variations in market interest rates influence the cost and revenue of funding and investment instruments, thus impacting the profitability of companies. Financial derivatives are again used by many companies to hedge against interest rate risks. For example, Volvo has standardised interest-rate forward contracts (futures) and forward-rate agreements. Most of these contracts are used to hedge interest-rate levels for short-term borrowings or investments. Other companies such as Benetton, Daimler, Renault, UCB and others all engage in derivative trading to hedge against exchange and interest rate risks.

Credit risk

3.92 This risk arises from transactions with banks like cash and cash equivalents, deposits and derivative financial instruments. To reduce the credit risk, companies usually limit their main activities with a limited group of banks that have secure credit ratings. Per bank, individual risk limits may be set based on its financial position, credit ratings, past experience and other factors. International financial centres reduce credit risk because companies have access to more banks and other financial institutions and can thus efficiently diversify their credit risk.

3.93 Some examples of the firms in our case studies behaving in these ways are:

- Global counterparty limits are assigned to each of GSK's banking and investment counterparties based on long-term credit ratings from Moody's and Standard and Poor's.
- To reduce the credit risk, Unilever has concentrated its main activities with a limited group of banks that have secure credit ratings.

- According to Volvo's credit policy, counterparties for investments and derivative transactions should have a rating of A or better from one of the well-established credit rating institutions.
- In the management of payment flows Renault manages counterparty risk through a rating system.

Other risks

3.94 Other types of risks are often related to specific sectors. Some examples:

- (f) Seasonality is a characteristic of agribusiness. Commodity futures exchanges are used by firms like KTG Agrar to protect themselves against unanticipated movements in the price of their products.
- (g) The industries of car manufacturing, energy and agribusiness industries are susceptible to commodity price risks. Companies such as EDF, Iberdrola S.A., and Renault hedge against commodity price risks using again financial derivatives.

Insurance

3.95 Insurance is another method of managing companies' risks. Small and mid-size companies often make use of commercial insurance coverage such as property or transport insurance, but large companies often manage certain risks within a company. For example, Ahold is self-insured for certain potential losses mainly relating to general liability, vehicle liability and property losses. Renault takes out insurance for high-impact low-probability risks while common risks that are statistically known and financially coverable, are provisioned by the group.

4 BENEFITS TO GOVERNMENTS

Direct Benefits

4.1 The key direct benefit to government is the tax revenue from the financial sector.

Tax

4.2 Tax contributions of the financial sector include corporate tax, employment tax and other tax such as VAT, as illustrated in the following table.

Table 4.1

City	Tax contribution (€billion)
Dublin	1.53
Frankfurt	0.27
London	28.71
Luxembourg	2.6

Source: Europe Economics data file

Note: In Dublin the tax contribution of the IFSC does not include VAT, but includes corporation tax, payroll taxes (direct) and taxes paid on salaries. In Dublin banking made the largest contribution to tax in 2009 (€576 million) followed by insurance (€339 million). In Luxembourg the financial industry contributes 25 per cent to total tax revenue, with banks contributing 11 per cent (€1,100 million) and insurance four per cent (€400 million) at the end of 2009.

Savings and Investments

4.3 There are a number of cases in which governments may have investment needs:

- (a) state savings funds, such as funded public sector pensions or a funded state pension scheme.
- (b) state insurance funds.
- (c) sovereign wealth funds (e.g. Norway).
- (d) Municipal authorities may have savings, especially following large sales (e.g. a major sale of local authority housing).

4.4 In addition to the rationales for saving and investing via the financial sector that applied for households, government savings are likely to be on such a large scale that it would not be feasible to identify specific borrowers of the funds, even if the government had the necessary assessment skills and time.

