MAYOR OF LONDON

THE EUROPE REPORT: A WIN-WIN SITUATION

APPENDICES

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APPENDIX A: THE LONDON ECONOMY AND EUROPE

Introduction

This appendix seeks to better understand the advantages and disadvantages for London's sectors that flow from the UK's membership of the EU.

In particular it attempts to identify where the costs and gains might lie for London's sectors, in the extreme case of the UK withdrawing from the European Union. In the economic literature, attempts have been made to estimate the net benefits and net costs accruing to the UK from its membership of the EU. However, the results are inconclusive[1].

A particular problem with assessing the costs or benefits from EU membership (or conversely withdrawal) stem from what assumption(s) is made about the 'counterfactual' (that is, what would happen if the UK were not part of the European Union). Assumptions about the 'counterfactual' range from membership of the European Free Trade Area (EFTA) or the European Economic Area (EEA), to a Swiss model or the creation of the so-called 'Anglosphere'[2] amongst other examples. Each counterfactual comes with its own pros and cons, including a different degree of financial contribution. For example, it is estimated that, should the UK opt for a Swiss-style relationship with the EU, the UK's contribution to the EU would fall by approximately 60 per cent.[3]

As a result, if the UK did leave the EU, it is unclear what trading arrangements might replace it. For this reason the analysis presented in this appendix does not purport to (or aim to) quantify precisely what the costs and benefits of an EU exit would be. Instead it assesses what the current situation might imply about the *potential* advantages and disadvantages from EU withdrawal might be. As noted earlier the actual advantages and/or disadvantages that derive from a withdrawal from the EU will depend on what arrangements are put in place after the withdrawal.

The appendix analyses, for the majority of sectors in London[4], how they might be affected by a UK exit from the EU.

The analysis in this appendix proceeds as follows:

1. It begins by providing some background information on the sector.
2. Next, a summary of the existing EU legislation for the sector is set out.
3. Then the completeness of the internal market is considered; how free/open is cross-border competition within the European Union? The more complete the market, arguably the greater the potential costs to the UK and London might be from a UK exit from the EU. If there is little current possibility of

[1] See: House of Commons (2013), Leaving the EU. Research paper 13/42, available at http://www.parliament.uk/briefing-papers/RP13-42
[2] The advocates of the "Anglosphere" are in favour of closer relationships with other English speaking countries, such as US, Canada, Australia and New Zealand, However, they do not believe in supranational institutions, hence they propose a 'network commonwealth'. For more details, please see: Bennett, J.C. (2004), *The Anglosphere challenge: Why the English-speaking Nations will lead the way in the 21st Century*
[3] Based on Swiss Government information in 2009 brochure *Bilateral agreements Switzerland-EU*
[4] A number of London's sectors are not considered separately (or individually). For the most part this is because the factors affecting those sectors will be picked up in the consideration of other sectors (for instance 'administration and support' and 'other services' are likely to have similar considerations as regards a potential UK exit from the EU as many of the other 'service' sectors of London's economy).

cross-border trade, the market is classified as 'incomplete'; if trade is free and fully open, 'complete'; and in between, some markets are categorised as (from complete to incomplete): 'substantially complete', 'partially complete' or 'substantially incomplete'.

4. Next the potential costs to London if there was a loss of access to the market in the event of an EU exit are considered, taking into account future moves to complete the market as well as what has happened in the past. In some cases, the potential likelihood that complete access to the market would be lost (which to some extent depends on what might follow from EU withdrawal) is also considered.
5. Then the value of a 'seat at the table' (meaning the value of UK participation in the relevant Council of Ministers to discuss legislative proposals) is considered. This consideration is made on the basis of the evidence gathered and under the assumption that the UK has influence in the council. This could possibly be high for a number of reasons for example: if the sector is important to London; if the market is not yet complete but planned to be so, and a completed market would be valuable for London; or if there is scope in the absence of the UK for EU Members to take decisions which would be adverse for the UK/London. The categories used are 'high', 'medium' and 'low'.
6. Finally the possible extent of regulatory gains to the UK from leaving the EU is considered, given the perception that the EU sometimes generates unnecessary and costly, regulations[5]. This consideration is made on the basis of whether national governments or the EU has competency over the relevant sector; whether regulations are international, as opposed to originating from the EU; whether EU regulations might be retained even if the UK was outside the EU, for example safety or competitive reasons.

The appendix ends with a summary of the findings and a summary table. Also included is a copy of the specialisation index table which is shown in graph form in the main report.

It should be noted that although this analysis looks at the potential implications of the UK's withdrawal from the EU on each of the main London's sectors separately, a number of factors should be considered when reading the appendix.

[5] The think-tank 'Open Europe' has published an analysis showing that the Benefit Cost Ratio of EU regulations is 1.02 whereas the BCR of regulations imposed directly from the UK government is higher at 2.35. It says this provides a clear argument in favour of regulating at the local or national levels as much as possible. See: Open Europe (2010), Still Out of Control? Measuring eleven years of EU regulations, available at http://www.openeurope.org.uk/Content/documents/Pdfs/stilloutofcontrol.pdf

First, whilst efforts have been made to contact sector bodies and analysis conducted to understand the various issues involved in EU membership by sector, it has been impossible to cover every potential issue. National government is currently doing a 'balance of competences review'[6] which will run through to autumn 2014. As a result, this analysis should be seen as considering the main 'London specific' issues relating to EU membership rather than a complete consideration of the issues concerning every sector of the economy.

Second, the analysis only considers the impact of EU withdrawal. It has not considered the potential dynamic costs and/or benefits that could derive from withdrawal from the EU, for instance improved trading relationships with other parts of the world.

Third, the analysis is mainly conducted on a sector by sector basis and, beyond a relatively short consideration below, does not consider the interdependency among sectors. Part of the success of the London's economy is due to the high degree of clustering of firms in sectors such as financial services and professional services. For example, the agglomeration effects that the financial sector has been able to exploit to its own advantage (such as access to high-skill labour, positive knowledge spill-overs and tradability of inputs/outputs) have translated in (positive) knock-on effects on other sectors, like the professional services sector. As a result, whilst the impact on an individual sector may appear minimal from EU withdrawal, the sector may still be impacted indirectly through the impact of withdrawal on another interdependent sector.

Finally, and most importantly, whilst the analysis attempts to be as objective as possible, given the relative lack of 'hard data' in this area and the number of variables involved when considering the impact of a potential withdrawal from the EU, many of the conclusions in this appendix are ultimately subjective in nature. As a result, it is quite possible, with different assumptions, to come to quite different conclusions to those set out in this appendix and the conclusions should therefore be treated with significant caution.

Cross-sector EU impacts

The European Union has two main economic aims which are proclaimed prominently and near to the beginning of the Treaty on European Union:

- The free movement of people (Preamble)
- The establishment of an internal market (Article 3)

Barring limited transitional national restrictions, there is free movement of people within the EU. However especially in the services area, there remain restrictions on the free functioning of the internal market in the EU. Partly as a result, services only constitute 24 per cent of intra-EU trade, despite representing 70 per cent of EU GDP. The more restricted is the internal market in the EU (that is, the further away from free trade that the EU is) the less London is likely to gain in the form of exports to the EU (and imports from the EU).

[6] See: https://www.gov.uk/review-of-the-balance-of-competences

Before looking at individual sectors this section starts with a consideration of the advantages or disadvantages that span sectors.

One potential advantage of leaving the EU that could apply across all sectors (although with greater importance for those where London has international comparative advantage) - is the ability to negotiate bilateral free trade agreements. The EU has negotiated free trade agreements with more than 40 countries including Chile, Korea, Mexico and South Africa. Negotiations are ongoing with Singapore, Malaysia and an agreement with Canada was recently concluded. But negotiations with China have been hampered by a series of disagreements on items such as steel, wine and solar panels. And efforts to sign an EU free trade accord with the US were obstructed in October 2013 by the US government shutdown consequent on the Congressional impasse over the Federal Budget (EU officials hope to sign an agreement before the end of 2014). If the UK left the EU, it would be free to negotiate bilateral trade agreements. It might be less complex for a single country to secure these with the likes of the US and China, rather than for the EU Commission which has to negotiate on behalf of 28 countries. On the other hand the negotiating power of a single country of 63 million people is clearly less than that of an organisation representing 28 countries with 500 million people. And if the UK left the EU, it could lose access to the bilateral agreements that the EU has negotiated. This includes bilateral air transport agreements and air service agreements which regulate the right of a country to use the air space of another country.

Another overall benefit of leaving the EU would be the saving of the financial contribution required from the UK. The UK is the third biggest net contributor to the EU Budget after Germany and France[7]. In 2011 the UK's net contribution amounted to €4.7bn. However, this needs to be set the possible cost of alternative arrangements that might replace EU membership, like EEA membership for instance. EEA members contribute to the programmes in which they take part plus they pay towards the EU's social and economic cohesion funds. Even if the UK chooses a Swiss-style free trade affiliation with the EU, there would still be a cost: for the 2009-14 period Switzerland is contributing around €1bn to the EU's structural funds as well as funding for a number of other programmes.[8]

Leaving the EU would make it possible for the UK government to restrict inward migration of EU nationals. It is hard to assess the economic consequences of such a move – not least because such restrictions might be balanced by the ability to increase migration allowances from outside the EEA.

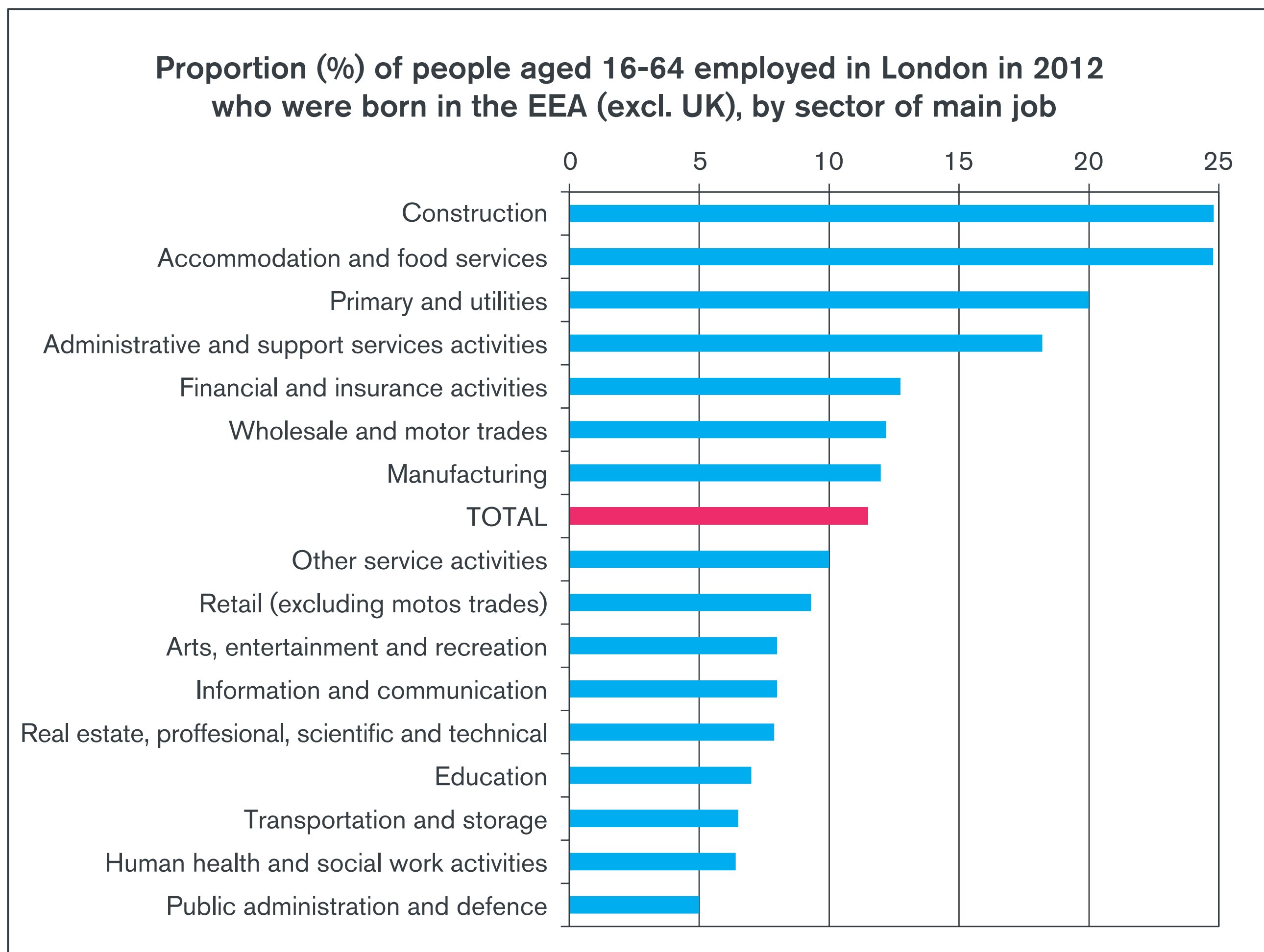
There is no widely accepted estimate of the economic impact of EU immigration, or indeed of immigration more generally[9]. But one recent study[10] finds that recent EEA immigrants have made a big positive impact on public finances. The study finds that EEA immigrants who arrived after 1999 have contributed 34 per cent more in taxes

[7] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221513/eu_finances_2012.pdf
[8] http://www.cityoflondon.gov.uk/business/economic-research-and-information/research-publications/Documents/research-2013/Switzerlands-approach-to-EU-engagement.pdf
[9] http://www.parliament.uk/briefing-papers/SN06730 page 17
[10] http://www.cream-migration.org/files/Press_release_fiscal_costs_benefits.pdf

than they have received as transfers. This contrasts with recent immigrants from outside the EEA who have contributed just two per cent more in taxes than they have received as transfers. It also contrasts with UK natives whose tax payments over the same period were 11 per cent lower than the transfers they received.

The statistics (see Figure 1) show that in two London sectors – construction and accommodation and food services – the proportion of employment of people born in the EEA outside the UK is almost one quarter. In another sector – administrative and support service activities which accounts for ten per cent of London's employment – nearly 20 per cent of employment is taken by people born in the EEA outside the UK. And in the financial and insurance sector - which accounts for a fifth of London's GVA – 12.4 per cent of employment is taken by people born in the EEA outside the UK. Figure 1 below sets out the current propensity for London sectors to employ people born in the EEA (outside the UK).

Figure 1: Proportion of people aged 16-64 employed in London in 2012 who were born in the EEA (excl. UK) by sector of main job



Source: Annual Population Survey

Against this, if the UK did not join the EEA, UK nationals would lose the right to live and work in the EU. This would impact on UK, and London, based companies, with operations in the EU, who might find staffing EU-based posts more difficult.

A post-withdrawal government could repeal or amend some of the more controversial employment laws originating from the EU, such as the *Working Time Regulations 1998 and Agency Workers 2010*. (The Working Time Directive provides for a maximum 48-hour working week but allows member states to permit individual workers to opt out of this provision – the UK is the only member state that allows workers to use this provision).
Arguably the largest disadvantage to withdrawing from the EU would be the potential negative impact it could have on the UK (and London's) trade with the EU. Completion of the internal market could bring major gains to the UK. A recent government paper found that the complete elimination of all remaining trade barriers within the EU over a period of ten years could generate national income gains for the UK of around seven per cent of GDP[11]. The work in the paper is based on the MIRAGE dynamic general equilibrium model developed by the CEPII. Should the UK decide to leave the EU, the BIS paper suggests that these gains would be lost (if the rest of the EU liberalised its internal trade barriers but the UK did not liberalise its barriers with the EU). The gains, however, are predicated on the elimination of all remaining barriers to trade. Given the experience of past membership it is questionable whether such barriers would, in fact, be removed or over what time period they may be removed.

In the rest of this section we analyse how individual sectors in London might be affected by a UK exit from the EU. Note that this is in the context of the UK government's much more comprehensive review of the 'balance of competences' – specifically, whether the balance of competences between the commission/council and member states is appropriate. The review will last until autumn 2014. Thus far (February 2014), assessments have been published on 14 different areas (including the single market; health; foreign policy; trade and investment and transport among other areas). A further 18 assessments will be published in the period to autumn 2014.[12] These include single market, services; single market, financial services; social and employment; agriculture; energy; and education. Those needing a comprehensive sectoral assessment of the impact of a UK exit from the EU should study these assessments as well as the analysis set out here.

In the absence of a clear, agreed, alternative scenario after an EU exit, the analysis here is restricted to considering the potential advantages and disadvantages to EU membership. The paper does not consider alternative trading partners or opportunities that may arise as a result of any exit from the EU. It should also be noted that the analysis considers the potential impact on each sector separately and so does not easily allow for conclusions regarding the wider impact on London's sectors from an EU exit. Only the potential direct impact on sectors is considered.

[11] http://www.bis.gov.uk/assets/BISCore/economics-and-statistics/docs/E/11-517-economic-consequences-of-completing-single-market.pdf
[12] https://www.gov.uk/review-of-the-balance-of-competences

For any sector, it is often hard (and sometimes impossible) to state what the regulatory and trading regimes would be if the UK left the European Union. EU legislation is normally transmitted to national governments in the form of directives or regulations. Directives identify the aims of any particular measure but it is then up to member states how they frame a directive in their national law. This means that a lot of EU law is also UK national law and therefore will continue to hold sway even if the UK leaves the EU, until the law is amended to say something else. Given that parliament only takes a small number of bills in any single session, it may well take many years even after a UK withdrawal to amend 'EU' legislation.

If the UK left the EU, it could negotiate a Free Trade Agreement with the EU – like Switzerland. However, in order to protect companies inside the EU, the negotiating stance of the EU might well be that the UK could have access to the single market provided it meets EU norms. Indeed the requirement for such regulatory 'equivalence' in third country markets is already embedded in a number of financial services directives, for example MiFID (the Markets in Financial Instruments Directive).[13] If there were no Free Trade Agreement and the UK followed only the rules of the World Trade Organisation, UK goods exports to the EU would face tariffs in many cases.

UK companies that do not relocate and remain active in international trade with the EU may well choose to comply with EU harmonised rules as a profit-maximising decision – even if UK rules could be changed. Choosing to comply with EU harmonised rules would help relationships with customers and suppliers. If EU rules were tighter, it might even be a marketing tool to claim to meet EU rules rather than UK rules.

As a result of these points it is probably fair to say that the judgements around potential regulatory gains from withdrawal from the EU are amongst the most subjective of judgements made in this appendix.

General business view

Many recent business surveys – including those in London - show most are in favour of the UK remaining in the EU. For example, a 2012 survey by the London Chamber of Commerce and Industry (LCCI) revealed that 87 per cent of London businesses want the UK to remain part of the EU, while only ten per cent want the UK to leave the EU. However, more than half expressed the desire to negotiate a looser relationship. A similar result was revealed by the March 2013 poll with the most popular option (59.4 per cent) being for the UK to remain in the EU but with specific powers transferred back from Brussels to Westminster. For the UK overall, a CBI survey (September 2013) of 400 companies showed 78 per cent wanting to stay in the EU and just ten per cent thinking it is in their interest for the UK to leave the EU.[14]

[13] http://www.vsv-asg.ch/en/mifid
[14] http://www.cbi.org.uk/media-centre/press-releases/2013/09/8-out-of-10-firms-say-uk-must-stay-in-eu-cbi-yougov-survey/

Sector-specific issues relating to the EU and withdrawal from the EU:

- **Finance and insurance:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Financial services (19.8% of London's GVA, 7.5% of London's employment).	Very wide range of legislation, in particular focusing on banks since financial crisis.	Single Market principles and single rule book across EU have enabled business for the City across the EU. Banking union in the Eurozone risks a two-tier regulatory framework evolving, though there are some safeguards to prevent any measures undermining the internal market.	Would be subject to basic rules at international level (G20, BIS, OECD, WTO). Loss of guaranteed access to Single Market could undermine attractiveness of London as a location for head offices of financial services companies. Possible attempts by other Member States to prevent certain transactions (for example those denominated in euros) from taking place in London; in absence of UK influence and safeguards for the internal market (especially on banking) EU financial services legislation might gradually drift away from UK interests.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Wholesale markets substantially complete; retail still incomplete.
What would be the cost to London of losing access to it?	High. UK banks would need to be authorised in an EU Member State to benefit from passport.
What's the value to London of the UK's seat at the table?	High – but under threat.
Regulatory gains from leaving EU?	Medium – on the one hand, most regulatory rules are international and would be required whether in or out. Conversely, some EU-specific rules would not apply and the UK would not have to undertake costly legal action (for example the UK is challenging in the European Court EU limits on bankers' bonuses and has also challenged the proposed Financial Transactions Tax).

1) Background

London is Europe's financial centre. It is also one of the world's largest financial centres. How can it retain this status and continue to benefit in the future - as in the past - in the face of a changing global economy and increased international competition? Not only does London need to learn the right lessons from the crisis but it also needs to continue to position itself as an open, outward looking financial centre, at the heart of global and European finance. As stated before, being global and European need not be at odds with one another.

In 2013, the world's largest net exporters of financial services were: UK $71bn, US $27bn, Luxembourg $22bn, Switzerland $21bn, Hong Kong $13bn and Singapore $12bn.[15] While these figures reflect the international strength of the UK led by London they also suggest no major competitor within the EU. That too, as was seen during the financial crisis, can create a challenge as the size of the UK financial sector in relation to the UK economy is huge. It helps explain why it is vital for London to get its regulation right.

London is in a strong position. Within Europe, there are strong national financial centres in Amsterdam, Edinburgh, Frankfurt and Paris, strong niche financial centres in Geneva and Zurich, offshore centres in Dublin, Guernsey, Jersey and Luxembourg and emerging centres in Istanbul and Moscow. None rival London.

The UK financial sector covers a huge range of areas, many of which are international and thus could be located anywhere. These include banking, insurance, equity and bond markets, fund management, commodities trading, maritime services as well as legal services, professional and business services, accounting services and management consultancy. Yet, the fact that London remains responsive to new ideas and manages to position itself well in growing markets such as Islamic finance, sovereign wealth, the offshore Chinese currency market, in carbon markets, dispute resolution and even the increase in global regulation is a growth area for London. It really is impressive. It highlights London's global reach. The City's view on Europe has to be taken seriously, but an important point raised is that the time frame over which business looks can be relative short, up to five years, and in that business model there is a bias towards the status quo and to avoiding unnecessary uncertainty. Hence the City was pro the UK joining the euro as our competitors were doing that and in a similar vein is pro remaining in the EU given the uncertainty and legal complexity of leaving. Yet, many of the factors that underpin London's attraction would likely prove resilient if the UK were outside the EU. It is how the economies of Europe and the UK perform over the next couple of decades that is important, particularly in the face of future opportunities, growth and competition in the US, Asia and globally.

There are risks: one is that within the EU is that the principle of qualified majority voting could prevent the UK from protecting the City from unsympathetic regulation or that banking union gives greater power to EZ members over non-EZ members like the UK to drive legislation; another is that leaving the EU undermines some of the attraction of being in London and encourages the growth of a regional rival, most likely in Frankfurt or Paris. Of course, if the UK itself imposes excessive regulation or taxes or the cost of living in London soars too much then London could lose some of its attraction, whether in or out of the EU. That is, the ability to create a competitive environment, as well as to impose hurdles to future growth can be heavily determined by what the UK does itself, not blamed on the EU or international factors.

[15] See CityUK 'Key Facts about the UK as an International Financial Centre', June 2014

2) Existing EU legislation:
In the European Union the Single Market in financial services relies on the principles of mutual recognition and the 'single passport'. This is a system permitting financial services operators legally established in one Member State to establish/provide their services in the other Member States without further authorisation requirements.

Regular surveys suggest the City is overwhelming in favour of continued EU membership, although it appears that this is less to do with an enthusiasm for the EU itself and more the widely held belief that London and the City might suffer if outside. The issue can probably be best addressed by asking how would the City suffer being outside rather than in and, from a global perspective, what's needed to ensure London remains a leading global financial sector and does the EU help or hinder this?

Participants in the CityUK's survey of financial and related professional services leaders expressed some reservations in regard to the benefits to the UK's competitiveness stemming from European Union membership. Sixty five per cent for example said that 'regulatory changes from the EU' are the most significant challenge to their business.[16]

There are many areas of regulatory overlap for London with the EU. There is the Capital Requirements Directive IV (CRDIV) and the Capital Requirements Regulation (CRR). Another important provision is MIFID, the 'Markets in Financial Instruments Directive', which replaced the Investment Services Directorate and provides harmonised regulation for investment services across the 31 EEA Member States. For the insurance sector, the Single Market also relies on the principles of mutual recognition and the 'single passport'. The current major piece of European legislation covering insurance is the Solvency II directive, which seeks to codify and harmonise EU insurance regulation. Importantly it concerns the amount of capital that insurance companies based in the EU must hold to reduce the risk of insolvency. The European Parliament voted in March 2014 to bring the Solvency II directive into effect by January 2016, though this date has been pushed back several times.

There is a danger in looking at the relationship between the UK and EU from the perspective of the financial sector solely in terms of legislation and regulation. If the European and UK economy were growing strongly, there would be an enhanced need for financial services.

Given the global importance of finance, there is an increasing desire to have global regulatory approaches to all the key issues. That being said, it is clear that regional (in this case the EU or European Central Bank) or national (UK) regulatory approaches can be different, adding an additional complication. Given London's global reach, international competition also matters.

[16] CityUK: The City Speaks, http://www.thecityuk.com/research/our-work/reports-list/the-city-speaks-a-milestone-study-of-the-views-of-financial-and-related-professional-services-leaders-on-the-eu/ November 2012

The CityUK lists the following as factors underpinning London's status as an independent financial centre: a fair, proportionate and consistent independent regulatory environment; a business climate that facilitates new products and ideas; easy access to markets internationally for trade and investment; a tradition of welcoming foreign firms; concentration of financial institutions; high quality professional and support services; a highly regarded and impartial legal system based on common law; a focus on soft infrastructure such as exchanges and on hard infrastructure such as transport; a skilled and diverse labour force; a consistent politically neutral legal system; a central geographic location and time zone. While all are important, it is worth stressing the importance of common law which as CityUK states, 'Common law tends to be more flexible in respond in to the development of financial services and is the prime reason why over half of the world's commercial contracts are governed by English law and why the UK is a global leader in both judicial and non-judicial dispute resolution.'