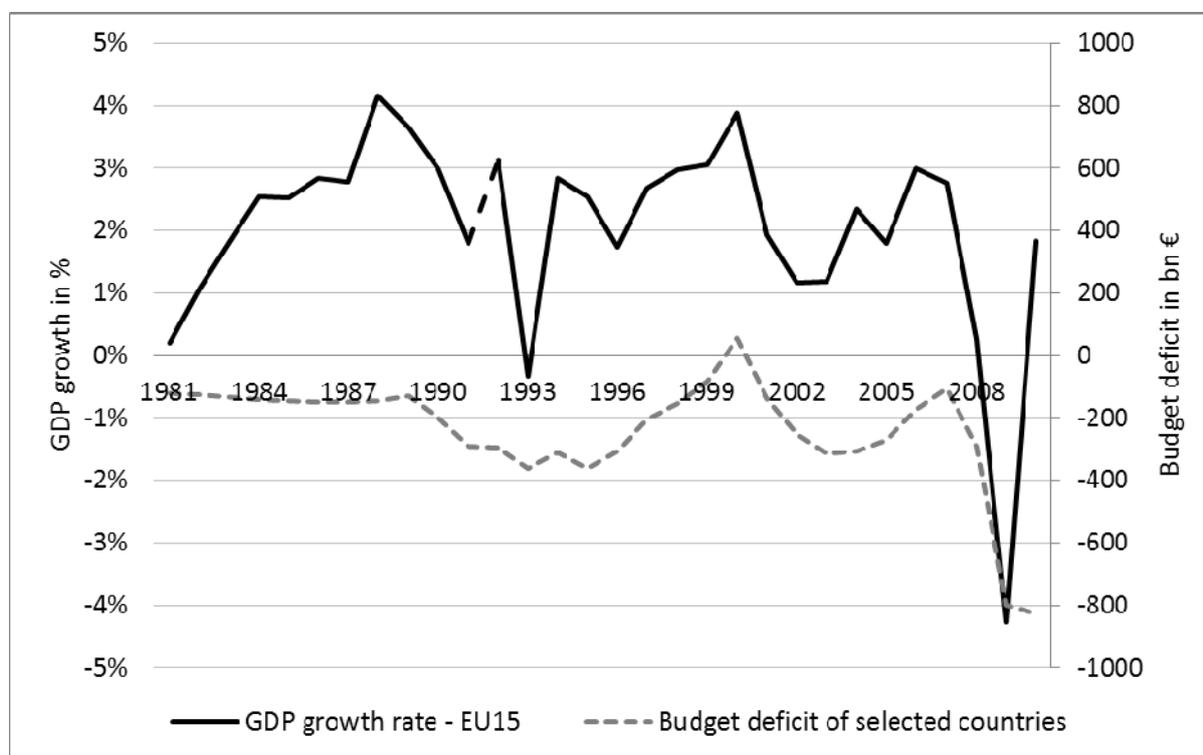
Loans and Other Capital-raising

4.5 The clearest use that governments make of the financial sector is in raising government debt. It would not be practical, in any large or medium-sized modern economy, for the

government to approach individual lenders to obtain funds. Instead, governments issue government bonds and raise other debt via savings banks (such as NS & I).

- 4.6 By issuing bonds, governments can smooth public spending and taxation so that there need not be either sudden tax rises, sudden spending cuts, or sudden (potentially inflationary) printing of money to fund government activity in an economic downturn. Such government smoothing of public spending can be seen in the following figure. Clearly, government spending increases in periods of low GDP growth, such as in the case of Europe in 1993, 2002, and recently 2008. On the contrary, periods with strong GDP growth, such as 1989, 2000 or 2007 show very small deficits or government surplus.