3) How complete is the internal market?
Not complete – Cross-border banking and insurance for companies and in wholesale markets is more advanced than in retail markets. The 'Single Supervisory Mechanism' will give the European Central Bank the responsibility for supervising the largest Eurozone-based banks. By providing uniform supervision this should help to make the market more complete in the Eurozone but feeds into the concern we express below about the Single Market versus the Eurozone. Banking Union provided an important role in helping rescue the euro, but there is uncertainty about its future path and it could pose a threat to The City.

There have also been areas of recent tension impacting the City, including a cap on bankers' bonuses and eleven members of the Eurozone agreeing a financial transaction tax (FTT) of 0.1 per cent on trading of stocks and bonds and 0.01 per cent on derivatives. The tax would apply if any party to the transaction in euros was based in a participating Member State – regardless of where the transaction takes place. If implemented this would affect London which is a major centre for euro trading. Although small, it is the process that led to this which is the concern.

4) Cost of losing access
A global regulatory response was always seen as the most desirable to avoid the so-called 'Balkanisation' of the financial sector and also to avoid regulatory arbitrage. It would be wrong to view the City's relationship with Europe through a regulatory lens, as so much is unfolding. European Commission policies in the field of regulation of banks and financial conglomerates are based on the principles of mutual recognition and the 'single passport'. This is a system that allows financial services operators legally established in one Member State to establish/provide their services in the other Member States without further authorisation requirements. This implies that banks

headquartered in the UK would need to seek authorisation for a branch within the EU in the event of a UK exit from the EU. For the bank to then access the rest of the EU with the 'single passport', there needs to be a further agreement with the EU. This could take some time to achieve; it would include the EU banking authorities satisfying themselves that the UK's supervision is 'equivalent' to that in the EU. The impact of departure would very much depend upon the business model of individual banks. However the position could become more difficult. Despite there being no comprehensive services accord, the Swiss financial sector has, so far, benefited from largely unfettered access to the EU market, often through its presence in London. New EU regulations could change this. Tighter regulations would mean third countries constantly having to amend their parallel legislation, in line with any changes in Single Market legislation, in order to maintain equivalence over the course of time. And – like Switzerland – if the UK was to withdraw from the EU, it would lose the ability to influence EU banking legislation.

In particular the MiFID II proposals are likely to make provision of financial services to the EU from outside the EEA increasingly difficult. After 2019 offshore (that is non-EEA) providers will only be able to offer a more limited range of services, and that only on condition that they register with the European Securities Market Authority.

For the insurance sector, there is a feature of Solvency II which has the potential to handicap UK insurers, should the UK leave the EU. For global insurance companies the most important question concerns whether third country regulations will be considered 'equivalent' to those in the EU. If it is not – or if the reporting requirements featured in draft Solvency II interim measures do not allow insurance companies to take proper account of equivalence assumptions - then EU-based insurers would effectively have to meet capital requirements for their non-EU business twice over: once in the US according to National Association of Insurance Commissioners (NAIC) rules and once in the EU according to Solvency II rules.

The UK attracts more inward foreign direct investment (FDI) than any other EU Member State and the financial services sector attracts a large slice of this. In the CityUK's survey of financial and related professional services leaders, over eight in ten respondents said they think staying in the EU is the best option for the competitiveness of the UK as a financial centre and almost three quarters agree that their firm benefits from UK membership of the EU. Crucially, 38 percent said their firm was certain or likely to at least partially relocate out of London if the UK left the Single Market. However, it must be said, that this figure mirrors comments made by City leaders on the effect of the UK not joining the euro.

5) Value of a seat at the table
Having a seat at the table clearly can have benefits if the UK is able to protect its interests, but as we outline in detail in the reform section below, we already feel that this is becoming a challenge and is an issue that needs to be addressed – and that is even with the UK within the EU.

6) Regulatory gains from leaving EU
There are other EU prudential regulations in the financial services sector which the UK might be obliged by competitive pressure to adopt, even if it leaves the EU. An example is MiFID, the Markets in Financial Instruments Directive. Switzerland for example did not adopt MiFID and some commentators believe this was a mistake which caused its banks and asset managers to lose some EU business. Again - if the UK leaves the EU it will forfeit its chance of shaping the legislation (the 'seat at the table'). There are proposals in the MiFID Review – for example – that have the potential to restrict access to services provided by non-EU countries, and provisions in AIFMD (Alternative Investment Fund Managers Directive) which limit European firms' ability to contract with third party asset managers.

Outside the EU, London could become an even more competitive financial centre, remaining truly global. If the UK left the EU, would the EU seriously push ahead with all its proposed regulatory changes, such as in limiting bankers' bonuses or the financial transactions tax? To do so would further add to the attraction of London. Yet, over time, an increasing amount of financial services regulation is international rather than EU-based.

- **Professinal services sector**

2.12 Professional (scientific and technical) services sector summary

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Professional, scientific and technical (11.7% of London's GVA, 12.3% of London's employment).	Directives (like Services Directive) enable mutual recognition of qualifications awarded in other Member States to allow professionals to provide services.	System of automatic recognition for doctors, nurses, dentists, vets, midwives, pharmacists and architects; general system for professions not covered by specific rules of recognition.	Providing professional services in the EU without this system would be more difficult; possible impact on NHS use of doctors and nurses from other EU Member States.
Key questions:		**Our assessment:**	
How complete is the EU's internal market for this sector?		Partially complete	
What would be the cost to London of losing access to it?		High	
What's the value to London of the UK's seat at the table?		High	
Regulatory gains from leaving EU?		Low	

1) Existing EU legislation:
The Services Directive enables the establishment by business service providers in another Member State and eases the way for them to provide their services on a cross-border basis. It covers a large number of business services, with a few exceptions, such as private security services, services of temporary work agencies and notaries. The Services Directive was established in late 2006. However its implementation by Member States has been slow and patchy. The UK with its comparative advantage as a service sector economy has put particular emphasis on full implementation of the Services Directive, describing it as 'the first priority for boosting competitiveness in services.'

The Professional Qualifications Directive enables the recognition of professional qualifications for EU professionals wishing to work in another EU country. Professions such as accountants, lawyers, consultants and engineers, offering their services to a large extent to businesses, are regulated in the majority of Member States.

2) How complete is the internal market?
The Commission states that the level of intra-trade in services is significantly lower than that in goods, a point we make elsewhere in this report. Although progress has been slow, the Commission states it is committed to completing the internal market in services. The gains, for the UK and EU, if it does so could be significant.

3) Cost of losing access
If the UK withdrew from the EU, these provisions for UK-based professionals would need to be renegotiated.

One of the professional groups affected would be the scientific and high tech community. The likely issues would be the mobility of research staff within Europe and the future of EU funding of R&D projects.

The EU plays a major role in the financing of UK research and technological development in the form of the Framework Programme (FP) - the EU's primary funding instrument for supporting collaborative, transnational research and development. Programmes such as ERASMUS and the European Investment Bank also support scientific projects in the UK. As we mention in the section below on exit, the economic shock to those areas from losing EU funding would need to be likely substituted by UK funding.

4) Value of a seat at the table
The UK and London have a comparative advantage in some services sectors and the UK has been among the most diligent of Member States in applying the Services Directive. The UK has a large surplus of £16.5 billion in services with the EU. The lack of progress to date in liberating services fully highlights that even when you have a seat at the table progress is by no means guaranteed.

In the reform section below we highlight areas that need to be addressed.

- **Information and communication:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Information and communication services (11.6% of London's GVA, 7.2% of London's employment).	With the exception of the rules on procurement, each member state currently implements EU rules in different ways. There is no 'passport' system in place.	The lack of a true single market represents an indirect market barrier for business in the sector, hence damaging one of the London's strongest sectors. The sector acts as enabler for many other sectors in London.	Would lose the opportunity to influence the process leading to the completion of the Single Market for electronic communications, and representing the interests of UK-based providers. In a sector where London is strong and e-commerce transactions are estimated to increase, loosing tariff-free access could be damaging for the UK and for London. A negative impact on the ICT sector is expected to generate negative spill-over effects on other sectors (for example, professional services and financial services).

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Medium
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Low

1) Existing EU legislation

There are rules on public procurement – contracts must be advertised throughout the EU, technical provisions which effectively discriminate among suppliers must be avoided and award procedures must be based on objective criteria.

Apart from this, there is little EU legislation to create a single market in information and communication.[17] EU rules are implemented in 28 very divergent ways when it comes to licences, regulatory conditions or spectrum. Unlike banks for example, telecom operators need separate authorisations and must follow distinct rules in each member state they operate in; there is no 'passport' system.

[17] http://ec.europa.eu/digital-agenda/en/news/background-paper-public-information-session-telecoms-single-market

2) How complete is the internal market?

For the reasons set out above (for example the lack of legislation and the differing implementation of what EU rules there are) the market for telecommunications appears incomplete. Another problem is the variable enforcement of EU competition rules, which makes it hard to achieve a true single market in this sector. Despite the rules, public procurement is another source of indirect market barriers. It is illegal to discriminate by national origin but the criteria for the award of a contract can, arguably, be drawn up in such a way as to give local firms a better chance of winning.

It has been claimed that an integrated European Digital Single Market would lead to an increase in EU GDP of four per cent over a ten year period[18]. A recent report for the European Commission[19] found for the EU as a whole that:

- 'Internet, and in particular broadband Internet, provides the platform for the huge growth potential of applications such as e-commerce and cloud computing: a ten percentage points increase in high-speed Internet is estimated to lead to an annual growth in per capita GDP of some 1-1.5 percentage points.'

- ‘The continued growth in broadband has been possible in particular thanks to increasing levels of competition brought about by the implementation of the EU regulatory framework for electronic communications, with a corresponding reduction in the retail prices of services. The new operators sold two thirds of all the new fixed lines in 2011. This being said, persistent price differentials between member states indicate the internal market in this sector is still incomplete.'

- Whilst the '‘internet economy' in the EU-27 is expected to grow from 3.8 per cent of GDP in 2010 to 5.7 per cent in 2016, **progress in cross-border e-commerce remains very low**. In 2011, only ten per cent of the total EU population ordered goods or services from sellers from other EU countries. Moreover, the more developed countries in cross-border e-commerce are progressing much faster than the less developed ones, creating an ever wider gap.'

- 'The low use of cross-border e-commerce by individuals is matched by the **limited number of enterprises selling cross-border electronically**. In 2010, only 6 per cent of enterprises engaged in e-commerce made e-sales to other EU countries, including in the countries with the highest share of firms involved in e-commerce. The EU is still missing out on the big benefits of e-commerce. This leads to a total loss of potential cross-border trade of 26 bilion euros each year. Accordingly, significant welfare gains for European consumers from lower online prices and increased online choice could be brought by enhanced integration of e-commerce in the EU.'

[18] E!Sharp, ‘A digital single market by 2015?', March 2012.
[19] European Commission, ‘Report from the commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of Regions and the European Investment Bank: State of the Single Market Integration 2013 – Contribution to the Annual Growth Survey 2013', November 2012.

- The commission has also taken a number of initiatives to address issues that hinder online purchases such as 'lack of trust or information, privacy and/or security concerns and concerns about getting redress in case something goes wrong.' These initiatives include 'the new Consumer Rights Directive (CRD), which will become applicable from 13 June 2014 at the latest, [and] will strengthen consumers' rights when buying on the Internet thereby encouraging legitimate e-commerce. The proposal for ADR-ODR legislation aims to ensure that quality alternative dispute resolution tools are effectively put in place and work in practice and that an EU-wide on-line platform is established for cross-border e-commerce complaints. A proposal for a Regulation on a Common European Sales law55 has been tabled with the aim to give traders the option to sell their products to citizens in other Member states on the basis of a single set of contract law rules, based on a high level of consumer protection.'

- Whilst it also observes that 'another key obstacle to cross-border e-commerce is delivery. This is a key element for building trust between sellers and buyers. To address this barrier, a Green paper on an integrated parcel delivery market will launch a wide-ranging consultation and will be followed by a set of actions with the view to support the growth of e-commerce in the EU.'

- Further in relation to e-Government the report notes that 'a full transition to e-procurement in the EU could deliver savings in public expenditure of up to €100bn. E-procurement can also increase the share of cross-border procurement. However, the use of electronic procedures in public procurement remains limited at 5 per cent to 10 per cent.'

Another report[20] found that:

- 'The EU digital market remains fragmented' and that from 2010 to 2020 the gains from an EU single digital market would amount to '€500 billion or more than €1,000 for every citizen.'

- Whilst they 'estimate an employment increase in the EU of 30,000 per year due to moves towards the digital single market[21], including an increase in the adoption of online services from 3 per cent to 4 per cent per year.'

- The report notes that 'much has already been done at the EU and national levels to introduce a well-functioning framework for the digital economy. At the European level, directives have been adopted in the areas of e-money (passed in 2000, c.f. Official Journal of the EU), e-commerce (passed in 2000, c.f. Official Journal of the EU), e-invoicing (2006, c.f. Official Journal of the EU), e-privacy (2002, c.f. Official Journal of the EU), and digital music rights (2001, c.f. Official Journal of the EU).

[20] Copenhagen Economics, 'The Economic Impact of a European Digital Single Market', March 2010.
[21] With it defining a digital single market as:
- "A harmonised and integrated European market without barriers between EU member states hindering the use of digital and online technologies and services"
- "A single market which encourages cross-border online trade"
- "A single market which encourages investments in new online services and applications"
- "A single market with a high level of e-skills and e-readiness"
- "A single market which encourages investment in digital infrastructure"

Much of the legislative efforts to create a pan-European framework for the digital economy peaked around 2005 and fewer directives and less legislative proposals have been tabled since 2005'.

- Barriers to a single market still exist however and ''include national differences regarding data protection rules, e-commerce rules and other legislation pertaining to information flows. Lacking convergence of e-governance and consumer protection are also seen as areas of hindrance for an internal market.'

3) Cost of losing tariff-free access

The potential gain from completing the single market for electronic communications is estimated by the commission[22] at an annual 0.9 per cent of EU GDP. In a sector where London is strong, if the market were to be completed and the UK was outside it, it could clearly represent a lost opportunity to the UK (and London). However, given the current incompleteness of the market, the immediate loss to London would be unlikely to be as large as in sectors with a more integrated EU market.

4) Value of a seat at the table

Further EU legislation in this market is likely, in order to achieve better market integration. Given the importance of this sector for London, it would, arguably, be beneficial to London for the UK to have a seat at the table (in order to shape the single market provisions in a manner to bring advantage to UK-based providers). It could also be argued that a seat at the table could be important to prevent UK-based providers being disadvantaged.

5) Regulatory gains from leaving EU

Because this is not a sector that is heavily regulated by the EU, the regulatory gains from a UK exit are likely to be relatively low.

[22] http://ec.europa.eu/digital-agenda/en/news/background-paper-public-information-session-telecoms-single-market

▪ **Wholesale/retail trade:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Financial services (19.8% of London's GVA, 7.5% of London's employment).	A number of directives on parts of the retail sector. Wholesale/ retail trade not included in those; however, the EC recently adopted a European Retail Action Plan and a Green Paper on unfair trading practises in the b2b food and non-food supply chain.	Restrictive legislation in some member states makes it hard for UK investors to gain a foothold.	Would lose the opportunity to influence the process leading to the completion of the Single Market for retail, and representing the interests of UK-based providers. However, since barriers to trade are still in place in other member states, the UK is not expected to be significantly affected by further barriers should the country leave the UK.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Low
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Low

1) Background

According to the Centre for Retail Research (2011), London is the number one world shopping capital ahead of Tokyo, Paris and New York and these four are well ahead of other competitors. Beyond London, the highest ranking EU cities are: Barcelona, Milan, Manchester, Madrid, Berlin, Rome (sequentially from Rank 10). Therefore it is no surprise that many brands have sited their European HQs in London[23].

The EU is one of the trade blocs with which UK Trade and Investment (UKTI) has prioritised retail brands with their international expansion. Germany, in particular, is seen by major retailers as a key market for accessing high net worth individuals and the fashion capitals of Milan and Paris have been identified for luxury goods for UKTI.[24] A priority is seen to be influencing EU Free Trade Agreement negotiations with UK priority markets (especially India and Malaysia). The question here is whether the UK's negotiations are 'better off' inside the EU or outside.

[23] http://www.joneslanglasalle.eu/ResearchLevel1/Retail-Destination-Europe-2013.pdf
[24] http://news.bis.gov.uk/imagelibrary/downloadmedia.ashx?MediaDetailsID=6389

The British Retail Consortium (BRC) says that the UK is the EU's most competitive retail market because the 'UK's door are open to foreign investors'[25] with the UK ranking as by far the biggest destination for retail investment. According to the BRC, the UK's share of EU retail investment was as high as one third in the first half of 2011[26].

Meanwhile, UK retailers have to comply with the restrictive legislation still in place in many other EU countries including the highly restrictive legislation in both Belgium and Germany on sales promotions and discounts. 'We currently have the disadvantages of a costly regulation machine without the full access to 500 million customers that a proper single market would give.' (Stephen Robertson, BRC Director General, 2011).

2) Existing EU legislation:

A number of EU directives bear on parts of the retail sector – for example those on foodstuffs. But, thus far there has been only limited EU legislation. However this appears to be changing. At the start of 2013, the commission adopted a European Retail Action Plan and a green paper on unfair trading practices in the business-to-business food and non-food supply chain. This followed a commission study of the barriers to a single market in retail (July 2010).[27]

3) How complete is the internal market?

Incomplete – the European Commission describes[28] the European retail and wholesale sectors as 'characterised by unequal levels of economic maturity and saturation of many markets. Competition in retail is hindered by removing barriers such as burdensome legislation, which may have protectionist motivations, or disproportionate restrictions imposed on store formats.' The commission has identified a small group of member states where there is a particular need to eliminate excessive restrictions. The UK is not in this group. Retail performance is also affected by limitations to cross-border supply of goods. The EC has identified another small group of countries where this is a particular problem. Again, the UK is not in this group.

[25] http://www.brc.org.uk/brc_news_detail.asp?id=2052
[26] http://www.retail-week.com/topics/policy/eu-legislation-prevents-uk-retailers-opening-stores-in-europe-says-brc/5029768.article
[27] http://europa.eu/rapid/press-release_IP-10-885_en.htm?locale=en
[28] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf

4) Cost of losing access

According to the British Retail Consortium[29], some member states have barriers and discriminatory legislation which is preventing UK retailers opening stores. But those barriers would be no greater if the UK was not an EU member. And direct investment by UK investors in the retail sector in the EU should be as free if the UK was not a member as it is now. So loss of access is unlikely to be an immediate issue, absent action to address the barriers. However goods sourced from the UK could face tariffs (assuming the UK post-EU exit did not join the EEA or negotiate Swiss-style trade agreements): tariffs on exports of clothing for example could push up their price in European markets by 12 per cent.[30]

5) Value of a seat at the table

Like the Information and Communication sector, because there is little EU legislation thus far and because this is an important sector for the UK, it could be argued that the UK should have a seat at the table to shape the Single Market provisions in a manner to bring advantage to UK-based providers. For example a priority issue for the EU is the mapping out and clarification of e-commerce barriers within each member state. It could also be argued that a seat at the table could be important to prevent UK-based providers being disadvantaged.

6) Regulatory gains from leaving EU

Because this is not a sector that is heavily regulated by the EU the regulatory gains are assessed as low. If the UK left the EU, UK retailers trying to break into the German market via direct investment would face the same national barriers. And the UK would be unlikely to repeal food safety laws – for example on additives – originating from EU directive.

[29] http://www.brc.org.uk/brc_news_detail.asp?id=2052
[30] Economist 8 December 2012

- **Health and social work:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Health sector (5.3% of London's GVA, 10.2% of London's employment).	A series of directives on employment and professional issues (for example on professional qualifications and working time), on public health issues (for example on tobacco products), and on national care delivery (for example on data protection and clinical trials).	Currently, the health care system is a national matter, whereas many aspects of health care are regulated by the EU to different degrees. These areas are related to public health (for example early warning and response system for prevention and control of communicable diseases, promotion of healthy living style), and mutual recognition of professional qualifications; training standards, working hours, and reciprocal healthcare. And the evaluation of pharmaceutical products (through the European Medicines Agency (EMA) based in London).	No direct implications for the UK and London. However, the UK might lose some of the benefits generated by regulations on healthcare provision (see 'current impact'), potentially resulting in a reduction in the quality of the services provided. On the other hand, the UK would have more autonomy in setting language requirements and necessary qualifications for non-UK trained doctors. Pharmaceutical companies keen on marketing their products in both the UK and other EU countries might need to follow two different processes, since the EMA will not have authority to process applications for the UK. Hence, companies might face higher costs and be discouraged from investing in the UK.

Key questions:	**Our assessment:**
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Medium
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Medium

1) Background

The Department of Health has published its Review of the Balance of Competences[31], taking into account evidence submitted by the BMA and others. In some areas the UK government recognises the benefits of the EU. For example a system where life science companies seek 28 different licences across member states would clearly be detrimental to patients and industry. Free trade across the EU has benefited UK companies in a number of different sectors including the life sciences. In public health the government highlights tobacco control as an area where the EU has spread good practice such as on smoke-free environments.

[31] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224715/2901083_EU-Health_acc.pdf

However it notes a number of points of concern:

- The need to ensure that non-health EU legislation does not have an adverse impact on the NHS, for example the Working Time Directive.

- The potential for Court of Justice decisions, for example in relation to freedom to obtain services and free movement, to impact on the NHS or the implications of particular pieces of legislation, such as the Working Time Directive.

- Certain directives have had adverse consequences for the UK such as the Clinical Trials Directive (although the government recognises the positive steps that have been taken to resolve this particular issue).

2) Existing EU legislation:
The EU's role in most parts of health policy is limited to supporting member states, which have responsibility for their own healthcare systems. But there are some parts of healthcare provision, such as the licencing arrangements for medicines, where there are clear externality benefits (enumerated below) from cooperation with the EU. By and large, these are the areas where EU regulations affect healthcare in the UK.

3) How complete is the internal market?
Healthcare is an issue for individual member states, which have responsibility for their own healthcare systems. So there is no real 'single market' in this area. But there are areas of EU rather than national competence – for example tobacco control and harmonised training requirements, see below for details.

4) Cost of losing access
There is not an issue for the UK and London of losing access to this EU sector because healthcare is a national issue. But there are some parts of healthcare provision, such as the licencing arrangements for medicines, where there are clear externality benefits from UK co-operation with the EU. Were the UK to withdraw from the EU, therefore, these benefits could be lost[32].

Also at risk would be London's role as host to the European Medicines Agency (EMA)[33]. The siting of the EMA in London adds to the attraction of the city to international pharmaceutical companies which can communicate at close quarters with the European Agency that tests their products. A UK withdrawal from the EU could also threaten the UK's Medicines and Healthcare Products Regulatory Agency's reputation[34] - the MHRA says 'our work with Europe is an integral part of meeting our objectives'. Such a withdrawal could threaten the associated agglomeration benefits.

[32] http://www.londonchamber.co.uk/docimages/11263.pdf
[33] Responsible for the scientific evaluation of medicines developed by pharmaceutical companies for use in the European Union
[34] http://www.mhra.gov.uk/Howweregulate/Ourinternationalactivities/OurworkwithEurope/

If the UK left the EU with some impact on free movement of EU nationals into the UK then London's private healthcare sector could be adversely affected.

The European Health Insurance Card (EHIC)[35] gives EU residents travelling in another EU country the same healthcare rights for urgent treatment as residents of that country. That means that in the UK, EU residents obtain free treatment. In some other EU countries, a patient contribution is required. Depending on the balance of costs of treating EU residents in the UK versus treating UK residents in the EU, there might be a cost saving for the UK from leaving the EU.

5) Value of a seat at the table

The externality benefits of UK cooperation with the EU are noted above. So it is valuable for the UK to have a seat at the table of this sector, in order that the externality benefits can be continued and enhanced – for example through information-sharing and developing international standards of Good Clinical Practice.

6) Regulatory gains from leaving EU

There are likely to be some regulatory gains from leaving the EU. For example if the legislation implementing the Working Time Directive was repealed, there could be greater flexibility in devising NHS work and training rotas (although the BMA supports the Working Time Directive (see below)).

In its submission to the Balance of Competences Review, the British Medical Association highlighted a number of issues where EU regulation was either helpful or potentially harmful to the health sector[36]. These included:

- Employment and professional issues:
    - With the BMA noting that the EU *'has an important role to play in social and employment law. Health professionals benefit from EU health and safety legislation which in turn benefit patients in the form of increased patient safety. The European internal market guarantees that professionals can move and work freely throughout the EU by virtue of having their professional qualifications recognised in other EU member states.'* Further *'the BMA recognises that the Directive on the Recognition of Professional Qualifications (2005/36/EC) requires updating in order to meet the demands of modern medicine.'*

[35] http://europa.eu/youreurope/citizens/health/unplanned-healthcare/temporary-stays/index_en.htm
[36] Source: BMA response to the Department of Health Review of the Balance of Competences in Health – not published, received from the BMA.

- On language competences, the BMA expresses some concerns with respect to whether current legislation allows regulators and employers having legitimate doubts about EEA doctors' language skills being able to act on these doubts. They note *'that all doctors, whether they are from European Economic Area (EEA) countries or elsewhere, must have an acceptable command of English, both verbal and written, and acceptable clinical skills if they wish to practise in the UK.'*

- They further note that EU proposals to harmonise standards for specialist training may have a negative impact on UK doctors. Thus they observe that *'under the rules of Directive 2005/36/EC, the UK would be required to recognise the qualifications of specialists who had qualified under these standards. Were the UK to remain one of the only countries not to adopt harmonised standards, there is a risk that UK qualified specialists would be hampered in their ability to have their qualifications recognised across the rest of Europe.'*

- However, in relation to the European Working Time Directive (EWTD) it notes that it *'is essential health and safety legislation that is necessary for both doctors and patients.'*

  The BMA also noted that *'the European Union provides additional rights to patients that are often not provided under national law'*, thus *'the BMA welcomed the 2008 Council Recommendation on Patient Safety which focused political attention on the importance of protecting patients.'*

▪ Public health issues:

- The BMA notes *'more general directives concerning notification and early warning of infectious disease (TELLME Project) are helpful developments.'*

- In relation to a tobacco-free society, the BMA stressed its input into the revision of the Tobacco Products Directive (2001/37/EC), whilst *'the BMA also believes that the Directive should be revised to require all nicotine containing products to be regulated as medicinal products, taking account of Directive 2001/83/EC.'*

- In relation to organ donation the BMA notes that *'European legislation has contributed to ensuring high quality and safe standards for the donation, procurement, transportation, traceability and follow-up of human organs throughout the EU. Directive 2012/25/EU enshrined in legislation many of the systems and procedures that the UK had already been following.'*

- Adapting to changes in national healthcare delivery:

  - The BMA notes possible concerns with EU proposals over data protection, clinical trials, the implementation of the European Medicines Directive 2001/83/EC in terms of prescribing medicine and concerns *'that the changes to the NHS in England may result in EU competition and procurement rules being applied to the publicly funded NHS. This could mean that bidders from across the EU would be given the same rights as local providers and that competition rules could apply to commissioning activities undertaken by clinically led consortia. The application of these rules could have significant implications for the stability of local health economies and the quality of patient care.'*

In conclusion *'the BMA believes that the European Union has a crucial role to play in safeguarding patients' interest and guaranteeing quality standards of care. The BMA will continue to engage proactively with European policymakers in order to protect the rights of both patients and health professionals, and to promote the highest possible standards of public health.'*

- **Education:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Education (4.7% of London's GVA, 7.4% of London's employment).	Non-discrimination against students; mutual recognition of qualifications (see above); harmonisation of curricula and degree structures to enable student exchange programmes (although also possible outside the EU).	UK Universities cannot charge EU students more than UK ones;	UK HEIs would likely have flexibility to charge more to EU students. End of automatic recognition of UK qualifications (or even changes to how degrees are structured), if it were to happen, could be a disincentive to study in UK.
Research	Horizon 2020 for Research, Development and Innovation	€70bn EU-wide programme for 2014-20. BIS figures suggest that London organisations (incl. business, public sector, universities…) received about €1.1bn in the current EU research budget (2007-13).	This funding would largely be lost, though certain EU programmes are also open to non-EU partners. A key aim of such funding is exchange of best practice between actors in different member states, and the outcomes of the research influence EU policy development, so UK would lose out on those two counts as well. However, this is purely a fiscal transfer and overall the UK contributes more to the EU than it receives – so it is not inconceivable that this fiscal loss could be 'made up'.
Other funding streams	Environment, Education and Training, Security, Creative Industries etc.	Very approximately, €20bn will be available for these other programmes in 2014-20	As above. Arguably the loss of the opportunity for trans-national collaboration would be as important as the loss of the funding itself.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Medium
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Low

1) Existing EU legislation:
Within the EU, education is largely regulated at the national level. EU legislation is limited to ensuring non-discrimination against students and harmonisation of curricula and degree structures to enable student exchange programmes.

2) How complete is the Internal Market?
For some aspects of education (for example curricula, education and training systems) education is a national issue but importantly EU nationals have the right to higher education throughout the EU at the same cost as residents.

3) Cost of losing access
In the case of education it is not the cost of losing access to the internal market that is an issue, since education is the preserve of member states. But the main concern would appear to relate to the loss of access to funding streams.

Universities UK and the UK Higher Education International Unit submitted a response to the Balance of Competences Review. They are concerned about funding streams, should the UK leave the EU. The EU has a great impact on UK research and technological development in the form of the Framework Programme (FP), which is the European Union's primary funding instrument for supporting collaborative, transnational research and development, with a primary focus on science and technology. The programme's seventh phase (FP7) ran from 2007–2013, during which time it distributed over €53.2bn (£45.5bn) to as many as 10,000 research projects.[37]

Compared to other EU states, the UK receives 15.2 per cent of the current phase of FP7 funding; only Germany has received more funding overall. Due to its very high levels of participation, it is likely that the UK will continue to retain a significant share of FP funding. Thus far, UK institutions have participated in more FP-7 funded projects than any other EU member state. According to the fifth FP7 monitoring report[38], the Universities of Cambridge, Oxford and Imperial College ranked first, second and third in terms of counts of participants for the period 2007-11.

In terms of funding, Cambridge University will receive the fifth largest amount from FP-7 (€97.8m; Oxford University is in seventh place (€96.7m); Imperial College tenth (€86.9m); University College London eleventh (€81.9m); University of Edinburgh twentieth (€59.3m). Other UK institutions in the top 50 recipients of FP7 funding are the University of Manchester; University of Bristol; and University of Sheffield (Appendix 1 of Interim Evaluation).

In regards to funding concerns it should be noted that because the UK is a net contributor to the EU, the saving in the event of an exit would be more than enough, in theory, to compensate for the loss of EU grants.

[37] Interim Evaluation of the Seventh FP – Report of the Expert Group' (2010), p1 http://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/fp7_interim_evaluation_expert_group_report.pdf
[38] Table 3 in http://ec.europa.eu/research/evaluations/pdf/archive/fp7_monitoring_reports/fifth_fp7_monitoring_report.pdf

Universities UK and the UK Higher Education International Unit are also concerned about the free movement of researchers should the UK leave the EU. The Treaty of Lisbon introduced a legal basis for the creation of the European Research Area. The European Research Area (ERA) aims at the free movement of researchers, scientific knowledge and technologies. The Treaty further conveys competence on the European Parliament and the council to 'establish the measures necessary for the implementation of' the ERA under the ordinary legislative procedure.

The universities are also concerned about their ability to attract students domiciled in the EU, if the UK were to leave the EU. EU students have to be eligible for the same financial support from the UK government as domestic students, and universities can access UK Government funding for teaching such students. Universities UK fears that many of the best EU-domiciled students would not choose to study in the UK if they could no longer access UK financial support.

It should be said that if the UK does leave the EU, universities would presumably be able to charge an unregulated fee for any EU students they were able to attract (as they currently do for students from outside the EU) - but that would all depend on there being a market within the EU for a UK education at a cost the universities could sustain.

The funding for EU R&D and Education amounts to around 50bn euros for all member states.

It is true that universities bid for funding on a project by project basis so there isn't a confirmed UK allocation. The UK Higher Education International Unit state that around €3.8bn has or will come to UK higher education institutions from the European Commission's Vllth Framework Programme (FP7) (). The UK has secured the second highest level of funding from this programme (Germany is first). FP7 is a 7 year programme, so very roughly you could probably say €540m per year comes to the UK. Most of this is matched 50 per cent or 75 per cent by UK funds.

€540m is relatively small compared to the £4.47bn per year that the UK HE sector gets in public funding. However, of this £4.47bn only £1.6bn is for research and £160m for 'knowledge exchange', so arguably the EU funds add about 25 per cent to the overall HE budget for research and knowledge transfer (assuming €540m is around £430m).

The short answer is that some elements of ESF/ERDF 'Structural Funds' may be used for some research projects (e.g. ESF Technical Assistance, some ERDF Smart Cities projects, some ERDF feasibility studies etc.) and universities can receive funding to deliver ESF and EROF projects.

However, in the context the EU research funding the European 'Vith Framework' Research and Development funding programme is the most important for London. The 2014-20 replacement for the 'Framework programme' is called 'Horizon 2020'. Universities get a sizable proportion of funding through this along with other organisations. For instance the GLA's iCities project has EU R&D funding and the environment/energy teams have some R&D-funded projects too.
Da Vinci (or more normally Leonardo) is a separate 'non-Structural' EU fund which supports development of training and education methodologies, student placements in other countries, HE knowledge transfer etc.

De-centralised actions are the projects that are managed by the National Agency (competition only between UK applicants).

Centralised actions are the projects which are selected by the EACEA in Brussels (competition between applicants from all countries participating in the programme). All of the money reported by Ecorys went to the UK beneficiaries. The amounts that are indicated by the EACEA went to the consortia led by the UK institutions, therefore part of this money far for the organisations from other countries and, unfortunately, there is not possibility to identify the amount which was used by UK institutions only. However, if the purpose of your research is to show amount that UK institutions managed to get from the EU funding, you could add them both indicating that for the centralised actions money was awarded to the transnational consortium led by UK institutions.

Examples of London's educational expenditure of EU funds:

- Intervention for Pupils Excluded from School (2013-2014 – EUR 0.5m)
- Managed by Mayor of London's education and youth team

Funded from the following budgets:

- ERASMUS+ (EUR 13bn)
- Horizon 2020 (EUR 1.2bn)
- Employment and Social Innovation - EaSi (EUR 550m)

Whether there would be a big impact on universities if the EU money wasn't there it is difficult to call, but our assumptions include:

- It partly depends on whether they are using the EU money to fund work that they would do anyway and thereby releasing some of their UK funding to do other things (I suspect this is partly true).

- Most EU projects are transnational in nature — having EU partners almost certainly adds value to research projects, but it also means a fair sum of money is spent on project management and cross-border working that wouldn't otherwise be required. So they would probably be able to deliver the research projects more cheaply without the EU funding

▪ University research programmes may in part be driven by the need to 'fit' the EU funding programme priorities. Not having to match-fund the EU funds, would 'free up' some of the UK funds for other purposes.

▪ Undoubtedly they'd also find some other sources of funding, for example, from the private sector.

4) Value of a seat at the table

London is one of the great academic capitals of the world. It has more top universities (four) than any other city in the world.[39] Arguably, it would be valuable to continue to have a seat at the table in order to contribute to EU policy in this area.

5) Regulatory gains from leaving

Since education is largely regulated at the national level, there would not appear to be many regulatory gains from the UK leaving the EU. There would, however, be public finance gains from the withdrawal of subsidies to EU students, see above.

[39] http://www.timeshighereducation.co.uk/world-university-rankings/

- **Transportation and storage:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Transport (4.3% of London's GVA, 5.1% of London's employment).	Rail liberalisation Drivers' hours/ working time Vehicle design/ safety/ enforcement Single European Sky Passenger rights (all modes but most developed in air) Road charging (for HGVs on motorways) Cabotage Subsidies to public passenger transport	Some liberalisation has been achieved. The domestic rail sector lags other modes; port provision still fragmented.	Difficult to see UK regulation changing radically from EU rules. Would need to (re) negotiate agreements on airspace management, air services with third countries.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Partially complete
What would be the cost to London of losing access to it?	High
What's the value to London of the UK's seat at the table?	High
Regulatory gains from leaving EU?	High

1) Existing EU legislation

The central principles governing the internal market for services are set out in the Treaty on the Functioning of the EU (which is the Treaty of Rome updated for subsequent amendments). This guarantees to EU companies the freedom to establish themselves in other member states, and the freedom to provide services on the territory of another EU member state.

This is the central principle applying to transport within the EU. Transport is governed by Title VI (Articles 90 to 100) of the Treaty on the Functioning of the EU. Since the Rome Treaty's entry into force in 1958, this policy has been focused on removing borders between member states and thus contributing to the free movement of individuals and of goods. Its principal aims are to complete the internal market, ensure sustainable development, extend transport networks throughout Europe, maximise use of space, enhance safety and promote international cooperation. The Single Market signalled a turning point in the common policy in the area of transport. Since the 2001 Single Market White Paper (revised in 2006), this policy area has been oriented towards developing the different modes of transport, in particular making use of each means of transport (ground, waterborne or aerial) to its best effect.

The Department for Transport has set out[40] the many directives and regulations applying to the Transport industry.

2) How complete is the Internal Market?

The commission's own judgment[41] is that transport is lagging behind some other sectors in terms of market opening. The extent of market opening differs between different transport modes (air, rail, road, sea) and the internal market is incomplete[42]. The commission cites barriers to market entry and regulatory burden in Germany, France, Italy, Spain and Austria. The area where bottlenecks are still most evident is domestic passenger rail. Rail transport was not an explicit part of the 1985 EU White Paper on completing the Internal Market. Railway transport is still considered an area where technical, administrative and legal obstacles are hampering the market entry of foreign railway operators. The commission wants to redress the situation with the Fourth Railway Package and ensure greater competition in railway transport.

The provision of port services is still fragmented[43].

3) Cost of losing access

The following are examples[44] of what the EU has achieved in transport and what might therefore be lost to the UK if the UK withdrew from the EU:

- Funding of projects – The Trans-European Transport Network funds projects in all EU member states (road, rail, maritime, inland waterways, air transport). The EU supports 364 projects in total with a budget of €7.4bn[45]. Again, because the UK is a net contributor to the EU, the saving in the event of an exit should be enough, in theory, to compensate for the loss of funding in this area.

[40] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/204589/legislation-table.pdf
[41] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf
[42] http://www.kas.de/wf/doc/kas_34913-1522-2-30.pdf?130716135256
[43] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf
[44] http://ec.europa.eu/transport/_static/flipbook/index.html
[45] Including Cork–Dublin–Belfast–Stranraer Railway axis; United Kingdom/Ireland/Benelux road axis e.g. M6, A45 road improvements; "Motorways of the sea" – for which the English Channel is a key element; Railway/road axis Ireland/United Kingdom/continental Europe which includes Holyhead-Crewe, Birmingham-Felixstowe, Liverpool-Hull.

- Safety – for example all mobile transport workers must take a break of at least 30 minutes every six hours at most; drivers cannot work more than 10 hours during any 24-hour period when part of that time is a night shift. There are also flight and working time limits for pilots, cabin crew and sailors. If the UK left the EU, the government would need to consider what rules/regulations would be put in place to substitute for existing EU ones.

- Opening up air routes – previously air travel was subject to restrictive agreements between governments and airlines, many of which had a monopoly. The EU promoted competition - now, provided an airline meets EU-wide safety standards it can operate anywhere in the EU including domestic flights not in its home country. Since the liberalisation in 1992 there has been a 145 per cent increase in the number of routes in Europe. If the UK left the EU, the UK government would have to negotiate (as did the Swiss) to be part of this.

Block-negotiating for fair competition outside the EU – A block of 28 countries arguably has more negotiating power than any single country within that block. The EU's 'Open Skies' agreements means that routes are negotiated on behalf of all EU countries. The economic benefit of the first of these agreements, between EU countries and the Western Balkans and Morocco, has been estimated at a total of €6bn between 2006 and 2011. Thus far, Open Skies agreements have been signed with the US, the Western Balkans, Morocco, Jordan, Georgia and Moldova. If the UK left the EU, the UK government would have to negotiate to be part of this.

- Roads – EU legislation has been of considerable benefit to the UK's road haulage industry and this benefit could be lost in the event of withdrawal from the EU. The clearest benefit is in 'cabotage' or the ability of non-resident hauliers to undertake business. Previously a haulier could only travel from their own country into another to deliver. They were then forced to return empty. Now the haulier can load and deliver in any EU country.[46] [47]

- There is also a common set of technical standards for goods vehicles.

- Rail - The latest EU proposal for rail builds on the UK's competitive model by furthering the separation of train operators from track managers and aims to enable cross-border train services and promote the development of rail infrastructure.

Thus it can be seen that there could be a loss in this sector to the UK from withdrawal from the EU (though the loss would depend on what succeeds EU membership) – importantly the EU has responsibility for negotiating agreements with third countries on behalf of all member states, and the UK would lose the benefit of these on withdrawal. (Note that the UK might in some cases have pre-existing agreements – for example on air routes – which might provide an alternative to renegotiation).

[46] http://ec.europa.eu/transport/modes/road/haulage/cabotage_en.htm
[47] This is governed by Regulation (EC) 1072/2009 as of 14 May 2010 . This regulation replaced Regulations (EEC) No 881/92 and (EEC) No 3118/93, as well as Directive 2006/94/EC.

4) Value of a seat at the table

The evidence above suggests that it would be costly for the UK to lose access to this EU sector. It follows that it is important for the UK to have a seat at the table of this sector. As for London, many dimensions of EU transport policy are important for the city and it is therefore important for the UK to have a seat at the table to defend and advance the transport interests of London.

5) Regulatory gains from leaving

As part of the 'Balance of Competences' Review, the Department of Transport has asked for views[48] from the industry about the EU's impact on the transport sector. The Road Haulage Association (RHA) has responded to the consultation (which closed on 6 August 2013). In communication with the RHA, we were told that RHA members would like to know if the EU is good for business – especially manufacturing business – because their business depends completely on that of their clients. The RHA said that UK hauliers have only 18 per cent of the market to and from continental Europe; ten years ago it was over 50 per cent. Much of the fall is due to competition from East European companies.

Vehicle pollution regulations are both national and legislated by the EU. For example Vehicle Excise Duty is determined by CO2 emission – a UK originating regulation. But all new cars must comply with EU emission standards. Since road transport accounts for 22 per cent of total UK emissions of CO2[49], it could be argued that in the event of a UK exit from the EU, the legislation enacting EU pollution directives would not be repealed.

[48] https://www.gov.uk/government/publications/balance-of-competences-review-transport
[49] http://www.environmental-protection.org.uk/committees/air-quality/air-pollution-and-transport/car-pollution/

- **Public administration:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Public Administration (3.9% of London's GVA, 4.4% of London's employment).	European Regional Development Fund, European Social Fund.	€748m for London from the EU for skills and regeneration. Including match funding from national sources, this will mean a £1.3bn programme in 2014-20, largely managed by the GLA.	The EU portion of that funding would be lost. Presumably the GLA would ask HMG to fill the gap, although this unlikely to be a programme guaranteed for seven years.
Other funding streams	Environment, Education and Training, Security, Creative Industries etc.	Very approximately, €20bn will be available for these other programmes in 2014-20	As above. Arguably the loss of the opportunity for trans-national collaboration would be as important as the loss of the funding itself.
Hosting of EU bodies and other international organisations in London		European Medicines Agency and European Banking Authority are located in London. Part of new Unified Patent Court due to be established in London.	EU bodies would relocate to a member state. Patent Court is not strictly an EU body as other signatories are involved. Potentially, other public or business associations with major EU interests might relocate.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Partially complete
What would be the cost to London of losing access to it?	Low
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Low

1) Existing EU legislation

Public administration is governed and legislated largely at the national level within the EU. Therefore there is little EU legislation surrounding it, apart from on state aid and public procurement.

State aid must be 'compatible with the internal market'[50]. The EC Treaty prohibits any aid that distorts or threatens to distort competition in the internal market. However the treaty allows some exceptions – where the aid helps achieve objectives of common interest or helps correct market failures.[51]

[50] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12008E108:EN:NOT
[51] http://europa.eu/legislation_summaries/competition/state_aid/l26115_en.htm

The EU public procurement directives regulate the publication and organisation of tender procedures for public sector contracts (over minimum thresholds). The rules are intended to ensure transparency and non-discrimination leading to outcomes which represent good value for money[52].

In 2010, business opportunities in procurement covered by the EU rules amounted to around €447bn (3.7 per cent of EU GDP). However, only 3.5 per cent of procurement contracts are awarded cross-border.[53] In the 2007-2009 period UK companies won 17 per cent of direct cross-border awards from other member states. Only Germany, whose companies won 26 per cent, was more successful.[54]

The commission is exhorting member states to use e-procurement. It believes that a full transition to e-procurement can save up to €100 bn[55].

In immigration and asylum, criminal justice and police cooperation, the UK is either not bound by EU law or has an 'opt-in'[56]. So it can choose which elements of EU law it wishes to transpose into UK law.

2) How complete is the internal market?
Not entirely applicable since public administration is a national competency – though cross-border public procurement, as noted above, is rather rare which suggests there is room for improvement.

3) Cost of losing access
EU public procurement rules help to ensure good value for UK public investment – though they sometimes produce politically unpopular results, for example in 2011 when a train-building contract was awarded to Siemens of Germany ahead of the UK-based arm of Bombardier. And state aid rules help to ensure that public spending is appropriately used in cases of market failure. However, neither rule is tied solely to EU membership.

In terms of funding losses, the European Union's regional policy seeks to reduce structural disparities between EU regions, foster balanced development throughout the EU and promote equal opportunities. It achieves this by means of a variety of financing operations, principally through the Structural Funds and the Cohesion Fund. For the period 2007-2013, the European Union's regional policy is the EU's second largest budget item, with an allocation of €348bn[57]. The objective of economic and social cohesion was introduced in 1986 with the adoption of the Single European Act. The policy was finally incorporated into the EC Treaty itself (Articles 158 to 162) with the Maastricht Treaty (1992).

[52] http://www.parliament.uk/briefing-papers/SN06029
[53] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf
[54] http://ec.europa.eu/internal_market/publicprocurement/docs/modernising_rules/cross-border-procurement_en.pdf Table 23
[55] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf
[56] http://www.parliament.uk/briefing-papers/RP13-42 page 64
[57] http://ec.europa.eu/regional_policy/glossary/economic_and_social_cohesion_en.cfm

London receives EU funding through two funding streams: the European Social Fund (ESF) and European Research and Development Fund (ERDF). These funds are run over a number of years - with the funding for each agreed at the beginning of the period. The current 'funding round' runs from 2014-2020; the previous funding round ran from 2007 to 2013. The size of the ESF 'pot' for the 2007-2013 period for London was around £412m (which increases to £825m once the necessary 50 per cent domestic match funding is added). For ERDF the 2007-2013 pot was £158m (which rises to £329m once the domestic match funding is added). Taking the two programmes together then, equates to around £570 million of EU funding over the seven year period (or around £82m per year)[58]. Other EU funding to the GLA group is estimated to total up to around £5m per year.

4) Value of a seat at the table

It is important for UK-based companies to continue to be able to compete for EU public procurement contracts and for the UK government to ensure that public procurement rules are adhered to without discrimination.

5) Regulatory gains from leaving

Leaving the EU would at least leave the UK government free to favour UK-based suppliers for its public procurement and to offer unlimited State Aid if it so desired. These might be considered as 'political' gains even if they may not end up representing net economic gains (because UK-based suppliers may not offer the best value for money and State Aid may represent an intervention not justifiable on economic grounds).

[58] It should be noted that these are likely 'maximum' EU funding figures - as they are dependent on achieving a 50% match funding from domestic funding; if the domestic match is not made the EU funds cannot be used.

- **Construction:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Construction sector (4.5% of London's GVA, 5.3% of London's employment).	The new Construction Products Regulation (CPR). Services Directive. Other EU policies and legislations (for example on energy efficiency, public procurement and safety).	The construction sector in the UK is challenged by the new CPR, which will make it compulsory to affix the CE marking to products sold across Europe (currently on a voluntary basis only). This represents a step forward to implementing common standards to construction products.	The impact on the construction sector in the UK and particularly in London will not be as much as on other sectors of the economy.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Substantially incomplete
What would be the cost to London of losing access to it?	Low
What's the value to London of the UK's seat at the table?	Medium
Regulatory gains from leaving EU?	Medium

1) Existing EU legislation

At the start of July 2013 the new Construction Products Regulation (CPR) was implemented in order to begin to eliminate unjustified regulatory and technical obstacles to the free circulation of construction products in the EEA. The objective of the Regulation is to ensure the availability of reliable and accurate information on the performance of construction products and to strengthen market surveillance. 'Construction products' under the legislation include more than 40 families of products such as doors, thermal insulating products, cement, roofing products and bricks. According to the EU, the CPR will provide a common language based on harmonised standards.

In addition there are a number of EU policies and legislation with specific effects on the construction sector eg on energy efficiency, public procurement and safety.[59]

[59] http://ec.europa.eu/enterprise/sectors/construction/policies-legislation/index_en.htm

2) How complete is the internal market?

The UK government has identified the construction sector as one of the key areas (alongside tourism and retail) where there are 'hundreds of discriminatory, unnecessary or disproportionate requirements'[60]. The Services Directive was supposed to address this but as at 2011, in spite of a 2009 deadline for implementation, full implementation across all member states was still 'some way off'. (See BIS – 'European Commission Consultation on the Single Market Act: UK Government Response' (Feb 2011).)

The European Commission has identified[61] a particular problem with regard to mutual recognition in the following areas:

- Authorisation schemes.
- Certification of expertise – especially in the area of environmental certification of buildings.

3) Cost of losing access

The prevalence of obstacles to free intra-EU trade in this sector (see sources cited above) suggests that the single market in this sector is substantially incomplete and in view also of the relative size of this sector for London, it seems unlikely that London's economy would be significantly damaged if the UK was to lose free access to this sector.

4) Value of a seat at the table

Given that many of the provisions for this sector are considered to be negative for UK interests, arguably it would be preferable for the UK to be present, to take the lead in liberalising the market.

5) Regulatory gains from leaving

As noted above, the UK government has identified the construction sector as having 'hundreds of discriminatory, unnecessary or disproportionate requirements'. As a result, there may well be some regulatory gains from leaving the EU.

[60] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32275/11-760-uk-response-single-market-act.pdf
[61] http://ec.europa.eu/europe2020/pdf/sgmktreport2013_en.pdf

- **Accommodation and restaurants:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Accommodation and restaurants (2.6% of London's GVA, 6.7% of London's employment).	Mainly the Package Travel Directive (PTD) and the Tour Operators Margin Scheme (TOMS) – introduced as Article 26 of the Sixth VAT Directive. The restaurants sector is considered to be an internal matter; hence there is little direct regulation at EU level.	The sector has changed the ways in which it operates drastically, thanks to the advent of the internet and new technology. However, legislation has not been adapted to reflect such changes.	The changes to regulations that are currently being discussed at EU level would, arguably, be pursued by the government should the UK leave the EU. This is seen as a necessary step to eliminate the barriers currently in place.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Medium
What's the value to London of the UK's seat at the table?	Low
Regulatory gains from leaving EU?	Low

1) Existing EU legislation

The 1990 Package Travel Directive (PTD) has been the subject of much criticism from tour operators in the UK and the commission has agreed that it needs reform[62].

The PTD was legislated with the objective of creating a level playing field across the EU for the sale of standard package holidays. By 'package holiday', the directive implies some combination of travel, accommodation and/or other tourism services purchased on a pre-arranged basis at a single price. The directive was intended to cover such issues as consumer remedies after failure to deliver and compulsory refunds and repatriation in the event of insolvencies. Whoever sells such a package is deemed to be a 'tourism operator' under the definitions within the directive.

[62] http://ec.europa.eu/justice/consumer-marketing/files/com_2013_513_en.pdf

This is problematic because the tourism and leisure market is much changed since 1990. In particular, the following has occurred:

- An increased likelihood of 'self-packaging' whereby consumers arrange the combination for themselves;

- An increase in consumers in one country purchasing from suppliers in another – not covered by the PTD. For example, ABTA reports that UK companies have difficulties in offering holidays in the Republic of Ireland due to the Commission of Aviation Regulation in Ireland not recognising the bonding mechanism operated under UK law for the protection of UK consumers and also due to the requirement to appoint an agent within the Republic of Ireland where the organiser itself is not physically present in the territory.