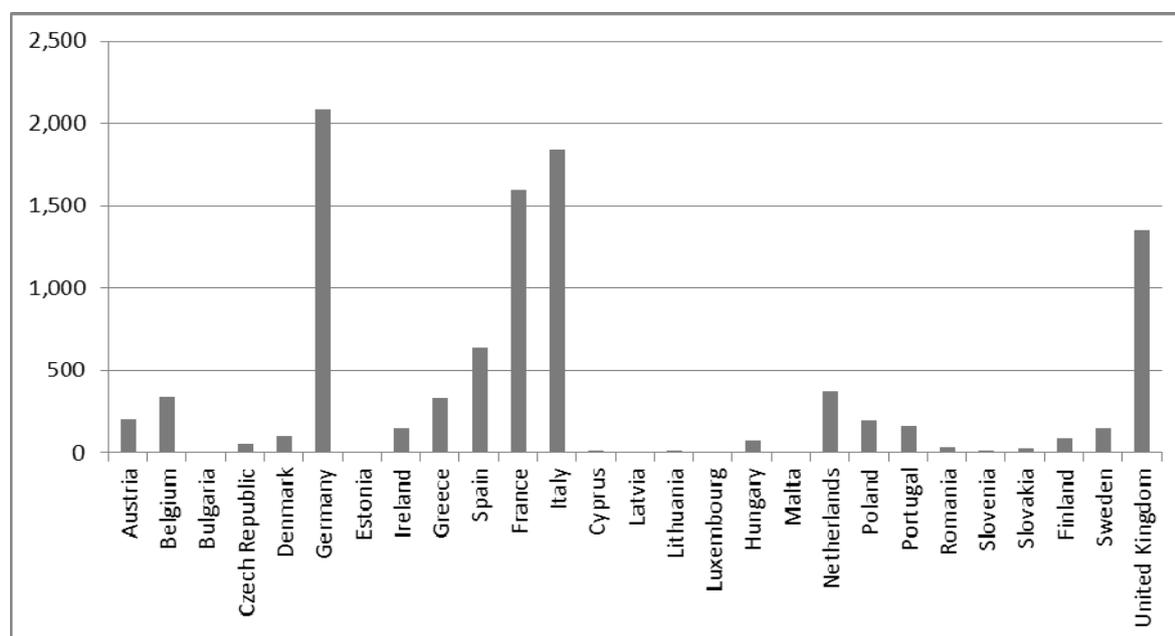
Figure 4.1: Government smoothing of public spending



Source: AMECO database

* There is a structural break in 1992 due to exclusion of West Germany

- 4.7 The governments of Europe hold considerable amounts of debt. If they were unable to do so they would be more constrained in the public services that they are able to provide. The table below shows the levels of government debt for most European states in 2010.

Figure 4.2: General government gross debt in Europe (2010, €bn)

Source: Eurostat

Bond finance in the eight cities

4.8 Bonds raised and listed in the eight cities are an important source of funding government debt. This is illustrated by the figure below that shows the number of government bonds listed in each of the eight cities and the amounts outstanding on these bonds.

Table 4.2: Number of government bonds listed in the eight cities and amounts outstanding on these bonds

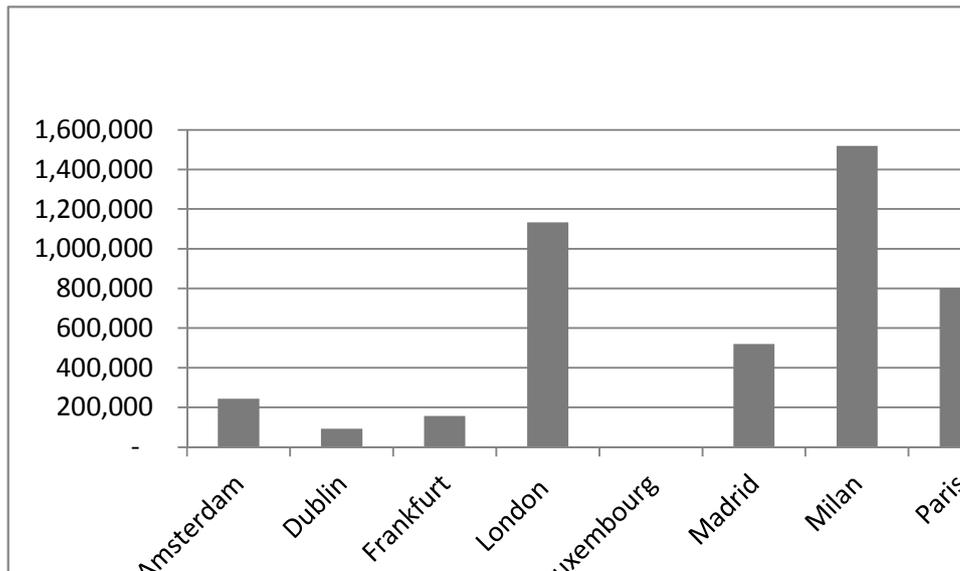
	Amount outstanding (millions of €)	Number of bonds
Amsterdam	245,420	88
Dublin	92,695	15
Frankfurt	330,061	183
London	1,177,708	300
Luxembourg	47,159	117
Madrid	521,169	68
Milan	1,520,221	121
Paris	804,602	256

Source: Bloomberg

Domestic financing of government

4.9 The figure below illustrates the value of bond financing by the states of the eight cities in the city within their state.

Figure 4.3: Bond funding raised domestically by governments of the eight cities (€m)

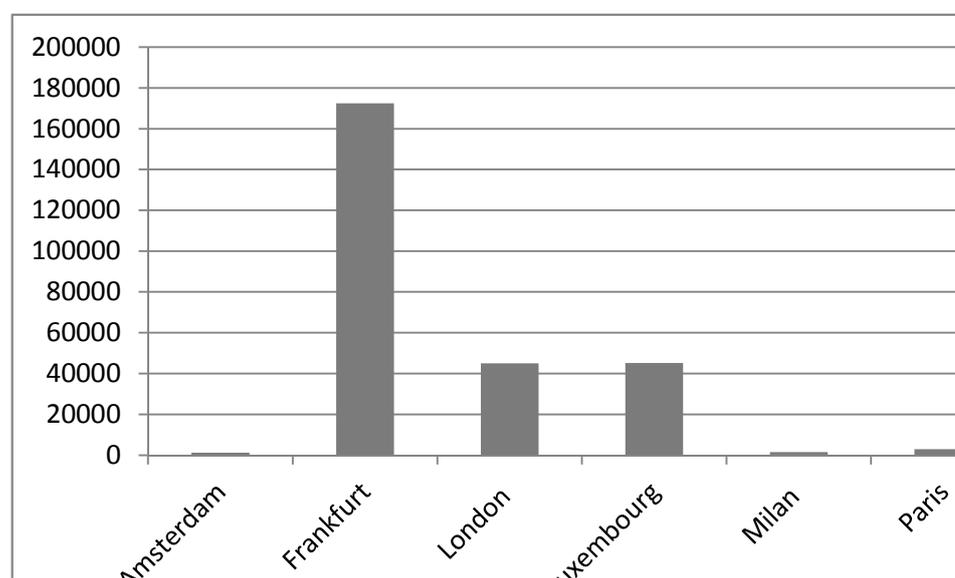


Source: Bloomberg

International financing of government debt

4.10 Some international financial centres specialise in raising bond funds issued on behalf of governments other than that whose jurisdiction they fall into. Others do not. No funds have been raised, for example, in Dublin and Madrid on behalf of governments other than the Irish and Spanish respectively. Relatively small amounts of bond funding are raised on behalf of governments other than the Dutch, French and Italian in respectively Amsterdam, Paris and Milan. This is illustrated in the figure below that shows the value of bond financing by the states other than that with jurisdiction over the relevant international financial centre.

Figure 4.4: Bond funding raised by non-domestic governments in international financial centres



Source: Bloomberg

- 4.11 Frankfurt, London and Luxembourg are the most important international financial centres for this form of activity. Some particularly striking instances of this are the following:
- The Swedish government has raised €14bn of bond finance in London.
 - The Italian government has raised €18bn of bond finance in Luxembourg.
 - The Austrian government has raised €89bn of bond finance in Frankfurt.
- 4.12 Governments are better able to finance their debt by having access to international bond markets, as well as their domestic bond markets. The Italian government, for example, may have raised €1,518bn of bond finance in Milan but has benefitted considerably from the ability to also raise bond finance in Luxembourg.

Interplay between private financial sector and government financing

- 4.13 In practice, the purchasers of government debt are often significant financial sector institutions such as pension funds or banks. This means that the financial sector provides mechanisms to combine the needs of governments to raise funds with the needs of households to save.
- 4.14 In addition, because government debt is openly traded in financial markets, such markets provide a transparent commentary on government programmes — e.g. the sustainability of their budget plans. This is not always comfortable for governments, but it is valuable for democracy, since the consequences of government actions become more visible to the public, leading to questions and increased accountability.