The proportion of holidays covered by the PTD has actually fallen steeply over time.

In addition, in a more competitive market, small businesses would find it beneficial to team up to provide 'packages' but are unable to do so without formally becoming a 'tourism operator' in the eyes of the legislation.

The TOMS scheme (the Tour Operators Margin Scheme) was introduced in 1977 as Article 26 of the Sixth VAT Directive. HMRC describes the scheme as 'a special scheme for businesses that buy-in and re-sell travel, accommodation and certain other services as a principal or undisclosed agent.'[63] It is a simplification measure. In many cases it enables VAT to be accounted for on travel supplies without businesses having to register and account for tax in each member state where the services and goods are enjoyed.

It would be impractical for businesses to have to register for VAT in every EU country in which they operate. Tour operators pay VAT inclusive prices on the 'components' of the tour they purchase from suppliers – and for tax purposes this is treated as one single supply and the operators do not reclaim VAT on these services. The operators' taxable amount becomes the margin between the total cost of the components (inclusive of tax) and the price charged to the final consumer.

However, there are major problems with the legislation:

- TOMS is not applied uniformly across the EU; national governments have not generally seen it as being in their country's interests to enforce it at the strictest interpretation;

[63] http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageVAT_ShowContent&id=HMCE_CL_000501&propertyType=document

- The margin can only be taxed if the tour operator is based within the EU. If they are based outside the EU, there is no compulsion to pay VAT on their margin. This creates a competitive disadvantage for any EU-based operator who competes internationally;

- It was designed for a time when a package holiday was bought from a brochure. It was not designed for an online age where tourism services can be purchased with a click from anywhere in the world.

However the European Court recently issued a judgment[64] which will affect TOMS though it is too early to give precise details. Some operators will have to pay significantly more in VAT. The ruling will also put an end to the 'Transport Company Option' which allowed zero rated VAT to be applied to the margin on passenger transport elements of EU destination travel on the basis that there is a wholesale sale from a transport company to a tour operator (which would otherwise be subject to 20 per cent VAT).

The accountancy firm BDO suggests the ruling could add 3 per cent to UK tour operators' and wholesalers' costs[65]. There are two reasons for this. The first is that TOMS will now need to be calculated transaction by transaction and not on a global basis. Thus far UK-based wholesale suppliers have treated their inputs as outside of TOMS and subject to VAT under the normal rules and this has inevitably meant that their supplies re zero-rated or outside the scope of VAT due to the different application of the TOMS rules by other member states. The second reason is that thus far, the Transport Company Option (TCO) has allowed applying zero-rated VAT to the margin on passenger transport elements of EU destination travel, on the basis that there is a wholesale sale from a transport company to a tour operator (which would otherwise be subject to 20 per cent VAT):

- UK companies applying TOMS with mixed EU and non-EU supplies would no longer gain a benefit of offsetting reduced margins on non-EU sales against margins on the EU ones;

- UK based wholesale suppliers (accommodation brokers, Atol to Atol flight providers, etc) may now have to account for 20 per cent UK VAT on the margin for all EU products.

- And the offsetting that has been going on between profits on some sales and losses on others would presumably no longer be permitted.

[64] http://www.travelweekly.co.uk/Articles/2013/09/27/45434/significant+implications+of+eu+vat+ruling.html
[65] Also http://www.travelweekly.co.uk/Articles/2013/09/27/45434/significant+implications+of+eu+vat+ruling.html

2) How complete is the internal market?

Restaurants are seen as a national competency though several directives and regulations have an impact on the sector. The commission has a Rolling Plan of Tourism Action Framework[66] but this is about eg tourism promotion.

3) Cost of losing access

London is a significant tourism destination. Were an exit from the EU to reduce EU citizen's propensity to visit London (for whatever reason), London may well be detrimentally affected. More broadly, legislative provision for this sector is currently highly local rather than cross-border, so it is questionable how much 'access' there is to be lost.

4) Value of a seat at the table

Free movement of people and workers continues to be a primary concern of the industry which values access to visitors and workers. Figure 1 illustrates that EEA (outside the UK) labour accounts for almost one quarter of the workforce in this sector. However, the value of a seat at the table is questionable given areas that the UK has chosen not to 'take-up'. This includes for example, the UK having tighter border controls and Visa regulations than Schengen or the UK not taking advantage of having a low rate VAT (five per cent), allowed under EU legislation for labour intensive industries such as tourism / hospitality.

5) Regulatory gains from leaving

The potential gains to the UK from leaving the EU would appear to be low. As regards TOMS, if the UK left the EU, UK-based travel firms might need to pay VAT on all turnover.

As regards health and safety regulations in restaurants in the UK, many of the regulations that come from the EU have been transposed into UK law. It could be argued that such laws would be kept in the event of a UK exit from the EU, for example regulations covering food allergens, additives and packaging. Other similar regulations have their origins in the UK eg the regulations around BSE.

[66] http://ec.europa.eu/enterprise/sectors/tourism/files/communications/com_implementation_rolling_plan_en.pdf

- **Manufacturing:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Manufacturing (2.7% of London's GVA, 2.4% of London's employment).	Various directives affecting the sector. EC's Industrial Policies.	The implementation of industrial olicies is benefiting UK-based companies, which are expected to experience improved access to the internal market for goods, improved access to capital markets and facilitated investments in new technologies and innovation.	The sector only accounts for 2.7% of London's GVA and no ad hoc EU legislation affects the UK manufacturing sector. Hence, relatively little effect is expected.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Incomplete
What would be the cost to London of losing access to it?	Low
What's the value to London of the UK's seat at the table?	Low
Regulatory gains from leaving EU?	Low

1) Background

In Q1 2013 the British Chamber of Commerce began to monitor UK business sentiment (including - but not confined to - manufacturers) on issues relating to the EU. Their first 'Business EU Barometer: 1st Quarter 2013' found that 'most businesses think withdrawal from the EU would be bad for Britain, but the status quo and/or further integration is also viewed as bad for business', with 64 per cent of respondents believing that more decisions being made in the UK would have a positive impact on their business; the respondents' three top priorities for repatriation of powers are employment law, health and safety law and regional development policies. Their latest 'Business EU Barometer' (3rd Quarter 2014) found that the scenario viewed most positively was for the UK to remain in the EU but with specific powers transferred back to Westminster – 57 per cent believed this scenario would be positive for their business.

In their 'Help or hindrance? The value of EU membership to London business'[67] report the London Chamber of Commerce and Industry (again including but not confined to manufacturers) observed that *'while recognising the benefits of being part of a single market of over 500 million people, London Chamber of Commerce and Industry (LCCI) broadly agrees with the Prime Minister that the nature of the UK's current relationship with the EU is not satisfactory and the economic potential of the single market is not being realised. This must change. However, LCCI is clear that being part of a reformed EU is in the long-term interests of the UK.'* The report also notes that *'the UK Government must relentlessly drive efforts to advance single market harmonisation*

[67] London Chamber of Commerce and Industry, 'Help or hindrance? The value of EU membership to London business', April 2013.

to ensure a level playing field across Europe, while demanding that the European Commission actually enforces EU regulations consistently across member states' and also that *'to give certainty to London business, the UK Government needs to identify the areas that it will seek to negotiate on with Brussels at the earliest opportunity. Alongside this, the Government should seek more frequent reviews at the EU level on the applicability of business regulations.'* Whilst in relation to migration the LCCI observes that *'to maintain London's thriving economy, there needs to be a common-sense approach to migration. The Government must move to neutralise the increasingly negative public debate about migrants from other EU countries and promote the economic benefits to the UK of the free movement of workers within the EU.'* Further, although there is a common perception that EU regulation harms UK businesses, this may not necessarily be the case, with the report noting that *'the London companies interviewed agreed that product harmonisation benefits businesses'*.

2) Existing EU legislation

A number of directives and regulations impact the manufacturing sector for example those on energy efficiency, public procurement, State Aid, temporary agency work and safety. But there is little or no legislation covering the manufacturing sector *per se*. Rather, the commission has adopted Industrial Policies[68] – including on manufacturing – to try to boost economic growth. The policies cover programmes to achieve externalities - like the NER300 funding programme for innovative low-carbon energy demonstration projects and the Sustainable Industry Low Carbon grant scheme.

3) How complete is the internal market?

Accompanying measures to the industrial policy include such things as a simplified, predictable and stable Internal Market regulatory framework for new products and services. Also manufacturing is likely to benefit from improving the internal market for goods, and introducing a unified patent litigation system.

4) Cost of losing access

The cost of a UK withdrawal from the EU would be the loss of the benefits of the EU's industrial policies to UK-based companies. Given manufacturing's declining share of London's economy the immediate costs to the capital are likely to be lower than for other sectors (as well as for other parts of the UK).

5) Value of a seat at the table

Looking at the EU paper published in October 2012 'A Stronger European Industry for Growth and Economic Recovery' it appears that the UK has been successful in focusing policy on some of the sectors that are a priority for London (such as biotechnology, advanced manufacturing) as well as some of the financing priorities (for example creating a single market for venture capital funds).

6) Regulatory gains from leaving

In many instances regulations that deliver product harmonisation may be considered as beneficial.

[68] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0582:FIN:EN:PDF

- **Primary and utilities:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Primary and utilities (1.6% of London's GVA, 0.6% of London's employment).	'Third Energy Package' and associated European Commission's Communication to evaluate progress on full implementation by 2014.	A review of the energy sector is currently being undertaken by the government and the Regulator, in order to progress towards the single market in energy. With respect to renewable energy targets, the UK's target is of 15% by 2020, in order to be aligned with the EU's target of 20%. As of 2011, renewable energy in the UK accounted for the 3.8% (+0.6% y-o-y) of energy consumption.	Should the UK leave the EU, it is arguable whether the government would move away from the implementation of the 'Third Energy Package'. With regard to renewable energy and climate targets, it is also arguable as to whether the government would stop pursuing the goals set at EU level (e.g. DECC's Carbon Plan).
Key questions:		**Our assessment:**	
How complete is the EU's internal market for this sector?		Incomplete	
What would be the cost to London of losing access to it?		Medium	
What's the value to London of the UK's seat at the table?		Medium	
Regulatory gains from leaving EU?		Medium	

1) Background

Energy is an input into most goods and services and as such it can have a significant impact on the prices of goods and services in the economy.

The government has said that one of its priorities is to widen and deepen the single market in energy.[69] The larger the market and the fewer the barriers to trade, the lower prices to consumers should be. And the larger the market, the more secure supply will be.

Energy UK (the trade association for the energy sector) suggests that there are four main areas of concern to the energy sector:

1. Progress towards the single market in energy;
2. Energy policy particularly with regard to the renewables sub-sector;
3. Financial regulation especially Markets in Financial Instruments Directive (MiFID) – see section on Finance and Insurance, above;
4. Environmental regulation directives, particularly with regard to climate change and air quality.

[69] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/35431/eu-balance-of-competences-review.pdf

The relationship between progress towards open markets and membership of the EU is more complex than in some other sectors. This is because, historically, member states have had relatively protectionist policies on their domestic energy sectors and, initially many of them did not wholeheartedly support increased marketisation. However, in recent years, this has changed. The UK was the first to promote liberalisation of the energy markets.

Four of the UK's 'big six' energy companies are owned by non-UK domiciled parents:

- *Centrica:* UK owned. It is the largest supplier of gas to domestic customers and one of the largest suppliers of electricity (although using different trading names);

- *EDF Energy:* wholly-owned French nationalised industry formed in 2002 when Energie de France acquired SWEB, London Electricity Board and SEEBOARD plc etc.;

- *E.ON UK:* is the holding company of the world's largest investor-owned electric utility service provider based in Düsseldorf, Germany;

- *RWE 'Npower':* formerly known as Innogy plc. As Innogy plc it was listed on the LSE and was a constituent of the FTSE 100 Index. However, in 2002 it was acquired by RWE of Germany and was subsequently renamed RWE npower plc.

- *Scottish and Southern Energy* now technically *SSE:* UK owned and the second largest supplier. It is the largest supplier in the UK of renewable energy.

- *Scottish Power:* once a constituent of the FTSE 100 Index but in 2006 it became a subsidiary of the Spanish utility, Iberdrola.

This strong European presence in ownership of UK energy companies probably means that the sector would strongly oppose any withdrawal from the EU – for one thing, integration of the European energy market would help European companies which have invested throughout the EU and so these companies would not want to see the UK left out of the market integration process. Some of these companies have also received substantial EU grants to research alternative energy sources.[70]

[70] http://www.telegraph.co.uk/earth/energy/windpower/10375121/Wind-farm-subsidies-generate-900m-for-Britains-big-six-energy-suppliers.html

Single energy market

The EU's energy security policy aims to reduce its dependency on a single source by diversifying its sources of supply.[71]

There are considerable benefits to be reaped from a single European energy market.[72] These have been estimated at up to €30bn per year in the gas market (price of gas and price of flexibility) and up to €40bn per year in the electricity market - with up to a further €30 bn for coordinated investment in renewable energy and a higher contribution of renewable energy in supplying electricity demand.

All Transmission System Operators [TSOs] across Europe have a legal mandate to enable the delivery of a pan-European electricity market. Larger, more liquid markets will give generators access to wider customer base and give consumers more choice about which suppliers they want to purchase from. This is likely to reduce prices. Close cooperation between TSOs and common rules in areas such as sizing and sourcing reserve capacity are important if the full economic benefits are to be realised.

According to Energy-UK, the Single Market for energy is 'gradually getting there' but it is two decades behind goods markets. The advent of the single market potentially changes consumer behaviour, taking consumers away from the role of passive recipient to being able to make market decisions.

Bacton Interconnector is the only existing link between the continental and British gas transmission systems. Only about five or sixper cent of UK energy is actually provided by Bacton Interconnector. The current gas interconnector system comprises compression terminals at Bacton on the Norfolk coat and at Zeebrugge in Belgium linked by a 235km pipeline (which came on-stream in 1998) and a second pipeline between Bacton and Balgzand, Noord-Holland which came on-stream in 2006 and which is also 235km. The interconnector system enables gas imports and exports between Continental Europe and the UK with the latter pipeline linking to the Nord Stream pipeline to Vyborg in Russia.

Over the next 10 to 15 years we are likely to see more interconnectors. But the UK is fundamentally different from most other European countries - by nature of being an island. This means that imported gas has to come via an interconnector rather than just on an international grid.

Furthermore, the electricity market has interconnectors too: BritNed from the Isle of Grain to Maasvlakte, Interconnexion France – Angleterre, the bi-directional link between England and France, and the Eirgrid East-West Interconnector between Wales and the Republic of Ireland (entirely an Irish project). Three new grid interconnectors are planned: to Zeebrugge, NOR-UK to Norway and the South Coast to the French network.

[71] http://www.iris-france.org/docs/kfm_docs/docs/observatoire-pol-etrangere-europe/2013-03-eu-energy-roadmap-2050-eu-external-policies-for-future-energy-security.pdf
[72] http://ec.europa.eu/energy/infrastructure/studies/doc/20130902_energy_integration_benefits.pdf

In summary, the UK has become more interconnected with Europe as regards energy supply.

In future, cross-border trade in energy is likely to increase still more, with more interconnectors. This is likely to require a new set of rules about how trade is conducted across interconnectors. Energy UK expresses concern that those rules might be in some way suboptimal for the UK, if drawn up by an EU which excludes the UK (the 'seat at the table' argument). For example thus far relevant bodies have been able to comment upon (and therefore presumably influence) the Internal Energy Market Communication[73].

Financial instruments and their importance to the energy sector
As well as trading physical energy, companies in the sector also effectively purchase 'insurance policies' through financial market futures and options contracts.

Since the 2008 financial crisis, the EU has been involved in a number of regulatory initiatives in the financial markets which have had an impact on the energy sector. This adds to existing interventions such as the Markets in Financial Instruments Directive [MiFID]. MiFID is the law that provides harmonised regulation for investment services across member states as well as Iceland, Norway and Liechtenstein, aimed at increasing completion and consumer protection. It became effective in November 2007, replacing the Investment Services Directive. In the UK the Financial Conduct Authority (FCA) has incorporated MiFID into its guidance handbook.

This issue is mainly covered in the section on finance and insurance above. However, from the energy industry's perspective, the main concern is that MiFID II (aimed at strengthening the single market and taking the form of both a revised directive and a new regulation)[74] could have far-reaching impacts on energy companies, bringing many within the scope of financial regulation, mandating a system of central clearing and restricting bilateral trading. Such measures could have adverse impacts on market liquidity and drive up costs substantially. Again, the argument is around how much the UK should be 'at the table' to influence the way this develops.

The Market Infrastructure Directive (EMIR): This is the directive charged with increasing stability in over-the-counter (OTC) derivative markets, introducing reporting obligations, clearing obligations and common rules and an interoperability framework. This affects the way in which energy is traded and tends to incur additional costs. It has been argued that this an example of where the UK would be better off without the EU since it could reduce costs. However, it is highly likely that UK-based traders would still have to trade under mutually-agreed rules.

[73] http://ec.europa.eu/energy/gas_electricity/doc/com_2013_public_intervention_en.pdf
[74] Note here that, according to the FCA, implementation of the new measures is not expected before the end of 2014 at the very earliest.

Environmental legislation

Energy-UK believes that there is an imbalance in transposing EU energy environmental legislation into law. In the UK they suggest that the Department of Energy and Climate Change interprets the legislation literally and implements it ('gold-plating'), whereas some other Member states simply ignore it. There is said to be a case for 'sensible implementation'.

Other issues

Network Codes (NC): NCs concern how wholesale markets are aligned. An NC is an amalgam of rules which apply to one or more parts of the energy sector. At the highest level the NCs are based around security of supply of energy and support the efficient functioning of electricity markets.

Effectively the Network Codes are collections of legislation for the development of a unified energy market.

Energy-UK believes that the NCs are an important building block for the single energy market but need to be underpinned by rigorous cost benefit analysis as well as permitting realistic timescales for implementation. It does have concerns though, specifically about the NC process and, in particular, about the European Network of Transmission System Operators for Electricity [ENTSO-E's] code drafting where it has strong commercial interests such as the Requirements for Generators Code.

Smart grid coordination: the EU has a pro-competition stance on this. The UK trade lobby is concerned that market models should continue to provide energy suppliers with non-discriminatory access to smart metering and smart grid services. (A smart grid is an electricity network that can cost-efficiently integrate the behaviour and actions of all users connected to it – generators, consumers and those that do both – in order to ensure economically efficient, sustainable power system with low losses and high levels of quality and security of supply and safety[75]).

Third Energy Package (2009): Some countries have not implemented this yet. It is a legislative package for the EU's energy markets which came into effect in September 2009 aimed at further opening up gas and electricity markets, centred upon the unbundling of ownership (divesting assets via regulation). Energy-UK's position is to support the EU stance on taking action on infringement but it wants to see more concentration on major infringements rather than things such as notification failures. The latter take up a lot of time but don't necessarily lead help to liberalise energy markets.

[75] http://www.etsi.org/technologies-clusters/technologies/575-smart-grids

The Third Energy Package and 714/2009/EC also set out the areas in which Network Codes would be developed and the process for developing them.

The European Commission regards the Third Energy Package as 'the cornerstone of the integration of the gas and electricity market.' However it notes that there are ongoing problems in its transposition and enforcement with several member states not yet having communicated full transposition of one or both of the Third Energy Package directives. In particular, the smooth implementation of the legislation is encountering difficulties in the following areas:

- The unbundling of transmission networks

- Consumer protection issues – which includes the effective protection of customers identified as vulnerable

- Independence and powers of national regulatory authorities - the independence requirements of the directives are deemed by many to be too strict. The importance of implementing the independence provisions is attributable to the regulatory arrangements being a major element of how the integrated market will work – as well as the consumer protection measures therein.

The European Commission sees one of the priorities as the phasing out of regulated prices whilst also ensuring that vulnerable consumers remain protected.

2) Existing EU legislation
In 2007 the Commission adopted new legislative proposals for the energy market.[76]

On 15 November 2012 the commission presented a communication[77] assessing the progress of the internal energy market, to be completed by 2014. By that date the commission wants existing energy legislation (in which the UK played a leading role) to be fully implemented including putting into place the essential technical rules at EU level; providing regulators with necessary tools and resources to enforce legislation effectively; and setting up cross-border markets for gas and electricity.

3) How complete is the internal market?
The internal market for energy is relatively incomplete. Indeed the European Commission states[78] that *'considerable investment in energy infrastructure, such as transmission pipelines and electricity networks, storage and LNG projects is still needed to complete the internal gas and electricity markets and to address security of supply… Obstacles to investment relate to permit granting procedures in Member states, financing and regulatory framework.'*

[76] http://ec.europa.eu/energy/gas_electricity/legislation/third_legislative_package_en.htm
[77] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012DC0663:EN:NOT
[78] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0752:FIN:EN:HTML

Specifically, in eight member states more than 80 per cent of power generation remains controlled by the historic incumbent. There has been little convergence in retail prices for energy across the EU. In its communication on better governance for the single market adopted in June 2012, the commission recommended taking steps to unlock the single market potential in areas where such potential is greatest. Energy was identified as one of these areas. Energy is the area where member states are slowest in transposing directives into legislation.

4) Cost of losing access

The cost of losing access to this market for business in the energy industry, in the event of a UK exit, is judged medium, primarily because of the potential price impacts on other sectors of London's economy and on London's residents.

5) Value of a seat at the table

There is value in the UK having a seat at the table – for example, in framing energy security policies e.g. through cross-border networks. This can also help ensure diversity of supply. Having a seat at the table would also help UK-based Transmission System Operators to realise the full economic benefits because they could be consulted and respond about such aspects as sizing and sourcing.

6) Regulatory gains from leaving

EU regulations are designed to liberalise the sector; others are directed at for example health and safety and environment and are likely to be retained in some form by the UK outside the EU. We assess the regulatory gains from a UK exit from the EU as 'medium'. Energy environmental legislation deriving from the EU could be repealed although the UK would have the option to retain it.

- **Agriculture and food prices:**

Sector	Legal instrument(s)	Current impact	Implications for UK/London of leaving EU
Agriculture and Fisheries	EU Common Agricultural Policy	€370bn of subsidies and support for farmers planned for period 2014-20. But CAP support has fallen from over 4% of EU GDP in 1986 to 1% now.	Lower food prices should be one of the biggest gains from an EU exit. CAP could be replaced by UK support scheme. Difficult to say what impact of exit on food product manufacturing in London would be; may differ radically depending on the product.

Key questions:	Our assessment:
How complete is the EU's internal market for this sector?	Substantially complete
What would be the cost to London of losing access to it?	Low
What's the value to London of the UK's seat at the table?	Low
Regulatory gains from leaving EU?	Medium

1) Existing EU legislation

The key element in EU policy in this area is the Common Agricultural Policy (CAP). This dates back to 1962, in the early days of the European community. The economic dynamic that formed the foundation of the community was France's agreement to free trade in industrial goods – which benefited Germany – in exchange for German agreement to subsidies for French farmers. Before long the policy led to over-production of agricultural goods and high food prices. Real reform of the CAP only began in the 1990s. Reform was intended to break the link between subsidies and production, to diversify the rural economy and to safeguard food standards, animal welfare and environmental protection. Now subsidies to farmers are based on the areas they farm, not on the amount produced – called the 'Single Farm Payment'. The most recent reform was a political agreement reached on 26 June 2013[79]. This was then agreed by the European Parliament, the European Council and the European Commission in September 2013. The new rules were published in the official Journal (20 December 2013).[80] As a result of the reforms the CAP Budget has shrunk steadily in recent years, from 71 per cent of the total EU Budget in 1984 to an expected 39 per cent in 2013.[81]

[79] http://ec.europa.eu/agriculture/cap-post-2013/agreement/index_en.htm
[80] http://ec.europa.eu/agriculture/cap-post-2013/legislation/index_en.htm
[81] http://europa.eu/rapid/press-release_MEMO-13-631_en.htm

2) How complete is the internal market?

Agricultural trade is free within the EEA. But the CAP distorts production and trade (so we rate the market as 'substantially complete' rather than 'complete'). But there are high tariffs on produce from outside (Table 1):

Table 1: EU MFN applied tariffs, 2013

EU MFN applied tariffs, 2013		
	Simple average	**Tariff range**
	%	%
WTO agricultural products	14.8	0-197
Animal products	20.4	0-192.1
Diary products	31.7	1.5-164.8
Fruit, vegetables and plants	13.3	0-197
Coffee, tea, cocoa and preparations	11.6	0-18.7
Cereals and preparations	18.1	0-94
Oilseeds, fats, oils and their products	7.5	0-154.1
Sugars and confectionary	25.4	0-135.3
Beverages, spirits and tobacco	14.2	0-196.3
Cotton	0	0
Other agricultural products, n.e.s	5.6	0-83.5
Source: WTO EU Trade Policy Review 2013		

3) Cost of losing access

London's exports of food and live animals to the EU in 2012 amounted to £0.6bn or less than three per cent of its total goods exports to the EU so even though tariffs would be high, the cost in terms of lost exports would not be significant. However, there would be a big redistribution for the UK overall. On the extreme scenario of a UK exit followed by no formal links with the EU (that is, a more distant relationship with the EU than Norway or Switzerland) London households would benefit from cheaper food but UK farmers (the vast majority – if not all - of whom are located outside London) would lose Common Agricultural Policy payments estimated at £2.7bn per annum (though – as in other areas – the saving from the UK's contribution to the EU could be used to compensate UK farmers). According to The Economist magazine,[82] the UK Treasury believes that the UK would benefit to the tune of £8bn per annum (including lower food costs to consumers). The UK could drastically cut or eliminate tariffs on imports of food. But on the other hand UK dairy exports to the EU would face a tariff of at least 30 per cent with tariffs on some items over 200 per cent. (Tariffs on exports of clothing from the UK would rise too).

[82] Economist 8 December 2012

Complete departure from the EU would also imply that the UK would regain control of its coastal fishing rights.

The CAP is continuing to be reformed. However, even if the UK stays in the EU, CAP payments are likely to be redistributed away from its farmers (and those of other member states of long standing) and towards farmers in newer member states. There are also likely to be environmental or rural development criteria attached to future CAP payments.

In addition it would not be realistic to assume that there will be no support for UK farmers in the event of exit from the EU. There may have to be some support for UK agriculture in order to prevent severe dislocation and retain food security. As noted above, the saving from the UK's contribution to the EU could be used to compensate UK farmers.