- 4.15 Related to this is the social value of speculation in government debt markets. Speculators try to find strengths or weaknesses in assets that others have missed and then exploit their informational or interpretational advantages to make money. For example, speculators might identify that the budget programmes of certain governments, which governments themselves believed, and that the prevailing market pricing implied, were robust and sustainable, were actually not sustainable and placed those governments at risk of default.
- 4.16 Now of course, by definition, such speculators have taken views (and then trading positions) that ran against the analysis and views of those governments. So it is natural that the government rejects this analysis and says that these speculators have it wrong. And of course sometimes they *will* indeed have it wrong. But sometimes the speculators will be right — after all, it is by being right that they make money. And when they are right they provide the enormous social service of exposing unsustainability early, whilst there is still some chance of its being rectified.

5 CONCLUSIONS

- 5.1 Financial services are of enormous social value. When Lord Turner and certain economists question whether some components of financial services are “socially useless”, doubtless they mean only to question the value of certain specific complex products, rather than the industry as a whole. But there is a risk that less sophisticated ears gain the impression that the finance sector, overall, is of questionable social value. There should be no such question: it is of huge value.
- 5.2 In this report we have rehearsed (and in some areas quantified) a number of its key benefits, in addition to the jobs, value added and tax generated by the sector itself:
- 5.3 The payments system and money are, in a modern economy, almost entirely facets of the financial sector. These make the exchange of goods enormously easier and more efficient.
- 5.4 Capitalism — the separation between providers of capital and those with entrepreneurial ideas and management acumen — is, in a modern economy, largely a reflection of the financial sector. Capitalism promotes social mobility (allowing those without wealth but with ideas to become wealthier), innovation (allowing new ideas to flourish that would otherwise be lost), and efficiency (allowing those with capital to gain greater returns).
- 5.5 Households use the financial sector to save and borrow, allowing them to obtain expensive goods and services that would otherwise be out of reach and to smooth consumption rather than being forced to cut back dramatically with every twist and turn of life. Families also insure themselves against disasters in which, though money may not always solve everything, it very often helps.
- 5.6 Businesses use the financial sector to invest (e.g. purchasing new companies), to borrow (e.g. to finance new plant and machinery), to manage cash-flow, and to manage business risks.
- 5.7 Governments use the financial sector, especially to borrow to fund public expenditure, keeping things going when tax receipts are temporarily low. Indeed, when the financial sector is more developed, economies grow more rapidly, generating additional tax revenue over-and-above the revenues of finance firms themselves.
- 5.8 The financial sector promotes trade in the European Single Market, providing loans, savings products and insurance across borders, bonds and bank loans for businesses in other countries, loans to governments of other member states, and job opportunities.
- 5.9 None of this is to say that there do not need to be changes to regulation and supervision in the financial sector. But in pondering such changes, policymakers should recognise the huge social value of the sector and the danger that mis-regulation might damage it.

APPENDIX: QUANTIFICATION OF ADDED GROWTH IMPACT OF FINANCIAL CENTRES

A1.1 In this appendix we provide some quantification of the impact of financial centres and financial development on growth using an approach similar to that adopted by Europe Economics (2005). In that study, Europe Economics adopted the estimates eventually published in Aghion et al. (2009)⁸⁴ to assess the impact on growth of the increase in financial development that could be brought about by the MiFID Directive.

A1.2 Aghion et al. (2010) estimate a relation between the average growth rate of per capita GDP in a panel of countries, and variables such as volatility of growth in per capita GDP and the level of financial development. Different specifications were tested. The baseline estimate could be expressed as in Equation (1) below:

$$GDPg = \alpha GDPVOL + \beta FINDEV + \varphi GDPVOL * FINDEV + \dots \quad (1)$$

A1.3 where $GDPg$ is the average growth of per capita income, $GDPVOL$ is the standard deviation of the rate of growth of per capita income, $FINDEV$ is a measure of financial development which was computed, following Levine et al (2000), as the credit by deposit money banks and other financial institutions to the private sector over GDP. $GDPVOL$ is the volatility of GDP measured as the standard deviation of each country GDP over the period 1995-2008 obtained from the AMECO database.

A1.4 From the equation above, the marginal effect of $FINDEV$ on $GDPg$, can be expressed as in Equation (2):

$$\frac{\partial GDPg}{\partial FINDEV} = \beta + \varphi GDPVOL \quad (2)$$

For small changes of $FINDEV$ and $GDPg$, could be re-expressed as:

$$\Delta GDPg = \Delta FINDEV * (\beta + \varphi GDPVOL) \quad (3)$$

A1.5 Although the AABM results are far from achieving consensus acceptance, they offer a way to model a longer-term potential impact from having an important financial centre in a country. Specifically, we might attribute the level of financial development of a country to the presence of an important financial centre. Information on two important parameters (β and φ) is taken from Table 6, column 1 of AABM (2009), which gives β and φ equal to 0.0144 and 0.52, respectively, while for $GDPVOL$ we considered the average volatility in

⁸⁴ Aghion P., Angeletos M., Banerjee A. and Manova K. (2010), "Volatility and Growth: Credit Constraints and the Composition of Investment", Journal of Monetary Economics, 57, 3, pp.246-265. Actually, Europe Economics used the estimates contained in the working paper version, which are slightly different from these reported in the published version and that we use in this report.

GDP per capita growth in each of Germany, France, UK, Italy, The Netherlands, Luxembourg, Poland, Greece, Portugal and Spain using data from 1994 to 2008 taken from the Ameco database.

- A1.6 We provide two estimates of the impact of the presence of the financial centers. The first is a "within country" estimate: in other words, we assess the increase in financial development over the period 2000-2008 for each country, and we assess, using the parameter estimates of the Aghion et al. (2009) paper, the impact of the higher financial development on GDP growth rates. The second is a "between country" estimate, as we measure how much less financially developed countries have been losing in terms of GDP growth with respect to a counterfactual situation characterized by the highest level of financial development in the sample and, conversely, how much the most financially developed countries have been gaining from being more financially developed (where the counterfactual is the level of financial development of the country with the lowest private credit to GDP ratio).
- A1.7 Table A1.1 below reports the levels of financial development within country as of 2000 and 2008. As we can see, the UK, Netherlands and Luxembourg are by far the countries with the highest level of financial development both in 2000 and in 2008. In terms of growth in financial development, Greece, Portugal and Poland are those with the highest increase; while France and, especially, Germany, those with the lowest.

Table A1.1: How financial development increased over the 2000s (selected EU member states)

	Fin_dev_00	Fin_dev_08	growth-00-08
Germany ⁸⁵	1.15	1.02	-11.3%
Greece	0.42	0.92	119%
Spain	0.65	1.72	165%
France	0.81	1.06	30.9%
Italy	0.71	1.03	45.1%
Luxembourg	0.96	2.11	120%
Netherlands	1.25	1.93	54.4%
Poland	0.25	0.41	64.0%
Portugal	1.18	1.72	45.8%
UK	1.21	1.89	56.2%

⁸⁵ Retrenchment following German reunification makes Germany the exceptional negative case here.

A1.8 Table A1.2 below reports the gain in GDP growth that could be ascribed to the respective increase in financial development, computed on the basis of the parameters of the Aghion et al. (2009) paper.

Table A1.2: How differences in financial development increase/decrease growth rates (selected EU member states)

Gains from increased financial development		Gains relative to Poland		Gains (Losses) relative to UK	
Germany ⁸⁶	-0.26%	Germany	1.2%	Germany	-1.7%
Greece	1.0%	Greece	1.1%	Greece	-2.0%
Spain	2.1%	Spain	2.6%	Spain	-0.3%
France	0.49%	France	1.3%	France	-1.6%
Italy	0.66%	Italy	1.3%	Italy	-1.8%
Lux	3.2%	Lux	4.7%	Lux	+0.6%
Neth	1.5%	Neth	3.3%	Neth	+0.1%
Poland	0.4%	Poland	0	Poland	-3.6%
Portugal	1.3%	Portugal	3.1%	Portugal	-0.4%
UK	1.3%	UK	2.9%	UK	0