4) Value of a seat at the table
Food and agriculture is a key and politically sensitive sector. EU policy will have a big impact on the UK, whether or not the UK remains a member of the EU – for example through competition in the agricultural sector and through the impact of EU policy on food security. A seat at the table is therefore valuable to promote/defend the interests of UK and London farmers and consumers.

5) Regulatory gains from leaving
Critics of the UK's EU membership suggest[83] that regulations on food additives are too onerous (additives must be authorised by European Food Standards Agency (EFSA) before they can be used in foods). But much of EU law in this area is likely to remain in the event of a UK exit from the EU, as part of the body of food safety law. In fact there is pressure on the UK's Food Standards Agency to go further than the EU[84].

The operating process of Single Farm Payments (see above for definition) is currently under review. The processing of payments alone is an expensive business. For example, in 2009, the average cost of processing an SFP claim in the UK was £742, even for payments as small as £5[85]. If UK policy outside the EU could devise a more efficient delivery method for farm subsidies, this would be a regulatory gain.

Conclusion
A summary of the findings is shown in Table 2. Based on the evidence available, there may be a significant cost to London of market access loss in the following sectors: professional, scientific and technical; and transport/storage. In the finance and insurance sector, the cost of losing access would be high but is considered as unlikely (although UK banks might subsequently need to seek authorisation in a member state). In education and public administration there are likely to be funding losses, though these could be made up from the saving of UK payments to the EU.

[83] http://www.ukip.org/issues-2/2013-01-25-10-55-7/2010-manifesto?id=505
[84] http://news.bbc.co.uk/1/hi/health/6979976.stm
[85] http://www.parliament.uk/business/publications/research/briefing-papers/RP13-42/leaving-the-eu

Table 2: EU impact on London's economic sectors: Summary Tableom EU

	Proportion of London's GVA	Proportion of London's Employment	How complete is the Internal Market?	Cost to UK of losing access to it?	Value of seat at table	Regulatory gains from leaving?
Finance and insurance	19.8%	7.5%	Wholesale complete, retail incomplete	High	High – but under threat	Neutral
Professional, scientific and technical	11.7%	12.3%	Partially complete	High	High	Low
Information and communication	11.6%	7.2%	Incomplete	Medium	Medium	Low
Real estate activities	9.8%	2.4%				
Wholesale/retail	8.3%	12.3%	Incomplete	Low	Medium	Low
Administrative and support service activities	5.4%	9.9%	Incomplete	Medium	Medium	Medium
Health and social work	5.3%	10.2%	Incomplete	Medium	Medium	Medium
Education	4.7%	7.4%	Incomplete	Medium	Medium	Low
Construction	4.5%	5.3%	Substantially incomplete	Low	Medium	Medium
Transport/ storage	4.3%	5.1%	Partially complete	High	High	Low
Public administration	3.9%	4.4%	Partially complete	Low	Medium	Low
Manufacturing	2.7%	2.4%	Incomplete	Low	Low	Low
Accommodation & restaurants	2.6%	6.7%	Incomplete	Low	Low	Low
Agriculture and food	2.1%	3%	Substantially complete	Low	Low	Medium

Arts, entertainment and recreation	1.7%	3.3%	Partially complete	Low	Low	Medium
Primary & utilities	1.6%	0.6%	Incomplete	Low	Medium	Medium

Sources: Employment: ONS Workforce jobs series 2012 (includes self-employment); GVA: ONS

Table 3[86]: London's broad sectors: London's industrial structure and Index of Specialisation[87] (relative to the rest of Great Britain) 2012

Sector	London employee jobs	Share of total London employee jobs	London share of GB employee jobs	Index of speciali-sation
Total London economy	**4,446,521**	**100.0%**	**16.6%**	**1.0**
K : Financial and insurance activities	356,269	8.0%	34.4%	2.1
J : Information and communication	313,433	7.0%	30.4%	1.8
M : Professional, scientific and technical activities	537,379	12.1%	26.9%	1.6
L : Real estate activities	111,396	2.5%	26.2%	1.6
S : Other service activities	108,319	2.4%	20.9%	1.3
N : Administrative and support service activities	459,939	10.3%	20.6%	1.2
R : Arts, entertainment and recreation	118,971	2.7%	18.0%	1.1
H : Transportation and storage	217,714	4.9%	18.0%	1.1
I : Accommodation and food service activities	335,682	7.5%	18.5%	1.1
O : Public administration and defence; compulsory social security	215,955	4.9%	16.0%	1.0
P : Education	370,209	8.3%	14.6%	0.9
G : Wholesale and retail trade; repair of motor vehicles and motorcycles	558,286	12.6%	13.1%	0.8
Q : Human health and social work activities	450,579	10.1%	12.6%	0.8
F : Construction	152,367	3.4%	12.8%	0.8
E : Water supply; sewerage, waste management and remediation activities	19,114	0.4%	10.7%	0.6
B : Mining and quarrying	4,542	0.1%	7.0%	0.4
C : Manufacturing	110,327	2.5%	4.8%	0.3
D : Electricity, gas, steam and air conditioning supply	5,247	0.1%	4.8%	0.3
A : Agriculture, forestry and fishing	793	0.0%	0.4%	0.0

Source: Business Register and Employment Survey;

[86] A more detailed breakdown can be found in the annex.
[87] The index of specialisation is calculated as: (London employment in sector / London total employment) / (Rest of GB employment in sector / Rest of GB total employment). Therefore if the index of specialisation is greater than 1, then this shows that London has a greater share of its total jobs in the sector being examined than does the rest of GB. As such it can be regarded as an area in which London has some specialisation.

Table 4: Breakdown of London's industrial structure and Index of Specialisation (relative to the rest of Great Britain) 2012

Sector	London employee jobs	Share of total London employee jobs	London share of GB employee jobs	Index of speciali-sation
Total London economy	**4,446,521**	**100.0%**	**16.6%**	**1.0**
K : Financial and insurance activities	**356,269**	**8.0%**	**34.4%**	**2.1**
of which:				
6430 : Trusts, funds and similar financial entities	7,899	0.2%	69.6%	4.2
6630 : Fund management activities	21,803	0.5%	68.5%	4.1
6612 : Security and commodity contracts brokerage	36,432	0.8%	67.4%	4.1
6499 : Other financial service activities, except insurance and pension funding, n.e.c.	17,521	0.4%	52.7%	3.2
6619 : Other activities auxiliary to financial services, except insurance and pension funding	50,313	1.1%	39.9%	2.4
6419 : Other monetary intermediation	141,562	3.2%	33.6%	2.0
6622 : Activities of insurance agents and brokers	29,493	0.7%	27.0%	1.6
6629 : Other activities auxiliary to insurance and pension funding	20,387	0.5%	25.0%	1.5
J : Information and communication	**313,433**	**7.0%**	**30.4%**	**1.8**
of which:				
6020 : Television programming and broadcasting activities	20,959	0.5%	81.3%	4.9
5912 : Motion picture, video and television programme post-production activities	7,994	0.2%	72.1%	4.3
6391 : News agency activities	8,278	0.2%	80.1%	4.8
5911 : Motion picture, video and television programme production activities	27,319	0.6%	57.3%	3.4
5814 : Publishing of journals and periodicals	19,478	0.4%	44.2%	2.7
5811 : Book publishing	10,811	0.2%	39.3%	2.4
5813 : Publishing of newspapers	14,159	0.3%	28.0%	1.7
6202 : Computer consultancy activities	69,948	1.6%	26.1%	1.6
6209 : Other information technology and computer service activities	29,242	0.7%	25.5%	1.5
6201 : Computer programming activities	28,098	0.6%	23.9%	1.4

M : Professional, scientific and technical activities	**537,379**	**12.1%**	**26.9%**	**1.6**
of which:				
7021 : Public relations and communication activities	9,024	0.2%	56.5%	3.4
7311 : Advertising agencies	42,582	1.0%	45.1%	2.7
7320 : Market research and public opinion polling	22,133	0.5%	44.9%	2.7
7312 : Media representation	8,598	0.2%	48.6%	2.9
7111 : Architectural activities	23,519	0.5%	40.4%	2.4
7410 : Specialised design activities	12,933	0.3%	31.1%	1.9
7010 : Activities of head offices	66,870	1.5%	30.7%	1.8
6910 : Legal activities	79,961	1.8%	30.6%	1.8
6920 : Accounting, bookkeeping and auditing activities; tax consultancy	83,913	1.9%	28.1%	1.7
7022 : Business and other management consultancy activities	94,381	2.1%	29.1%	1.7
L : Real estate activities	**111,396**	**2.5%**	**26.2%**	**1.6**
of which:				
6832 : Management of real estate on a fee or contract basis	31,899	0.7%	35.8%	2.2
6831 : Real estate agencies	41,863	0.9%	31.5%	1.9
S : Other service activities	**108,319**	**2.4%**	**20.9%**	**1.3**
of which:				
9412 : Activities of professional membership organisations	11,207	0.3%	45.0%	2.7
9411 : Activities of business and employers membership organisations	4,584	0.1%	37.4%	2.2
9491 : Activities of religious organisations	15,788	0.4%	28.3%	1.7
N : Administrative and support service activities	**459,939**	**10.3%**	**20.6%**	**1.2**
of which:				
8230 : Convention and trade show organizers	5,744	0.1%	32.3%	1.9
8010 : Private security activities	56,177	1.3%	31.9%	1.9
7912 : Tour operator activities	7,807	0.2%	30.9%	1.9
7911 : Travel agency activities	14,290	0.3%	25.7%	1.5

7810 : Activities of employment placement agencies	31,487	0.7%	24.3%	1.5
8121 : General cleaning of buildings	96,565	2.2%	24.4%	1.5
8299 : Other business support service activities n.e.c.	44,866	1.0%	24.6%	1.5
R : Arts, entertainment and recreation	**118,971**	**2.7%**	**18.0%**	**1.1**
of which:				
9001 : Performing arts	14,575	0.3%	39.5%	2.4
9003 : Artistic creation	8,517	0.2%	37.0%	2.2
9102 : Museum activities	8,960	0.2%	32.8%	2.0
9200 : Gambling and betting activities	23,092	0.5%	23.7%	1.4
9313 : Fitness facilities	8,438	0.2%	22.7%	1.4
H : Transportation and storage	**217,714**	**4.9%**	**18.0%**	**1.1**
of which:				
5110 : Passenger air transport	37,545	0.8%	51.7%	3.1
4931 : Urban and suburban passenger land transport	48,349	1.1%	37.6%	2.3
5223 : Service activities incidental to air transportation	12,793	0.3%	28.9%	1.7
4910 : Passenger rail transport, interurban	11,502	0.3%	24.5%	1.5
5221 : Service activities incidental to land transportation	17,074	0.4%	23.0%	1.4
I : Accommodation and food service activities	**335,682**	**7.5%**	**18.5%**	**1.1**
of which:				
5629 : Other food service activities	9,995	0.2%	37.0%	2.2
5621 : Event catering activities	52,125	1.2%	25.4%	1.5
5610 : Restaurants and mobile food service activities	167,151	3.8%	23.0%	1.4
O : Public administration and defence; compulsory social security	**215,955**	**4.9%**	**16.0%**	**1.0**
P : Education	**370,209**	**8.3%**	**14.6%**	**0.9**

G : Wholesale and retail trade; repair of motor vehicles and motorcycles	**558,286**	**12.6%**	**13.1%**	**0.8**
of which:				
4729 : Other retail sale of food in specialised stores	6,762	0.2%	30.5%	1.8
4634 : Wholesale of beverages	9,600	0.2%	27.7%	1.7
4645 : Wholesale of perfume and cosmetics	6,003	0.1%	25.3%	1.5
Q : Human health and social work activities	**450,579**	**10.1%**	**12.6%**	**0.8**
F : Construction	**152,367**	**3.4%**	**12.8%**	**0.8**
of which:				
4110 : Development of building projects	19,525	0.4%	27.9%	1.7
E : Water supply; sewerage, waste management and remediation activities	**19,114**	**0.4%**	**10.7%**	**0.6**
B : Mining and quarrying	**4,542**	**0.1%**	**7.0%**	**0.4**
C : Manufacturing	**110,327**	**2.5%**	**4.8%**	**0.3**
D : Electricity, gas, steam and air conditioning supply	**5,247**	**0.1%**	**4.8%**	**0.3**
A : Agriculture, forestry and fishing	**793**	**0.0%**	**0.4%**	**0.0**
Note: 4 digit SIC codes are included where the code accounts for 5,000 or more employees in London and has an index of specialisation greater than or equal to 1.4				

Source: Business Register and Employment Survey;

APPENDIX B: SCENARIOS

Commissioned by the GLA from Volterra Economic Consultancy

1. Summary

Economies grow. The rate of growth varies over time, reflecting a mixture of both long-term productive potential and short-term factors. Short-term factors include the state of the economic cycle, business confidence, and external disruptions such as volcanic eruptions. An important short-term factor is the policy stance of the authorities, where at the moment we see a sharp contrast on the tightness of monetary policy and quantitative easing between the European Central Bank and both the Federal Reserve in the US and the Bank of England.

Long-term growth rates reflect the underlying productive potential of the economy. Actual year to year growth rates may be above or below the long-term trend, reflecting short-term factors, but the average over the long-term is determined by longer-term factors.

There is a strong consensus that the main proximate determinant of long-term growth in developed economies is innovation[88]. The European Commission pays a great deal of lip service to this, but Europe in general still lags considerably behind America in terms of innovation. The concept covers a range of factors. One is learning how to produce more of the same kind of output from a given set of inputs, which is an ongoing process throughout the economy. More dynamically, inventions create the possibility of developing entirely new kinds of output, whether goods or services. Inventions are necessary for growth, but even more important is the ability of an economy to turn inventions from being ideas which enable the creation of new products, to the actual creation of the products themselves.

The rate of innovation is by no means fixed. Much depends upon both the institutional structure of a country, and on the attitudes towards innovation. Innovation is by definition disruptive. It creates new companies and industries, but at the same time destroys existing ones. The willingness of a country to embrace rather than resist change is crucial.

A further factor to consider is the resilience of an economy in the face of large shocks, such as the recent financial crisis. The average annual rate of growth over a period as long as 20 years can be adversely affected if an economy lacks the resilience to recover quickly from such shocks. By definition, these 'black swan[89]' events are extremely difficult to predict in advance. What matters is not the ability to predict them, but the ability of an economy to recover from them. Decades of experience of macro-economic forecasting shows very clearly that the forecasting record is very poor precisely at the times when good forecasts are most needed, in other words immediately prior to major shocks. For example, as late as August 2008, the consensus economic forecast for both 2008 and 2009 were for positive GDP growth in the US, UK and the rest of the EU, even though by then all these economies were already in recession and experiencing negative growth.[90]

[88] By which we mean the successful establishment in the economy of an invention
[89] 'Black swan' theory was developed by Nicholas Taleb to explain the crucial role of, hard-to-predict, and rare events that are beyond the realm of normal expectations in history, science, finance, and technology. An important implication is the non-computability of the probability of the consequential rare events using scientific methods (owing to the very nature of small probabilities)
[90] *Bank of England Quarterly Bulletin* October 2008. A deep reason for the persistent failure of macroeconomic forecasting is given in P. Ormerod and C. Mounfield, 'Random Matrix Theory and the Failure of Macroeconomic Forecasting', Physica A, 280:497-504, 2000

There is a fashionable argument that the sustainable, long-term rate of growth in the West has fallen. According to this argument, there are fewer inventions taking place, and much of the potential of the revolution in information and communications technologies (ICT) has already been exploited.

We regard this argument as being completely wrong. There is a whole range of areas in which recent scientific advances have created the potential for major advances in innovation, such as genomics and energy storage. Further, the ICT revolution is what is known as a General Purpose Technology (GPT). GPTs are truly revolutionary advances which not only alter the whole way in which economies operate, but whose exploitation takes many decades to achieve fully. In the modern era, the first GPT was the steam engine in the late 19th century, followed by electricity in the second half of the 19th century. The internet and its associated developments is the third.

America was the most advanced nation in terms of technology and the ability to innovate throughout the 20th century. The companies which built the internet economy are almost exclusively American, and the United States continues to be at the frontier of technological advance. Europe as a whole lags behind.

Much of the potential of ICT consists of the provision of services, such as the cultural and creative industries, the fastest growing sector of the world economy. The US leads in this area, but the UK also has potential. Essentially, only the US and the UK are major exporters of services as opposed to goods. The one bright spot in Europe is Germany and a small group of countries which are very closely linked to it economically. Here, the model of success has been innovation in manufactured products.

The key question facing the UK economy over the next two decades is not so much whether we are in or out of the EU. Rather it is whether our institutional structures and attitudes evolve to become flexible enough to prosper in the challenging environment of the world economy.

In principle, the UK is very well placed. Our labour market structures are flexible. We are moving away from dependency on the EU in terms of markets in which we trade. Our economy and our exports are much more strongly oriented towards the services sector than any other developed economy, with the exception, of course, of the US.

But no economy, no institutional structure can stand still. Capitalism is a dynamic, evolving system which responds to circumstances. In the 1970s and early 1980s, the UK floundered and our prospects were gloomy. The supply-side reforms of the 1980s, embracing labour market reforms and deregulation, transformed the economy. In the 1990s and early 2000s, Germany inherited our title as the Sick Man of Europe. But, again, major supply-side changes revitalised the economy.

We therefore consider four scenarios:

- The UK remains within an unreformed EU – ‘business as usual’
- The UK stays in the EU, but there are substantial reforms – ‘brave new world
- The UK withdraws, but does so with goodwill on both sides – ‘one regime, two systems’
- The UK leaves, but antagonism exists – ‘little England’

We can observe distinct regimes of growth rates in the long-run historical record of the UK economy. Similarly, there are regimes of inflation which are identifiable. The projections in the scenarios are based upon the similarities with regimes experienced in economic history, against a background for the world economy as a whole which is optimistic.

The percentage differences in growth rates between the scenarios may seem rather small, but over a 20 year period, they cumulate into very substantial numbers. By 2035, for example, the absolute level of real GDP is envisaged as being over £500bn higher in the Brave New World scenario than it is under the Little England one. This is equivalent to around £7,000 for every single person in the country, measured in the prices of 2014, that is stripping out inflation.

These absolute differences are also stark in terms of employment. There are currently just over 32 million workforce jobs in the UK. In the Little England scenario, this falls by 1.25 million. In Brave New World, employment in 2035 is nearly five million higher.

The implications for London are even more dramatic. London is considerably more oriented towards both innovation and the world economy than is the rest of the UK. The strengths of the economy of the city are best shown in the two scenarios in which institutional reform takes place. In contrast, a lack of reform hampers London. This is especially the case in the little England scenario, in which we envisage a gradual long-term relative decline, recalling memories of the dismal decade prior to the supply-side reforms of the 1980s.

London’s economy at present represents some 22.5 per cent of the total economy of the UK. In the little England scenario, this falls to 21.3 per cent, and rises to 23.6 per cent in brave new world. But in real terms, the London economy is 2035 is 48 per cent bigger under the latter than the former, equivalent to around £200bn at today’s prices.

In employment terms, the current 5.2 million jobs in London fall to 4.8 million in the little England scenario, and rise to 6.2 million in brave new world, a difference in the outcomes of 1.4 million jobs.

2. Structure

The key question is the rate of economic growth which London and the UK can achieve over the next two decades. Section 3 of the report is devoted to a fairly lengthy discussion of the determinants of growth.

Economic growth matters. Even modest rates of growth have dramatic effects over time. During the 20th century, for example, the average annual growth of the British economy, taking into account inflation, was only around two per cent a year. But this was sufficient to increase per capita income four-fold, and at the same time permit a fall of some 45 per cent in annual average hours worked, with for example an increase in holiday entitlement from at best a single week a year to four or five weeks, and to finance the welfare state.

It is fashionable in some circles to criticise the concept of economic growth. A whole literature has sprung up on why gross domestic product (GDP) should not be the principal target of government policy. Good governments have always known this have always known that Bill Clinton was completely wrong when he said 'it's the economy, stupid!' Good economists have also known this for many years. Simon Kuznets, the pioneer of measuring GDP back in the 1930s and 1940s, understood this perfectly. But whatever the intellectual arguments, the experience of the past few years has shown that Western electorates are not at all enamoured of the lack of growth which has taken place.

The questions of whether the UK remains within the EU and, if so, on what terms need to be framed within the context of the potential long-term rate of growth of the economy.

There are no exact scientific methods that policy makers can exploit to control growth, and it is misleading to think otherwise. Economists simply know less about how the economy works than we might like to think. This does not mean that government policy has no influence on the growth rate of the economy. While there is no guaranteed formula for success, politicians should be confident that the right policies can create an environment conducive to faster economic growth. In particular, we know the kinds of policies which fail. That is the lesson from history.

The large literature in mainstream economics about economic growth does not enable us to define a set of tools to manipulate the growth rate. Nonetheless, it does help to identify the factors which generate growth in the long-term and which help to set the context.

Section 3 is devoted to the underlying, long-run trend in growth. However, as the recent financial crisis has shown, major shocks can have impacts over a number of years, and can therefore have a distinct impact on the average annual growth of GDP over a 20 year period.

Section 4, which is much shorter, considers the important issue of the resilience of economies to shocks. Adverse shocks occur frequently. In the decade preceding the crisis, we saw, for example, Russian bond defaults, the crisis over long term capital management, 9/11 and the collapse of the dot com boom. Western, market-oriented economies are in general very resilient to shocks, none of these major events precipitated a full blown recession. But there are features which make economies more or less resilient.

Section 5 is devoted to a specific consideration of the London economy. The analysis flows from the previous sections on the long run trend rate of growth and the resilience of an economy with respect to major shocks.

In section 6, we set out the key 'stylised facts' of our analytical framework for generating different scenarios. Here, we examine the likely importance of the EU economies both in the world as a whole and to the UK in particular in 2035. We also consider evidence of the different growth and inflation regimes in the UK's economic history, which we use in the construction of the scenarios in section 7.

3. Economic growth in the long-run

3.1 The mainstream view in economics

The key factors in mainstream economic analysis are:

- the size of the potential working population
- the skill level of the population (its human capital)
- the level of productive capital available
- technological change, or innovation as it is also described

Economists have developed a concept known as the 'growth accounting framework for analysing growth. There are two generally used measures of productivity: labour productivity and total factor (or multifactor) productivity (TFP or MFP). Labour productivity is a measure of the total gross output (or value added) produced by each worker. Productivity per worker hour is derived by dividing gross output or value added by the total number of hours worked.

The growth accounting framework has been the standard approach used by national statistical office to account for the different contributions to economic growth. It breaks down the sources of economic growth into the contributions from increases in capital, labour and other identifiable factors. When these factors have all been accounted for, the remainder of economic growth (the residual, sometimes called the Solow residual) is described as total factor productivity or multi-factor productivity. This is conventionally attributed to technological change, although in reality it includes changes in work organisation and other non-measured inputs (for example improvements in workforce skills that cannot be measured by qualifications).

There are many practical problems involved in implementing this growth accounting framework. For example, for it to produce reliable estimates of the contribution of capital and labour to economic growth, these need to be measured accurately. Labour inputs (hours worked) tend to be measured fairly reliably, but capital stock (or more accurately the services deriving from the capital stock) can represent more of a challenge. It is relatively straightforward to measure investment in new capital equipment (buildings, machines, tools, locomotives, computers), but the rate at which old equipment is scrapped is less clear. Moreover, the same equipment can be used more or less intensively, delivering different levels of output. Even the simplest task (measuring new investment) can be problematic when the cost of capital is falling. Unless prices of capital equipment are measured accurately the volume of investment can be underestimated when prices are falling as has been happening to information and communications technology (ICT) equipment over the past twenty years. This means that even in its own terms, growth accounting may not accurately capture the non-labour contributions to growth.

In addition, there are unresolved issues arising from how to measure output itself, especially in industries where innovation is rapid. National accounts institutions, such as the Office for National Statistics in the UK, typically collect information about output measured in current prices. A key task is to divide this between how much of any increase in output is due to inflation, to rising prices, and how much reflects a genuine increase in the amount which is produced, so-called 'real' output in the jargon of economics. Leading econometricians such as Hausman[91] argue that in industries in which innovation is important, inflation is systematically overestimated, and as a result real growth is underestimated.

The issue of measuring (or more usually failing to measure) changes in the quality of either outputs or inputs, is at the heart of the current debate around the causes of growth, and hence its future potential. Although the growth accounting framework is recognised as having severe shortcomings, nevertheless it is still widely used by economists as a method of estimating long-term growth potential, so it cannot be ignored.

There is in fact a surprising amount of consensus in the literature about the causes of growth, especially in developed economies. The main driver of growth in the empirical literature is not the inputs into the process of production, labour and capital, but the 'residual'. In plain English, it is innovation.

It is recognised that, in what Marx called the process of 'primitive accumulation', high investment levels can stimulate growth in developing economies. The Soviet Union, for example, industrialised by ruthlessly holding down the living standards of the population and directing resources into investment. A similar process has been followed in China. Paul Krugman wrote a famous article in 1994, 'The Myth of Asia's Miracle', in which he pointed out that the East Asian growth model, using Singapore as an exemplar, had been to that date essentially based upon massive increases in inputs rather than to innovation. But in developed economies, innovation is the key.

In an important sense, this empirical finding is rooted in the basic theoretical approach[92]. Central to the model is the concept of diminishing marginal returns to inputs. Thus each additional piece of equipment (locomotive, robot, handheld computer) or human capital (additional skills and qualifications of the workforce) adds less to total output than the similar item which preceded it. This means that the constraints of the model eventually require innovation, which takes place outside the model, in order for any meaningful growth to occur.

Economics has recognised this issue, and has developed the concept of 'endogenous growth'. Gordon Brown's use of the phrase 'post-neo-classical endogenous growth' was widely derided at the time. But endogenous growth theory represents a serious attempt by economists to explain innovation. Innovation is seen as the key to growth in developed economies, and what was for decades the mainstream theory of growth does not explain it, and in essence requires it to be unrelated to anything in the economy. It just appears like manna from heaven.