A1.9 The effects of financial developments are many and varied, reflecting the significant increases in financial development that occurred over the sample period (e.g. through Globalisation, the Financial Services Action Plan, the euro, the integration of new member states from Eastern and Central Europe and the Mediterranean, and so on). For example, Spain would have gained 2.1 percentage of points in its average rate of growth simply for the increase in the level of financial development over the past decade; Greece and the UK about 1 percentage points, with Luxembourg an astonishing 3 percentage points. We should however bear in mind that this is going to be an upper bound, especially for the countries with high income and that were starting with an already high level of financial development (noting what has already been said about non-linear effects of financial developments). Germany might instead have lost 0.2 percentage points of growth as its degree of financial development fell over the period.

A1.10 The second column reports on the gains in GDP growth that each country could achieve because of its higher level of financial development as of 2008, taken as reference point Poland, the country with the lowest level of financial development. Again, the largest gains are for countries with the highest levels of financial development, but we again should see them as upper bounds. Finally, we have the losses in terms of GDP growth that each country could have because of not having the same level of financial development of the UK.

⁸⁶ The impact of reunification is thought to explain Germany being an exception here.

- A1.11 As we said, these estimates are likely to be upper bounds, both because these countries are all high GDP countries and therefore, if the model of Aghion et al. (2009) is correct, the level of financial development should matter less in driving GDP convergence with the US and because, for some of them, the level of financial development is already very high. In general, if one considers the estimates reported in Huang and Lin (2009) according to whom the impact of financial development on growth for low income countries could be from 1.5 to 3 times larger than in the case of high income countries, depending on the exact econometric specification, we could discount our estimates by about 2 times: even in this case, the level of financial development associated to the existence of important financial centers might still be responsible for a large share of GDP growth. For instance, the UK might still have a gain in GDP growth of about 1.4 percentage points ($2.86/2=1.3$) simply because it does not have the level of financial development of Poland.
- A1.12 We should also bear in mind that these estimates do not take into account any gain that would derive from the presence of externalities, which are quite likely given the interconnection of capital markets. For instance, Guiso et al (2004a)⁸⁷ estimated that integration of the EU capital markets might have increased GDP growth by about 0.15 percentage points a year.
- A1.13 We note that this analysis has not attempted to ascertain whether the growth effect estimated is due to higher capital accumulation or more innovation and therefore higher productivity growth. We have also not assessed the relative importance of the different mechanisms of effects mentioned above in driving GDP growth (e.g. maturity or risk transformation, consumption smoothing and so forth).

Remarks

- A1.14 Though the approach to estimating the effect of financial development considered here is standard in the academic literature, it is problematic as a basis for estimation in the current environment. This is due to the fact that the definition of financial development is intimately connected to the degree of indebtedness (remember, following Levine et al (2000), we define the degree of financial development as the credit by deposit money banks and other financial institutions to the private sector divided by GDP). If an economy is above its equilibrium level of indebtedness — if the private sector is “over-indebted”, as may well be the case in a number of EU member states, particularly relating to the household sector (the corporate sector is widely regarded as having restored its leverage to a sustainable level) — then financial development (and indeed growth rates) might be exaggerated.

⁸⁷ Guiso L., Jappelli T., Padula M. and Pagano M. (2004), "Financial market Integration and Economic Growth in the EU", *Economic Policy* 19, 40, pp. 523-577.

A1.15 However, this still leaves us with a key lesson to draw. Many commentators believe that the functioning of the financial sector either has been damaged or is about to be damaged by the events of recent years, through some combination of the international financial crisis itself and the responses of regulators, tax authorities, and the wider public to the financial sector as a consequence of it. Regardless of precisely *why* that damage has occurred or is about to occur, if that is what is happening and the processes of the Market do not quickly heal the functioning of the sector naturally, then the estimates above give a sense of the potential loss to the wider economy of lost functioning of the financial sector. That would make it very important that the sector is allowed to heal, and suggest that although it might be politically attractive in the short term to make the financial sector the scapegoat for economic problems, regulatory and other authorities should appreciate that there is a great danger and cost in doing so — not simply in terms of lost revenues but in terms of broader social impacts.