[91] For example, J.A. Hausman, 'Sources of Bias and Solutions to Bias in the CPI', *Journal of Economic Perspectives*, Vol. 17 No 1: 23-44, Winter 2003

[92] The seminal articles are R.M. Solow, 'A Contribution to the Theory of Economic Growth', *Quarterly Journal of Economics*, 70: 65-94, 1956 and T.W. Swan, 'Economic Growth and Capital Accumulation', *Economic Record*, 32: 334-361, 1956

3.2 Endogenous growth

Endogenous growth is based on factors which are both internal to the economy and can be influenced for good or ill by governments. The essential features of this approach are:

- There are increasing returns to scale from new capital investment
- Investment in research and development is a key source of technical progress
- Investment in human capital is an essential ingredient of growth. The rate of return from human capital investment (that is improving the skills and wellbeing of the potential working population) can be higher than the rate of return to investment in physical capital
- Investment in both human and physical capital can generate spillover effects in other firms and sectors so that the social rate of return from such investments is significantly larger than the private rate of return to whoever does the investing
- Government policies and actions which promote competition in markets and help to stimulate innovation can increase the long-term potential rate of growth. These include:
    - Protection of property rights and patents
    - Incentives to engage in research and development
    - Encouragement to new businesses as a source of innovation in both products and ideas

The role of institutions in fostering or inhibiting growth is often downplayed within economics. But in terms of long-term growth potential, institutional factors such as the way in which output is organised (particularly related to the skills and vision of entrepreneurs and managers), the morale and motivation of the workforce and the role of government, both in terms of the tax regime, and in terms of regulation of both product and labour markets, are vital.

Most of the above list of concepts are straightforward, but it is worth expanding the perhaps less familiar concept of spill-overs. Growth accounting does not allow for complementarities or spill-overs. If new capital equipment requires a particular set of skills in the workforce who are using the equipment, the returns to both the equipment and the enhanced skill are dependent on each other. Without the worker skills the machine will not deliver. But without the machine the workers' extra skills make no contribution to output. New equipment can support new ways of organising work which is more efficient, but which may be unrelated to the machine itself. For instance by making it feasible to track and forecast shopping patterns through the day, week and month, retailers can match their workers' shift patterns more closely to demand.

Workers still do the same job, but their hourly productivity has increased because they have less down time during their working shifts. They do not work directly with the monitoring equipment, but it has enhanced their productivity, unbeknown to them.

In the same way, growth accounting also fails to capture spill-overs/externalities either between other firms in the same sector (ie not the firm doing the investment) or by firms in different sectors. So, for example, if investment in transport firms enables them to accommodate more flexible deliveries, the productivity gains in the firms using the transport (say by holding fewer stocks, thereby releasing both space and labour) cannot be attributed to the investment by the transport firms, even though it is the cause. The transport-using firm may be paying exactly the same as before for transport services (so the measured volume appears to be unchanged) but the *quality* of that service has changed in such a way that it changes the way work is organised in the transport using firm.

3.3 General purpose technologies

Spill-overs are important in their own right, and for the role which they play in the concept of a general purpose technology (GPT). It is this concept which is a key element of much of the current debate about the long term rate of growth in the Western economies.

A general purpose technology (GPT) is a technology which becomes pervasive across a wide range of industries. The essence of GPTs is that they are widely adopted, that they improve over time, and that the price of the technology falls as it becomes more widespread. They tend to lead to innovation in both products and processes across a wide range of industries. Some of these innovations represent marginal improvements to existing products. Others incorporate GPT in entirely new products, both those aimed at consumers and those which are innovative capital goods.

The adoption of GPT across the economy can lead to turbulence as existing products and processes are challenged and established production techniques for both goods and services become obsolete. It is here in particular that the role of institutions in growth is important. In the presence of a disruptive general purpose technology, in essence societies can either embrace or resist change. Institutional structures and regulations will reflect the preference of society. The Luddites of the early 19th century have become a classic example of resistance to pervasive innovation, though in this instance of course they failed. The England of the Industrial Revolution embraced innovation.

The first GPT of the modern era is widely regarded as being the steam engine, the technology which the Luddites were trying to resist. The second was the production and harnessing of electricity.

There is a crucial current debate around two concepts. First, the related questions of whether information and communications technologies (ICT) really are a third GPT, and if so whether most or all of the impact has already worked its way through the system. Second, whether innovation is in some deeper sense becoming exhausted. Huge numbers of discoveries have been made over the past two centuries or so, and disruptive innovation has been an ever-present feature of the world. But how many are left to be made? Are we running out of new ideas?

The latter issue is a rather odd one, given that the scope and scale of scientific invention is exceptionally difficult to predict. *The Economist* of 12 January 2013 devoted considerable space to the topic, under the heading 'Has the ideas machine broken down?' Luminaries such as Peter Thiel, one of the founders of PayPal, were quoted as saying that innovation in the USA is 'somewhere between dire straits and dead'. The article itself ended on a much more optimistic note, but the idea is taken seriously in many quarters. One reason for this, of course, may simply be that the experience of the relatively recent past influences the prevailing mood. A very recent paper, for example, in the leading scientific journal *PLOS-ONE* shows that the mood in literature during the 20th century was influenced heavily by the level of economic misery during the previous decade in America, Britain and Germany[93].

Without attempting to try and predict further scientific inventions, we might usefully list a number of potentially disruptive technologies which already exist:

- Internet of Everything
- Mobile internet
- 3D Printing
- Knowledge work automation
- Advanced Robotics
- Genomics
- Advanced materials
- Cloud technology
- Self-driving vehicles
- Renewable energy
- Energy storage
- Advanced oil and gas recovery

[93] R.A. Bentley, A Acerbi, P Ormerod and V Lampos, 'Books average previous decade of economic misery', *PLOS ONE*, 8 January 2014. http://dx.plos.org/10.1371/journal.pone.0083147,

Just to mention one of these briefly. The revolution in biotechnology and genomics almost certainly mean that the first human to live to the age of 150, or even 200, has already been born. There seems no shortage of ideas and innovations which have the potential to cause major disruptions and transformations.

Returning now to the first issue, that of the impact of information and communications technologies. As noted, there is currently a debate among economists (sparked by Robert Gordon 2000 and 2012)[94] as to whether ICT really is the third GPT and whether the full impact of ICT has yet worked its way through. Essentially Gordon argued that the impact of ICT on production and product innovation had worked its way through by 2004 and its sole unexploited use is as a source of entertainment. Others disagree strongly.[95] Gordon argues that over the next two decades the effect of innovation will not offset what he calls the 'headwinds' which will tend to reduce growth: an ageing population, declining educational standards, persistent inequality, globalisation, energy/environment, and the overhang of consumer and government debt.

Many of these are contested, and we take an optimistic view about the future potential of ICT for many reasons. For example, in the specific context of Gordon's arguments, several of the new technologies listed above are related to reducing or managing energy use, or exploiting new sources of energy. The idea that productivity declines with age is heavily contested in evidence derived from the workplace.[96] There is also a growing tendency for people in age groups which have traditionally retired (those in their late fifties, sixties and early seventies) to continue in paid work. Gordon also argues that ICT innovation since 2000 has focused on small entertainment devices (essentially smartphones and tablets) and that the contribution of the internet to e-commerce was over by 2005. This ignores the evidence, set out in section 3.4 below, of the growing importance of ICT in healthcare, retailing and business services. In its contribution to GDP Gordon viewed ICT purely as substituting for labour, whereas in practice there is growing evidence of its contribution to increasing output by improving the efficiency of other inputs and the quality of outputs.

Koutroumpis uses data for 22 OECD countries from 2002 to 2007 (i.e. covering the period when Gordon argues that the impact of ICT had run its course) to estimate the impact of a single aspect of ICT – broadband penetration - on GDP. Overall this study found that GDP increases by 0.25 percentage points for every ten percentage point increase in penetration. Crucially this study found that there are threshold effects. Once broadband penetration reaches 30 per cent of the population its impact on GDP doubles. The author attributes this to network effects: a critical mass has to be reached before the technology can be fully exploited[97].

[94] R.J. Gordon, 'Does the New Economy Measure up to the Great Inventions of the Past?' *Journal of Economic Perspectives*, 14(4): 49-74, 2000; R.J. Gordon, 'Is US Economic Growth Over? Faltering innovation confronts the six headwinds.' *NBER Working Paper 18315, 2012*. http://www.nber.org/papers/w18315

[95] See, for example, OECD, 'Measuring the Internet Economy: A Contribution to the Research Agenda', *OECD Digital Economy Papers*, No. 226, OECD Publishing, 2013. doi: 10.1787/5k43gjg6r8jf-en
http://www.oecd-ilibrary.org/science-and-technology/measuring-the-internet-economy_5k43gjg6r8jf-en; D.W. Jorgenson, M.S. Ho, and K.J. Stiroh, 'A Retrospective Look at the US Productivity Growth Resurgence', *Journal of Economic Perspectives*, 22(1):3-24, 2008

[96] A. Weyman, P. Meadows, and A. Buckingham, 'NHS Working Longer Review: Audit of Existing Research.' *NHS Employers*. 2013. http://www.nhsemployers.org/SiteCollectionDocuments/NHS%20WLR%20-%20Audit%20of%20existing%20research.pdf

[97] P. Koutroumpis, 'The Economic Impact of Broadband on Growth: A Simultaneous Approach', Telecommunications Policy, 33: 471-485, 2009.

For example, evidence in favour of the hypothesis that firms that use ICT more intensively also tend to innovate more can be found in Spieza (2011)[98], where, linking firm-level data from the ICT Business Survey to firm-level data from the Innovation Survey for eight OECD countries, it is shown that firms that use ICT more intensively are more likely to obtain new-to-the-firm (but not new-to-the-market) product innovations, organizational and marketing innovations, both in manufacturing and services.

Ultimately, whether ICT is a GPT is a matter of judgement. The full impact of GPTs takes decades or even centuries to feed through. Without a previous GPT, the printing press, for example, the literary genre of the novel could not have been developed, but this was over two hundred years after the invention of printing. The steam engine in the late 18th century made possible the creation of the railways in the decades around the middle of the 19th century. And the railways themselves made feasible massive transformations in the economy. DeLong[99], for example, identifies the ‘killer app’ in the mail order businesses of Montgomery Ward and Sears Roebuck, which thanks to the railways could offer ‘big city goods at near big city discounts’ across the entire United States. Janeway[100], who himself made a personal fortune by investing in and helping create the companies which built the modern internet economy, goes on: ‘the railroads drove the westward movement of population and property development, the re-architecting of industrial organization, the evolution of accounting practices and principle, the emergence of nationally branded goods and the creation of liquid exchanges for securities – in short, they transformed the core commercial and industrial and financial structures of the [American] nation’ (p.199). All these followed from the innovations in steam technology almost a century previously.

At a more fundamental level, a view which dismisses the impact of ICT on the grounds that its sole future exploitation is entertainment does seems slightly bizarre. The cultural and creative industries, using a market-based definition[101], are the fastest growing sector of the developed economies. Massive companies such as Google and Facebook have evolved very rapidly in this sector, and both competition and innovation remain intense. Entertainment consumption is shifting from the purchase of concrete goods (a television, a CD) to the purchase of ephemeral services (Netflix, music streaming).

There is also the issue, discussed above, of how to estimate the output of such industries. The framework of the national accounts was developed in the 1930s and 1940s, when a much larger part of the economy consisted of the production of manufactured goods, in general using stable, well-established technologies. The path-

[98] V. Spiezia, ‘Are ICT Users More Innovative?: an Analysis of ICT-Enabled Innovation in OECD Firms’, Economic Studies, Vol. 2011/1, 2011. doi: 10.1787/eco_studies-2011-5kg2d2hkn6vg
[99] J.B. DeLong ‘Profits of doom’, Wired, 11(4), April 2003
[100] W.H. Janeway, ‘Doing Capitalism in the Innovation Economy’, Cambridge University Press, 2012
[101] J. Potts, J. Hartley, S. Cunningham & P. Ormerod, ‘Social network markets: a new definition of the cultural and creative industries’, Journal of Cultural Economics, 32, 167-185, 2008.

breaking nature of innovations in areas like ICT presents much more difficulty in terms of estimating their value to consumers. All new products, or quality improvements to products, will create a benefit to consumers. With new products, the consumers gain because they are now able to use a product which was previously unavailable. At any given price for the product, there are some consumers who value it at that price, and some who value it at a higher price. The benefit gained by consumers due to the price being lower than their personal valuation of the good, creates a consumer surplus.

The difficulty with new goods is how to value what consumers would have been willing to pay for the good in the pre-introduction period. A widely accepted way of doing this is to treat the absence of a good as equivalent to it being available in the previous period, but at a price which would have driven demand to zero. That is to say that the price was so high that no consumers would be willing to pay it. Hausman estimated that even back in 1999, the benefits to US consumers of broadband were already of the order of $100bn, almost one per cent of GDP.

The final reason for our optimistic view is the tremendous potential which innovations in a whole range of areas offer, as we discussed above.

3.4 Differences between US and EU long-term growth rates

Following twenty years of slow productivity growth, the United States experienced a ten to fifteen year period of rapid productivity growth starting in the early 1990s. This is frequently attributed to the role of ICT. This was particularly marked after, by which point the penetration of ICT across a wide range of products and services had become pervasive.

According to one key study[102] from 1973 to 1995 the average annual growth rate of labour productivity was 1.49 per cent, which became 2.7 per cent for the period -2000 and 2.5 per cent for the period 2000-2006. The share of this productivity growth attributable to ICT was 43 per cent for the period 1971-1995, and 59 per cent for the period 1995-2000.

Up until 2000 a large part of the growth in productivity was derived from the ICT producing sector, but after 2000 most of it was derived from other sectors using ICT both to improve their processes and to develop new products and services.[103] Bosworth and Triplett (2007)[104] differ in their timing but also stress the central role of ICT use, particularly in services. They suggest that after 1995 80 per cent of US productivity growth could be attributed to increased ICT use in services, particularly wholesale, retail, finance and health.

[102] D.W. Jorgenson, M.S Ho, and K.J. Stiroh, 'A Retrospective Look at the US Productivity Growth Resurgence', *Journal of Economic Perspectives*, 22(1):3-24, 2008.
[103] D.W. Jorgenson, M.S Ho, and K.J. Stiroh, Information Technology and the American Growth Resurgence, *Cambridge MIT Press Books* 2005; S. Basu, J.G Fernald, N. Oulton, and S. Srinivasan, 'The case of the missing productivity growth: or, does information technology explain why productivity accelerated in the United States but not the United Kingdom?', *Working Paper Series WP-03-08, Federal Reserve Bank of Chicago, 2003*;
C. Corrado, P. Lengermann, E.J. Bartelsmann and J.J. Beaulieu, 'Sectoral Productivity in the United States: Recent Developments and the Role of IT', *Finance and Economics Discussion Series, Federal Reserve Board, Washington D.C.*, 2007-24, 2007
[104] B.P Bosworth and J.E. Triplett, 'The Early 21st Century US Productivity Expansion is Still in Services', International Productivity Monitor, Centre for the Study of Living Standards, 14:3-19, 2007.

The acceleration in productivity (measured per worker or per hour) observed in the United States post-1995 has not happened in the EU[105]. Between 1995 and 2006 US productivity per hour grew by an average of 2.3 per cent a year, while that in the EU grew by only 1.5 per cent. Hours worked grew in the EU over this period relative to the US, so that productivity per worker showed a smaller difference (2.1 per cent). So a larger part of the observed growth in the EU could be accounted for by increased labour inputs. For comparison, the impact of the supply-side reforms of the 1980s meant that the UK outperformed both, with productivity per hour growing at 2.4 per cent a year from 1995-2006.

It is argued that the increasing US-EU productivity growth gap after 1995 is due to the role of ICT. This hypothesis argues that the EU has not benefited from the higher rates of aggregate TFP growth and ICT capital deepening that have been observed in the US[106]. In particular, van Ark et al argue that the EU has seen much lower levels of ICT investment in services. This has been partly offset by improvements in the skill composition of the labour force. The difference in total factor productivity growth (the unexplained residual usually attributed to technological change) went from 0.5 per cent from 1980 -1995 to 1.4 per cent for 1995-2004 in the US, while in the EU it was 0.9 per cent for 1980-1995 but only 0.3 per cent for 1995-2004. Trying to isolate the contribution of ICT to labour productivity growth in the EU and the US, van Ark et al. report that it went from 1.3 per cent for 1980-1995 to 0.8 per cent for 1995-2004 for the EU. For the US it went from one per cent from 1980-1995 and 2.2 per cent from 1995 to 2004.

Colecchia and Schreyer[107] also stressed the role of the use of ICT in services as being one of the key explanations for differences in productivity performance across OECD countries. The United States, Australia, Finland and Canada all had higher diffusion rates and higher productivity growth than other countries. Importantly they argue that it is ICT use, not ICT production, which is the key driver. Countries do not have to produce their own ICT equipment. They just have to use it to good effect. Others concur[108].

There were marked differences in the productivity performance of EU countries in the post-1995 period. The UK and Finland had performance close to that of the United States, where as other EU countries, notably Spain and Italy had much poorer labour productivity performance. Taking a cross-EU view across different sectors van Ark et al show that the key service sectors responsible for the EU-US labour productivity gap are precisely those which have been identified in the US as deriving large productivity gains from ICT use: retail and wholesale trade and financial and business services. These latter in particular have grown faster and employ considerably more people than does the financial services sector.

[105] B. van Ark, M. O'Mahony and M.P. Timmer, 'The Productivity Gap between Europe and the United States: Trends and Causes', *Journal of Economic Perspectives*, 22(1):25-44, 2008
[106] F. Daveri, 'Information Technology and Productivity Growth Across Countries and Sectors', IGIER (*Innocenzo Gasparini Institute for Economic Research*), *Bocconi University*, *Working Papers 227*, 2003. ftp://ftp.igier.uni-bocconi.it/wp/2003/227.pdf
[107] A. Colecchia, and P. Schreyer, 'ICT Investment and Economic Growth in the 1990s: Is the United States a Unique Case? A Comparative Study of Nine OECD Countries', *Review of Economic Dynamics*, 5(2):408-442, 2002.
[108] For example, N. Oulton, 'Long term implications of the ICT revolution: applying the lessons of growth theory and growth accounting'. *Economic modelling*, 29 (5):1722-1736, 2012.

Gust and Marquez (2004), analyse whether the lower investment in ICT and the lower productivity impact of ICT in the EU can be related to the regulatory framework for both products and the labour market in the EU relative to the one of the US. They conclude that product regulation in the EU creates barriers to entry, and reduces the incentives to invest and adopt new technologies. Similarly, rigidities in the labour market tend to reduce the ability of firms to adjust their workforce and hence discourage ICT adoption and reduce the impact of ICT on productivity[109]. Similarly, Conway et al. (2006) find that the strength of regulation has a negative effect on productivity growth in the ICT-intensive sector[110] (which the studies cited above have identified as the key drivers of productivity growth). They conclude that a higher level of regulation tends to depress productivity growth especially in more technologically advanced sectors.

Others have tried to identify spill-over effects. Using micro-data, Brynjolfsson and Hitt, 1995 and Bloom et al., 2010 suggest that ICT capital tends to exhibit excess returns.[111] Part of this is due to spill-over effects, where other sectors benefit from ICT investments or to complementarity, where changes in workforce skills and in the organisation the production of goods and services mean that the sum is greater than the parts. It can also be due to errors in measuring inputs correlated with ICT. As Brynjolfsson and Hitt, 2000 argue:

> *'a significant component of the value of information technology is its ability to enable complementary organizational investments such as business processes and work practices;...these investments, in turn, lead to productivity increases by reducing costs and, more importantly, by enabling firms to increase output quality in the forms of new products or in improvements in intangible aspects of existing products like convenience, timeliness, quality, and variety'.*[112]

Wolff concluded for the US that spill-over effects have become markedly more important with ICT so that the indirect rate of return to R&D (37 per cent) is now nearly twice the direct rate of return (22 per cent).[113]

There is clear evidence that the full benefits of ICT can only be realised where there is also investment in complementary assets and systems, such as human, organisational and managerial capital. The size of these complementarity effects tends to be higher for the US and the UK than for other EU countries.[114] These complementarities underline the conclusion that single lever policies are ineffective in creating the conditions for growth. It is a set of inter-related factors which matter.

[109] C. Gust and J. Marquez, 'International comparisons of productivity growth: the role of information technology and regulatory practices', *Labour Economics*, 11: 33-58, 2004
[110] P. Conway D. de Rosa., G. Nicoletti, and F. Steiner, 'Regulation, Competition and Productivity Convergence', *OECD Economics Department Working Papers no.* 509, 2006
[111] E. Brynjolfsson, L.M. Hitt, 'IT as a Factor of Production: the Role of Differences among Firms', *Economics of Innovation and Technology*, 3:183-198, 1995; N. Bloom, M. Draca, T. Kretschmer, and R. Sadun, 'The economic impact of ICT. Final Report', *Centre for Economic Performance*, SMART N 2007/0020, 2010
[112] E. Brynjolfsson and L.M. Hitt, 'Beyond Computation: Information technology, Organizational Transformation and Business Performance', *Journal of Economic Perspectives* 14: 23-48, p24, 2000
[113] E.N. Wolff, 'Spillovers, Linkages, and Productivity Growth in the US Economy, 1958 to 2007' *NBER Working Paper* No. 16864, 2011
[114] F. Biagi, 'ICT and Productivity: A Review of the Literature', *Institute for Prospective Technological Studies Digital Economy Working Paper* 2013/09, 2013. http://ftp.jrc.es/EURdoc/JRC84470.pdf

4. Resilience in responding to shocks

Over the medium to longer term, it is always possible that economies will be subjected to major shocks such as that of the recent financial crisis. The OECD has developed a list of responses, which were developed in the context of adjustment to changes in trade, but can also be adapted for use in other contexts.[115]

The key factors in mainstream economic analysis are:

- Macroeconomic policies that promote stability and growth
- Labour market policies that help develop workers' skills and enable labour mobility across occupations, firms, industries and regions while providing adequate assistance to those who experience adjustment costs as a result of structural change
- An efficient framework of regulation that achieves regulatory objectives while keeping regulatory burdens on enterprises to the necessary minimum, fosters competition and helps ensure genuine market openness
- An institutional and governance framework that will favour structural reform, while enhancing social dialogue and public understanding and acceptance of reform measures
- Liberal trade and investment policies that support structural adjustment by contributing to growth, innovation and competitiveness and are implemented gradually enough to enable affected parties to adapt and quickly enough to avoid policy reversal. Because of downstream linkages, particular benefits are likely to arise from the liberalisation of trade in services; if account is taken of services barriers, the effective rate of protection for some agricultural and manufacturing industries actually turns negative, meaning that services barriers contribute to effective taxation, rather than protection, of these industries

We can usefully contrast the experience after the fall of the Soviet bloc at the end of the 1980s of, say, Poland with Russia, and the Czech and Slovak republics with the Ukraine. Poland and the Czech and Slovak societies recognised much more rapidly that fundamental change was necessary, and oriented themselves towards the market-based systems of Western Europe. In Poland, for example, real GDP fell by a total of 14 per cent in 1990 and 1991. However, growth resumed, and this shortfall was more than

[115] OECD, '*Trade and Structural Adjustment*', 2005. http://www.oecd.org/general/34753254.pdf

made up for by 1995. In Russia, which remained much more insular and impervious to the need for change, output is estimated to have fallen by over 40 per cent from 1990-1996. In the Ukraine, GDP is estimated to have fallen every single year between 1990 and 1999, with a cumulative fall of over 60 per cent. In what is now the Czech Republic, output fell by some 15 per cent 1990-92, but this fall was reversed by 1996. In Slovakia, a considerably larger reduction in GDP is estimated to have taken place, one of 26 per cent in 1990-1993. But even this dramatic collapse was eliminated by 1997.

The reductions in output in the West during the financial crisis were not by any means as dramatic as those which took place in the former Soviet bloc in the early/mid 1990s. But the profound impact of the crisis is reflected in the time taken to regain the previous peak level of GDP. Analysing a total of 191 recessions in 17 Western countries since 1871[116], on 151 occasions real GDP had returned to its previous peak level within one or two years. On a further 15 occasions, the peak level was regained after three years. Only 11 times out of the total sample of 191 was it not regained after five years.

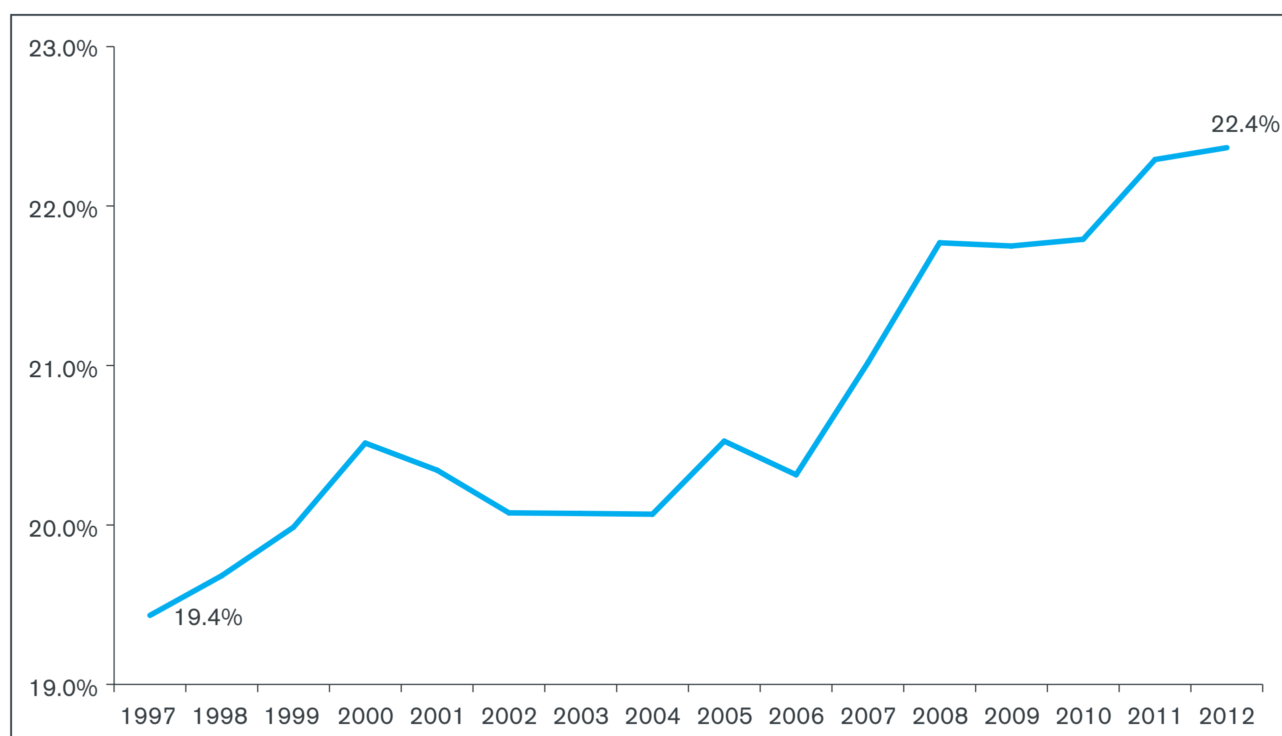
By the spring and early summer of 2008, GDP had begun to fall in most OECD countries. During 2011, the previous peak value of output was regained in both the US and Canada. In a historical context, this was a long recession. The experience of the EU economies has been much more mixed. A group in what we might term the German sphere of influence – Germany, Austria, Netherlands, Belgium – regained the previous peak over a very similar time frame to that of America. The UK and France remain below, even over five years after output began to fall, but whereas the UK now seems to be recovering, growth in France has stalled. And the situation in the countries of Southern Europe is dire. In Italy, GDP remains almost ten per cent below its previous peak, Portugal over seven per cent, and Spain eight per cent. There does seem to be a major fault line within the EU.

[116] P. Ormerod, 'Risk, recessions and the resilience of the capitalist economies', *Risk Management*, 12, 83-99, 2010

5. The London economy[117]

London is by some margin the most dynamic region of the UK economy. It now represents over 20 per cent of the UK economy as a whole, and its importance has grown steadily over the past 15 years or so. Crucially, even the financial crisis of 2008/09, which might have been thought would upset this trend, has not prevented further expansion. The London economy appears to be very resilient.

Figure 5.1: London's share of UK gross value added, 1997-2012



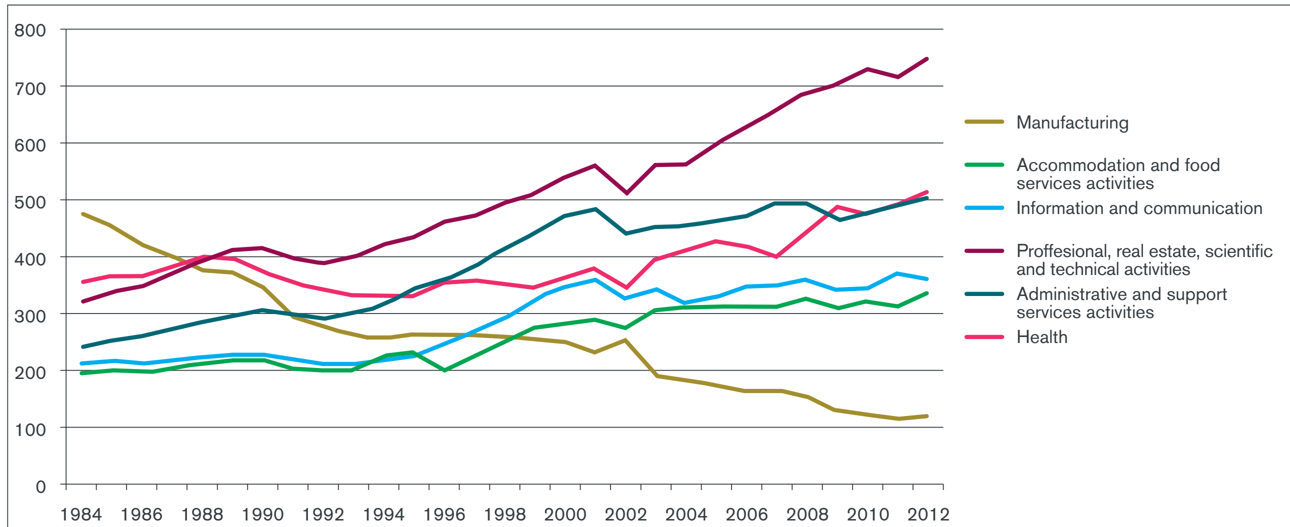
Source: Regional Accounts and ONS

The OECD study on resilience discussed in section 4 contains the reasons for this resilience. London is:

- outward looking
- open to innovation
- encourages labour mobility
- strongly oriented towards services

[117] OECD, '*Trade and Structural Adjustment*', 2005. http://www.oecd.org/general/34753254.pdf

Figure 5.2 shows the evolution of employment in the city over the past 30 years.



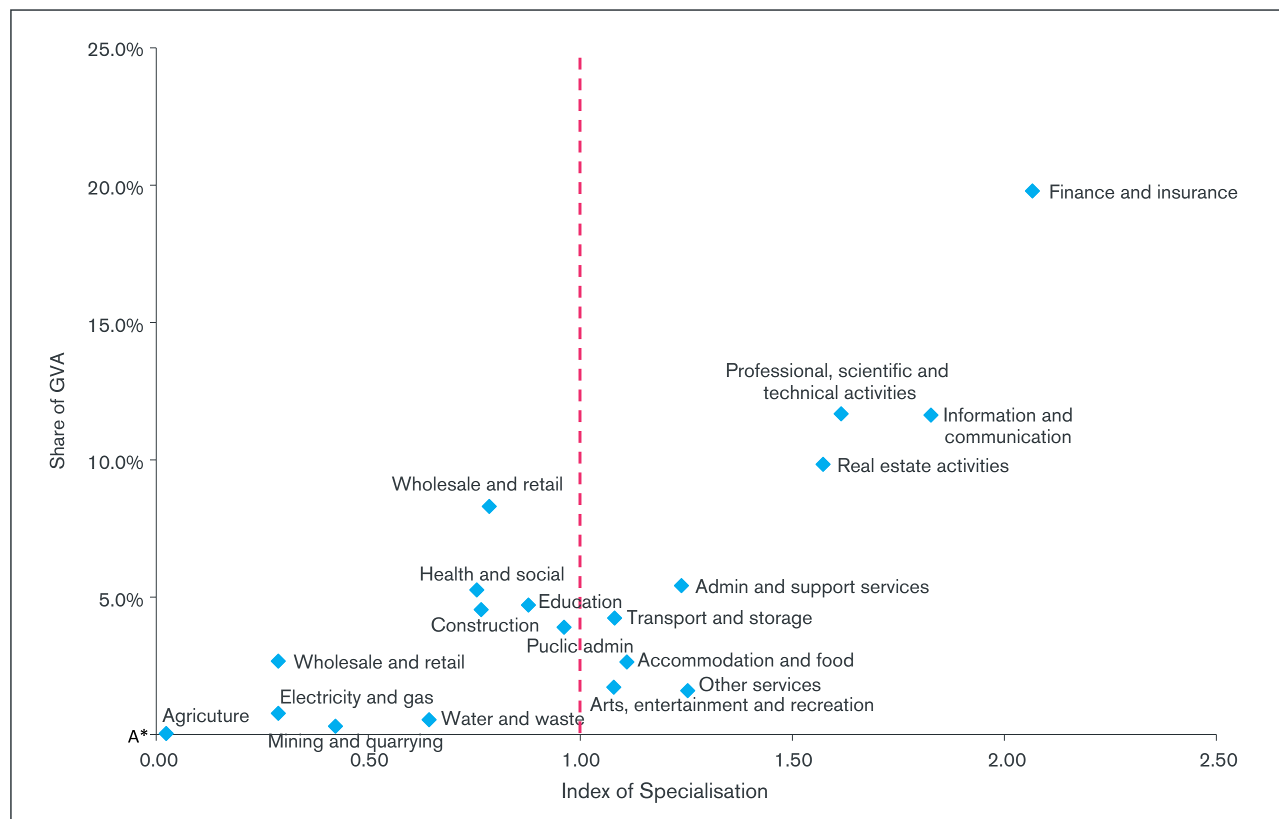
Source:1996 to 2012: ONS Workforce Jobs series; before 1996: GLA Economics using various ONS sources and modelling assumptions

A specific aspect of the chart is the dramatic growth in employment of the professional, scientific and technical services sector. More generally, a striking feature is that fact that the trends in each of the sectors in the chart are well established, and were not really affected by the severe economic recession in the UK in 2008/09.

An informative way of emphasising the differences between employment structure in London and the rest of the UK has been provided by the economics team at the GLA. They calculate an Index of Specialisation in the following way. For each sector, the share of employment in the total is calculated for both London and the rest of the UK. The London share is then divided by the UK share to give the index. If the Index of Specialisation is greater than 1, London has a greater share of its total jobs in the sector being examined than does the rest of the UK. As such it can be regarded as an area in which London has some specialisation.

This is plotted in Figure 5.3.

Figure 5.3: London's broad sectors: Index of Specialisation (relative to the rest of Great Britain) and share of London's total output (2012)



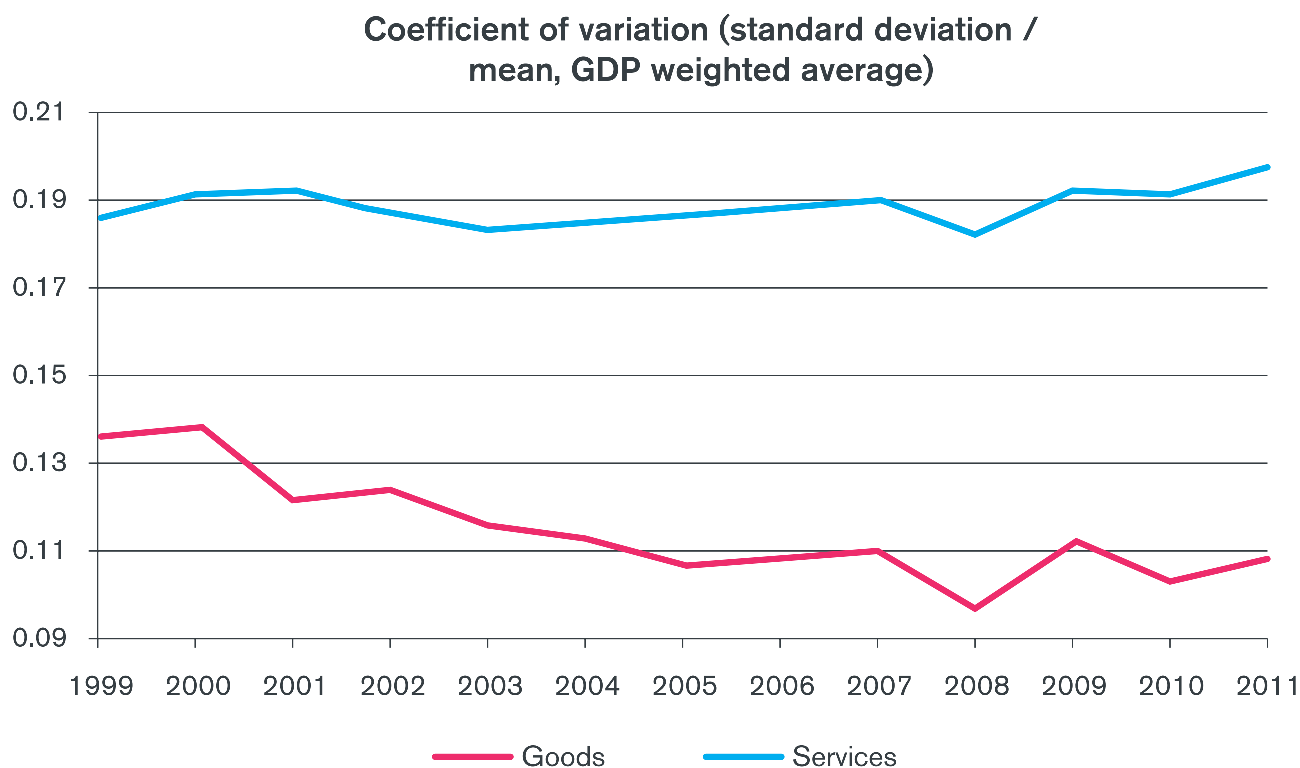
Source: ONS: Business Register and Employment Survey; UK Regional Accounts

London's specialisation, relative to the rest of the UK, is highest in finance and insurance and the information and communication sector. The latter, which is now the second largest in the city, is exactly the sector which has developed the General Purpose Technology described in section 3. Again, in that sector we list other areas of activity where rapid and transformative innovation is either happening already or has the clear potential so to do. London's specialisation in professional, scientific and technical activities means that the city is well placed to profit from opportunities here.

Given London's emphasis on service sector activities, reform within the EU is particularly important. The European Commission states[118] that the level of intra-trade in services is significantly lower than that in goods – and that there are currently no signs of catching up. This can be seen in Figure 5.4 which contrasts the much lower dispersion of prices across the EU over time in goods markets (the red line) with the persistent divergence of services prices (the green line).

[118] European Commission, 'Report from the commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of Regions and the European Investment Bank: State of the Single Market Integration 2013 – Contribution to the Annual Growth Survey 2013', November 2012

Figure 5.4: Dispersion of prices in goods and services across the EU



The statistic plotted in Figure 5.4 is a standard way of describing the variability in any particular set of data, whether across time or across places. The lower its value, the less variability there is. The first point in Figure 5.4 shows the amount of variation in the prices of comparable goods and services across the EU in 1999. The next point shows 2000, and so on. Figure 5.4 shows very clearly the fact that the so-called single market is very far from existing, especially in services. Further, the situation in services is no better now than it was in 1999.

A potential criticism of the London economy is that it is in some ways too important within the UK as a whole, and might be thought in some way to unbalance the economy. Certainly, London represents a substantial proportion of the UK economy. However, London's role in service sector trade is a distinct advantage to the UK as a whole as this is an area where we have a positive balance of trade as Table 5.1 shows. Putting this at risk because London is too big would undermine our areas of advantage.

Table 5.1: Trade in services (UK and region of the world) 2012 by service type

£ billion (2012)	Exports		Imports	
	EU-27	**World**	**EU-27**	**World**
Transportation	8.1	22.1	12.2	21.0
Travel	10.3	23.2	18.2	32.6
Financial	18.0	46.0	4.0	11.2
Computer and information	4.5	9.4	2.4	4.3
Other business services	20.0	56.5	14.4	31.0
Other services	11.1	36.2	9.0	19.3
Total services	72.0	193.4	60.2	119.4

Source:The PinkBook 2013, Table 9.11: Trade in services by type of service 2012[119]

London is not only a major centre for the current strengths of the UK economy and its trade. It is also a source of the innovation which we have identified as key to the future growth of the economy. Cities in general are the locations where innovation can thrive. While invention may happen in a laboratory or study, to have impact in the outside world mechanisms must exist to scale up an invention and make it accepted in the marketplace.

Such mechanisms require both effective supply chains and face to face communication in which ideas can be developed and established. The evidence suggests that this process is best facilitated in cities. The high tech cluster of firms in and around San Francisco is the strongest example of how this process continues today even where digital communications are most favoured. In London, the area now known as Tech City, stretching around the northern edge of the City of London is performing a similar role.

Similarly, advanced manufacturing has emerged in cities such as Newcastle, building on specific expertise in physics and allied to the strength of car manufacturing in the North East.

London's competitive edge is not invulnerable. It is based on services sector exports, and the support of business innovation, in turn supported by traditional strengths in law and finance. The mix of stable and changing geography at London's heart illustrates this. Law firms and finance houses remain located in their traditional bastions to the West and the East of St Paul's. Emerging technology businesses emerged in cheaper locations around Shoreditch and the City fringe. As they become established, this area may well be dragged west, particularly as Google is taking one million square feet beside Kings Cross, and this in turn is backed by the new location of St Martin's School of Art in renovated warehouses. This could well become a new area of tech and creative businesses, within easy reach of the City of London but also the international connections of St Pancras.

[119] http://www.ons.gov.uk/ons/rel/bop/united-kingdom-balance-of-payments/2013/rft-part-3--chapter-9-tables--geographical-breakdown-of-the-current-account.xls

This success story can be derailed, however. Establishing innovation is extremely hard and distraction is a major risk. Management time and attention is always limited and it is easy to put off hard decisions. The more barriers to change and to making hard decisions about change, the more likely they are to be put off or deemed to be too risky. Systems of taxation, regulatory pressure, business as usual difficulties can all contribute to an unwillingness to undertake the new.

Regulatory pressure and controls inhibit innovation as much indirectly as directly, taking up management time and attention and raising the risk bar on making changes. In putting together the package of activity – financial, technical and strategic – which constitutes a successful innovation there can be distractions at every level. Since most regulation emanates from the EU, this is a major issue, as creating a standard regulation that will be appropriate for all the economies of the EU is impossible. So the debate around regulation will involve enormous time and attention from all the parties.

Moreover, such debates will also be a distraction from developing trade with the wider world beyond the EU, which Table 5.1 shows to be both so important and in significant surplus.

An area where the EU focus has additional bite is in the free movement of labour. London relies upon an international labour market in many of its specialisms and needs to be attractive to investors and firms based in growing economies such as India and China. However, a general preference to restrict numbers is likely to result in more onerous restrictions on these countries, since it is impossible to restrict numbers from other EU countries. This is already a distraction to businesses operating internationally in London.

The more difficult it is to do business, or the more difficult it appears to be do business, in London, the more attractive other cities will become. With the weight of economic growth moving east, then the central meridian between east and west could become not London but Hong Kong or Singapore.

The difficulty of doing business is a mix of characteristics, from local planning and infrastructure, to law and finance, property rights, and taxation, access to markets and skilled labour. The places in which we wish to do business are far flung and London needs a regulatory and business environment which encourages that international and global context. It does not need one which is inward looking, navel gazing and nit picking. The EU is currently in that position, focused on internal issues and what it means to be European. It needs to focus on what it means to be international.

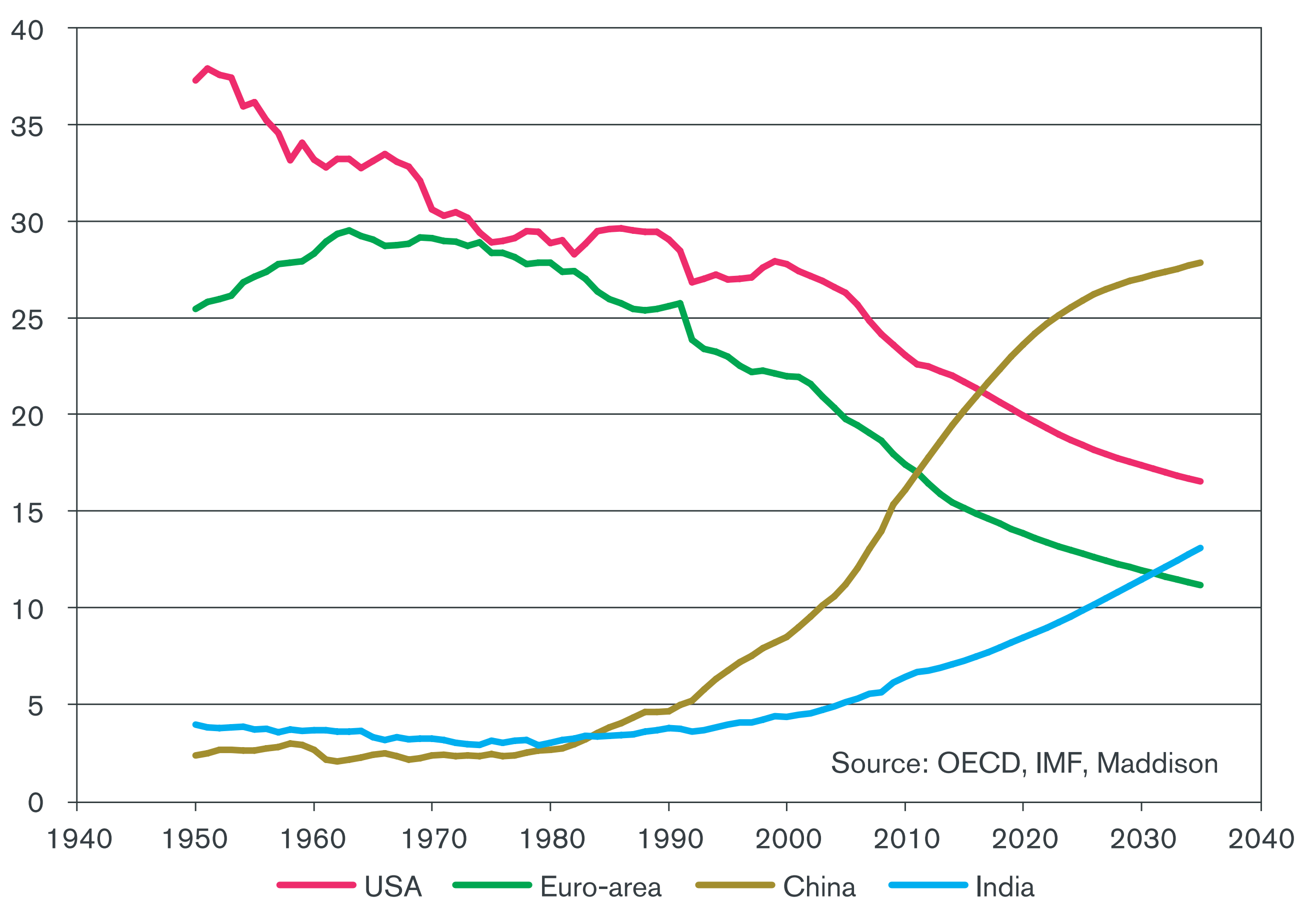
6. Stylised facts' and regimes of growth and inflation

The future remains inherently uncertain. But there are a few key trends in the world economy which, unless there are massive unforeseen shocks and the future is quite different from the past, will transform the structure of the world economy over the time horizon of this study.

6.1 The EU economy: a 20 year perspective

The first of these is a sharp fall in the relative importance of the EU economy, as Figure 6.1 shows.

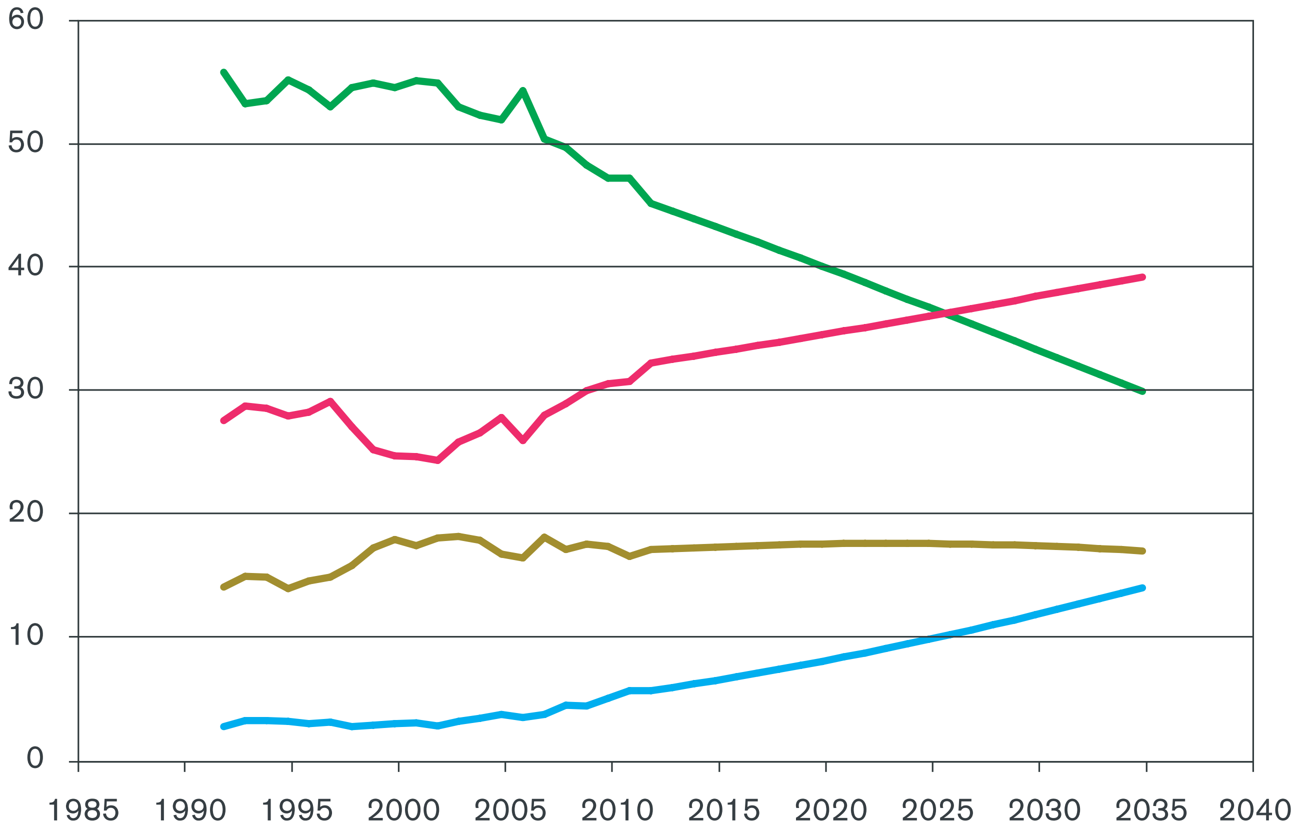
Figure 6.1: Actual and projected shares of world GDP at PPP: 1950-2035 per cent.



There has already been a sharp fall in the size of the Euro-area economy as a proportion of the world economy, and it is hard to see how this trend will not continue, even though we project in the chart a marked slowing of the growth rate in China from the late 2010s onwards. Both China and India moved onto more rapid growth paths around 1990.

Figure 6.2 projects the UK's trade patterns on the 'baseline' scenario, in other words that we stay within a largely unreformed EU.

Figure 6.2: Percentage shares of UK exports of goods and services (past growth rates projected 2013 onwards)



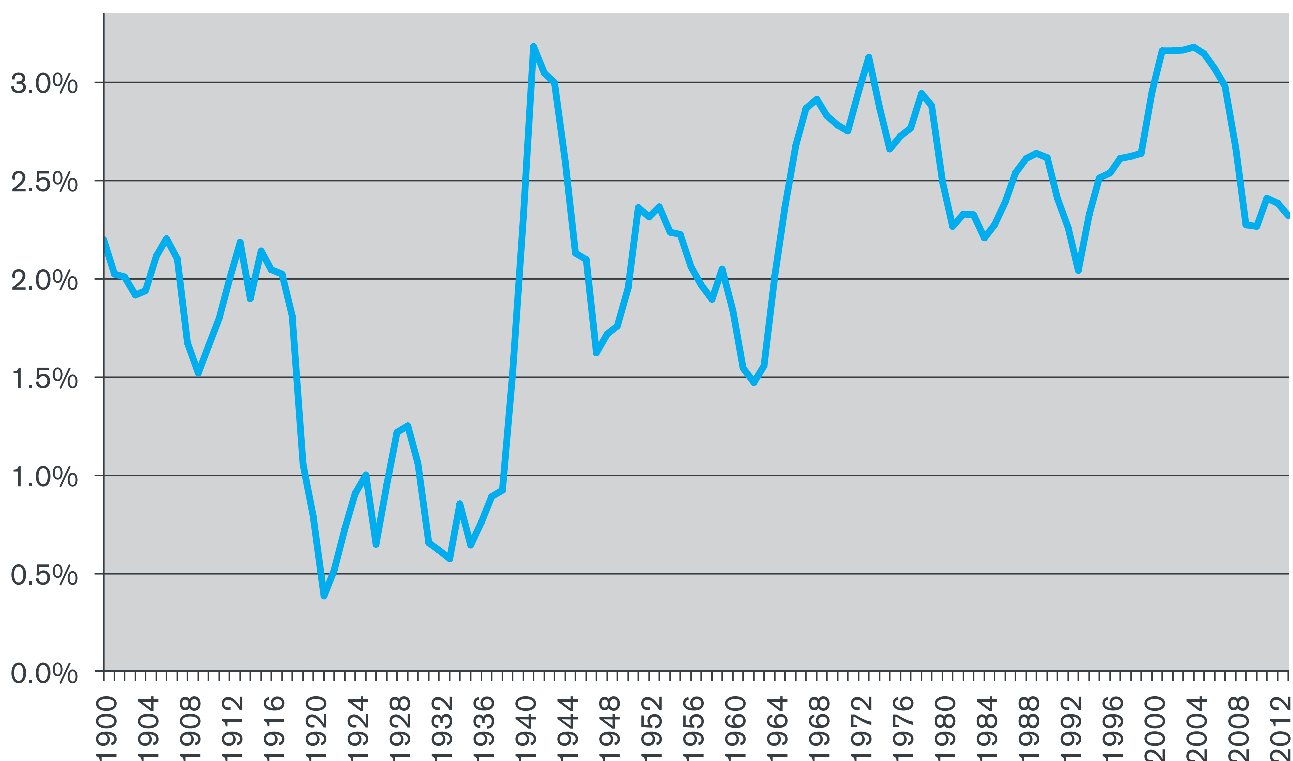
A strong determinant of trade flows remains geographical proximity, so the EU will remain considerably more important for the UK than its actual size in the world economy would otherwise warrant. But, even so, the dramatic shifts which are taking place in the world economy have already seen the share of the UK's exports which go to the EU fall by some ten percentage points over the past decade. If these trends remain in place, by 2035, the EU's share of our exports will have fallen to no more than 30 per cent. The rest of the world will be much more important in determining our export success than the EU.

In short, powerful trends appear to be in place, which suggest a considerably diminished economic importance of the EU, both in the world economy as a whole, and specifically in its importance to the UK.

6.2 Long-run growth in the UK

The second key background point to consider is the plausible range within which we might think of the rate of UK economic growth through to 2035. Figure 6.3 below plots the 20 year annual average rate of growth over the period 1900-2013.

Figure 6.3: Annual average growth rate of GDP over 20 year periods, UK, 1900-2013. The observation for 1900 is the average over the period 1881-1900, for 1901 the average 1882-1901, and so on



One point to note from the chart is that, even taking an average over 20 years, the long-term rate of growth is far from constant. It varies considerably. In fact, historical experience offers relatively little guide to the future. Because each data point is an average of 20 annual data points, there is an apparently strong correlation between the 20 year average in any given year, and the 20 year average in the next year: the two have 18 annual observations in common.

However, the ability to explain the change in the 20 year average in any given year in terms of the previous history is very limited. Two factors can be shown to be significant in a statistical sense. The change in the 20 year average in any given year is positively related to the change over the 20 year average in the previous year. That means if the average is rising / falling there is a tendency for this rise / fall to continue. However, it is negatively related to the level of the average in the previous year. The higher that growth has been, the more likely it is to be reduced in the next period. But these two

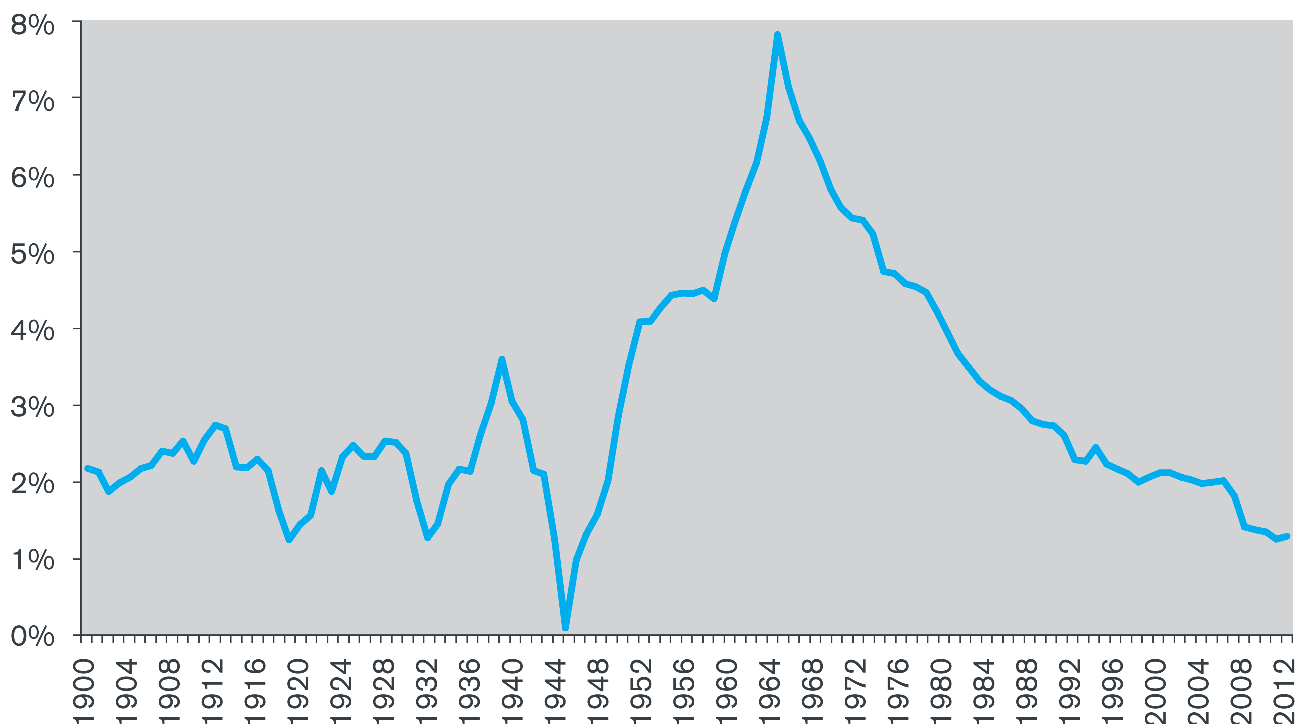
conflicting tendencies only account for some 20 per cent of the total year-on-year variability in the 20 year annual average rate of growth. So the past is not a very good guide to the future.

We might usefully note, however, that an annual average of, say, 2.75 per cent would represent a very good outcome for the UK over a 20 year period. Apart from the massive expansion in the early 1940s, when national survival was at stake, essentially, this rate has only happened in two particular historical circumstances. First, the 20 year periods which contain years from the so-called ‘Golden Age’ of the 1950s and 1960s, when the West as a whole grew at unprecedented rates. Second, the 20 year growth rate average started to rise during the 1990s as both the weak growth of the mid/late 1970s began to drop out of the 20 year ‘windows’ and the positive effects of the supply side reforms of the 1980s began to take effect.

It is also interesting to see that the 20 year average began to fall before the financial crisis of 2008/09. We cannot read too much into just a few data points and unequivocally assign the slowdown to Gordon Brown’s policies, but the successive 20 year averages which end during the opening decade of the 21st century are certainly intriguing. Certainly, the impetus of the supply-side reforms of the 1980s appears to have been fading. Between 1990 and 2000, for example, real GDP per hour worked rose at an annual rate of 2.9 per cent, falling to 2.3 per cent in the years immediately preceding the crisis, 2000-2007.

The similar picture for the EU economies is shown in Figure 6.4 below. Note that we have substituted the EU economy as being the weighted sum of Germany, France and Italy.

Figure 6.4: Annual average growth rate of GDP over 20 year periods, EU, 1900-2013

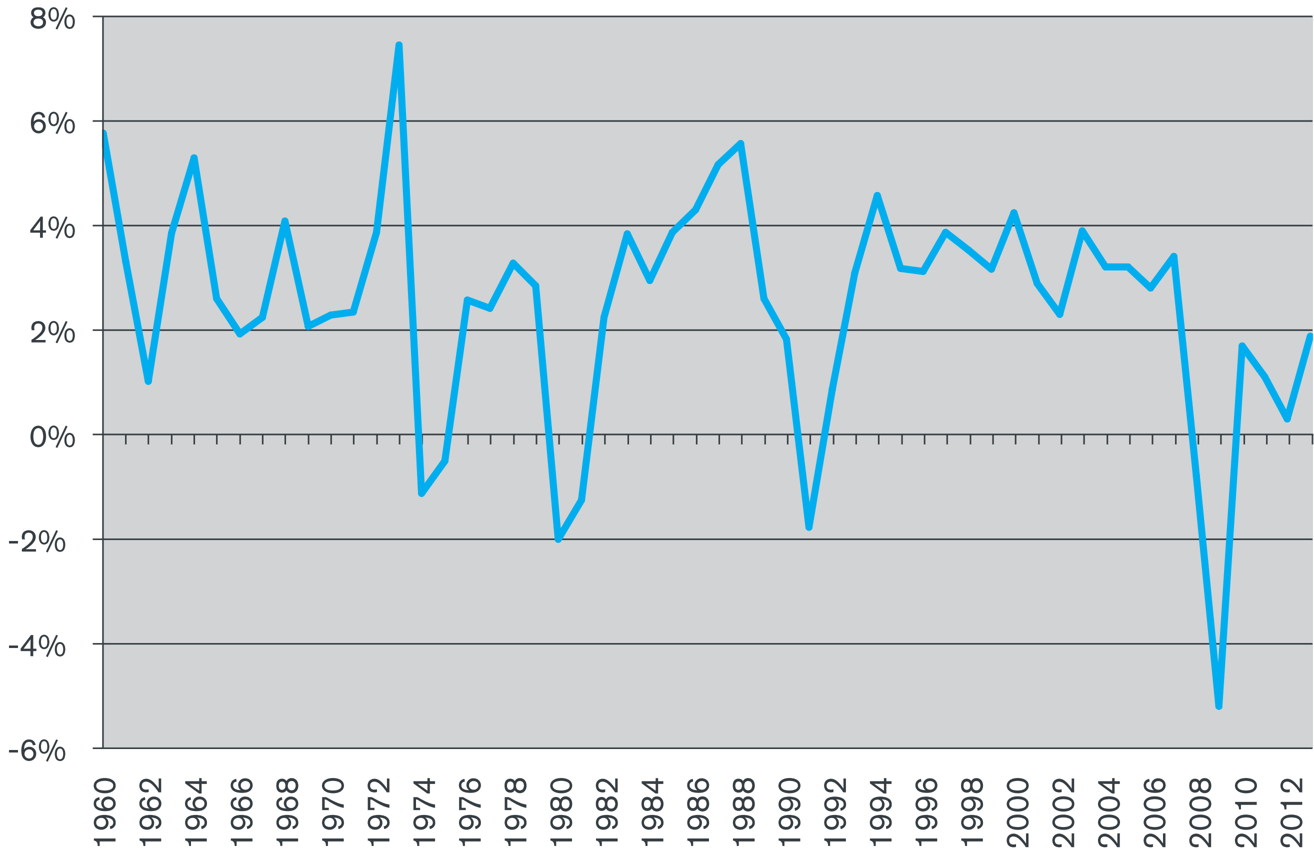


The huge peak in the chart reflects two things. First, the massive double-digit growth rates registered in the late 1940s as the economies of Continental Western Europe recovered from the Second World War. Second, the historically high growth rates, in single figures, which obtained in the 1950s as the 'catch-up' period continued. Essentially, there was an investment boom. The labour forces of these countries remained largely intact, despite war losses, but much of the capital stock, especially in Germany, was destroyed.

Since then, however, the underlying 20 year growth rate has fallen almost continuously, in contrast to the pattern observed in the UK. The financial crisis of the late 2000s is simply an overlay of an already firmly established downwards trend.

The difference between the UK and the EU in the past 50 years are clearly seen in Figure 6.5 and 6.6 below, which plot the annual growth of real GDP over the period 1960-2013.

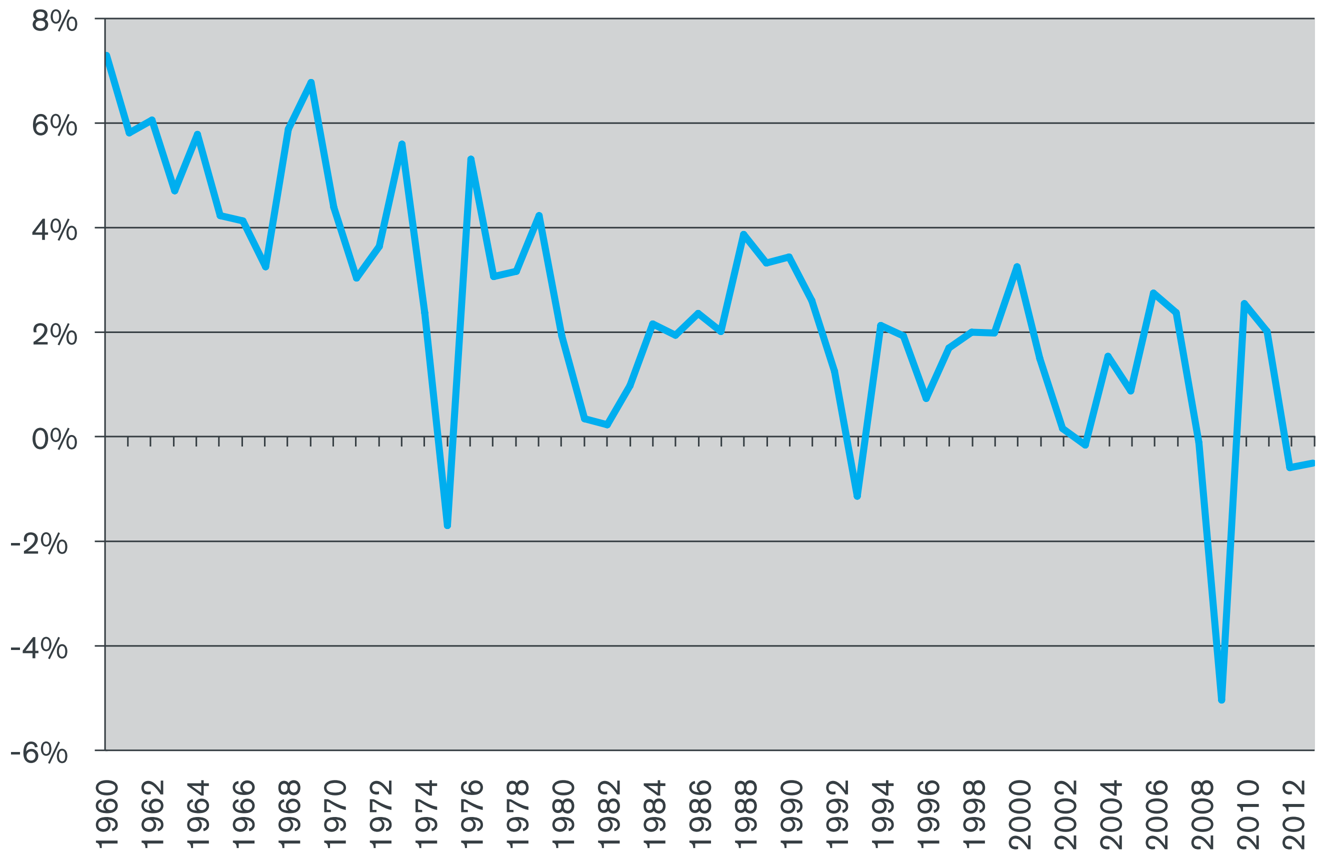
Figure 6.5: Annual growth in the UK, 1960 - 2013



The trend is not completely obvious, but there is in fact a slowing down during the decade of the 2000s even prior to the crash[120].

[120] For example, the null hypothesis that the underlying trend rate of growth of GDP is constant over the 1960-2007 is rejected decisively, regressing the log of GDP on time and carrying out analysis of variance tests of the linear form of the regression against non-linear ones estimated using the general non-linear technique of local linear regression (e.g. WS Cleveland and SJ Devlin, 'Locally Weighted Regression: An Approach to Regression Analysis by Local Fitting', *Journal of the American Statistical Association*, 83(403), 596-610, 1988.

Figure 6.6: Annual growth in the EU, 1960 - 2013

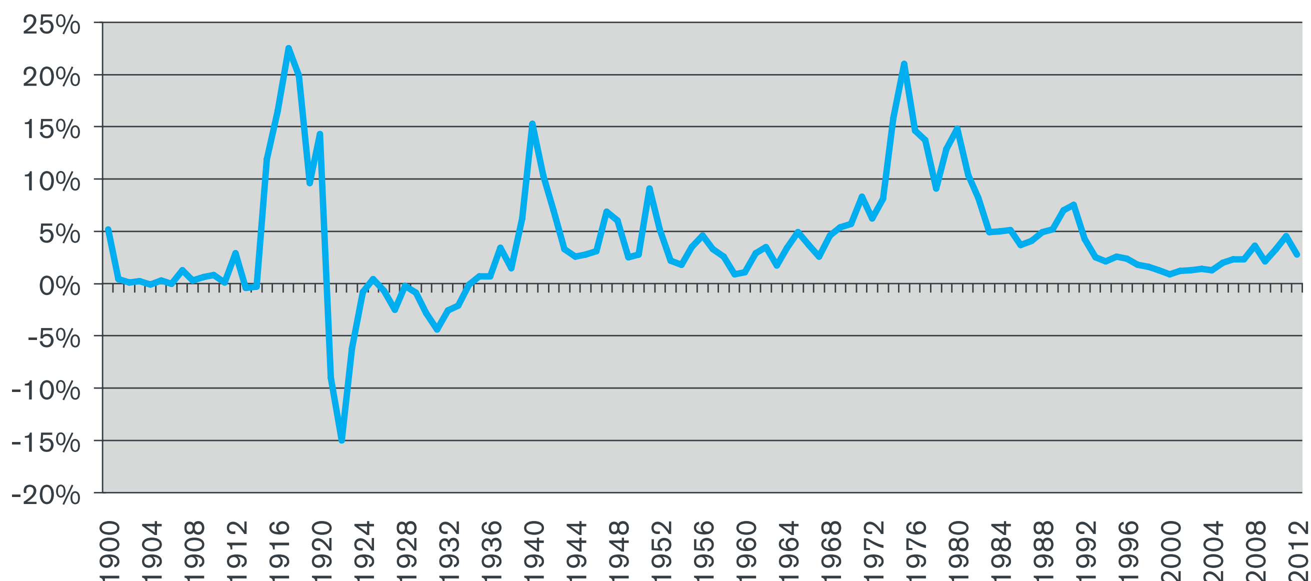


The persistent slowdown in EU growth is illustrated very clearly by this chart.

6.3 Patterns of inflation

As a final longer term perspective, Figure 6.7 shows the annual rate of inflation in the UK since 1900.

Figure 6.7: Annual rate of inflation, UK, 1990-2013



There are clear peaks in inflation during the two world wars, and another in the mid-1970s. The latter was a very unusual period in economic history. In essence, the quadrupling of the oil price in 1973/74 transferred real income from the West to the OPEC economies. However, in some countries such as the UK and Italy, the labour force was unwilling to accept the reductions in real wages which this implied. In economies such as Germany, there was indeed a surge in inflation following the oil price rise, but this was temporary. Real wage reductions were accepted and inflation fell sharply, in contrast to the damaging wage-price spiral which was created above all in Italy and the UK. It took the major recession of the early 1980s and the defeat of the miners to dampen labour militancy.

More generally, however, the 'usual' level of inflation has been either slightly above or, in the depressed conditions of the inter-war period, slightly below zero.

7. Scenarios

Figure 6.3 shows quite clearly that growth after the Second World War has in general been higher than it was before. Figure 6.7 informs us that, apart from the unique combination of circumstances described above in the 1970s, inflation has also been generally low.

A conventional picture of these successes is that they are founded on the cleverness of economists which has guided successful, active intervention by the state[121]. The growth of the 1950s and 1960s was due to Keynesian macroeconomic policies. The so-called Great Moderation, the two decades prior to the financial crisis, was due to advances in macroeconomic thinking.

However, the volatility of the 1970s exposed as false the belief of the 1950s and 1960s that active fiscal policy had done away with boom and bust. The sustained high growth of the immediate post-war decades was, instead, based upon supply-side factors. In a paper published in 1968[122], R C O Matthews set out a key factor. He argued that the full employment level enjoyed by Britain since the end of the Second World War up to that time had little or nothing to do with government policy, but was instead caused by favourable supply-side conditions. Growth and full employment were due to the great rise in investment. This investment had come primarily from the private sector, and public sector investment was falling as a proportion of total investment. As a further supply-side point, favourable terms of trade existed for developed economies with respect to primary commodities (except for the brief episode of the Korean War). These both raised living standards and helped to keep inflation down.

The willingness to invest increased greatly in the post-war period because the potential profits from investment were so much higher than they had been before. In large part this was due to the low level of the capital stock. Investment was low during the Second World War, the inter-war period, the First World War and even in the years immediately before the First World War. As Matthews put it, ‘very substantial arrears of investment opportunities were to be expected’.

Matthews’ conclusion is that the low unemployment of the post-war period up to 1968 had been due to the increase in the abundance of capital relative to labour. There was no sense in which this was due to demand management: ‘this is non-Keynesian... and it has little or nothing to do with government policy’. In short, the prosperity of the immediate post-war decades was essentially a supply-side phenomenon.

The above argument is also very relevant to the countries of Western Europe. To a large extent, their capital stocks had been destroyed by the war. Not only was there a great incentive to invest as a result, countries such as France and Germany could replace their old, eliminated capital stock with equipment close to that of the technological frontier, embodied in the United States. It is therefore not surprising that such

[121] Much of the argument immediately below is taken from P. Diggle and P. Ormerod, ‘Conviction for Growth’, *Centre for Policy Studies*, 2010
[122] R.C.O. Matthews, ‘Why has Britain had Full Employment since the War?’ *The Economic Journal*, 555-569, 1968.

economies grew at very rapid rates, around five per cent a year in the case of France over the 1950-73 period, and 6.5 per cent in (West) Germany.

The favourable supply-side environment was reinforced by the benign international order which the United States was able to impose, given its almost total dominance of the developed world economies in the immediate post-war decades. There was a stable international monetary institutional structure, and decisive moves towards free trade were made.

Moving forward to the so-called Great Moderation, in the past two decades, mainstream economic thinking on the macro economy claims that it has made great strides. For example, Michael Woodford is one of the world's leading academic macroeconomists. In January 2009 he wrote an article entitled 'Convergence in Macroeconomics: Elements of the New Synthesis[123]'. According to Woodford, the first and most important part of the new synthesis is that 'it is now widely agreed that macroeconomic analysis should employ models with coherent inter-temporal general equilibrium foundations.' To the non-economist, the latter phrase will be incomprehensible. But the models to which Woodford refers were in widespread use in central banks.

These models – which have the splendid description 'Dynamic Stochastic General Equilibrium' (DGSE) – provided the intellectual backing for the delusion that policy-makers had solved once and for all the problem of 'boom and bust.' Jean-Claude Trichet, former President of the European Central Bank, gave his opinion on them in November 2010: 'When the crisis came, the serious limitations of existing economic and financial models immediately became apparent. Macro models failed to predict the crisis and seemed incapable of explaining what was happening to the economy in a convincing manner. As a policymaker during the crisis, I found the available models of limited help. In fact, I would go further: in the face of the crisis, we felt abandoned by conventional tools'.

The edifice of dynamic stochastic general equilibrium models was merely the culmination of an intellectual process stretching back to the early 1990s in which mainstream economists were able to delude both themselves and, through the chimera of the scientific status of their models, regulators and policy-makers that the benign economic environment was something which their collective cleverness had brought about.

The tools by which economists were meant to have brought about this 'great moderation' were improved monetary policy, specifically something called the Taylor rules. The rule for the conduct of monetary policy apparently gave central bankers the means to guide the economy smoothly along its long-term growth rate, whilst keeping inflation stable and low. In a highly influential paper from 1993[124] John Taylor introduced a rule for the conduct of monetary policy that would come to dominate the thinking of central banks across the developed world.

[123] M. Woodford, 'Convergence in Macroeconomics: Elements of the New Synthesis', American Economic Journal: Macroeconomics, Vol 1:1, 267-279, 2009
[124] J.B. Taylor, 'Discretion versus policy rules in practice', *Carnegie Rochester Conference Series on Public Policy*, 1993

The Taylor rule suggests that the level of the interest rate set by a central bank should be governed by the prevailing rate of inflation relative to its target, and the level of the country's economic output relative to its long-term trend. As inflation moves above the target rate, the interest rate should rise to combat the inflationary pressures, and vice versa. Similarly, if output growth falls below its trend rate of growth then interest rates should fall to stimulate economic activity, and vice versa. Central banks, including the Bank of England and the Federal Reserve, are not guided explicitly by the Taylor rule. But the Taylor rule supposedly arms central bankers with the ability to quickly and easily guide the economy towards a targeted inflation rate and a trend rate of growth of output, all through simple changes in the short term interest rate.

An older macroeconomic relationship is the Phillips curve, introduced by A W Phillips in 1958. The Phillips curve supposedly describes a relationship between the pressure of demand in an economy and inflation. In the short run, a rate of growth of output above the long-term trend can be attained at the cost of higher inflation. Higher output growth reduces unemployment, which in turn leads workers to price inflation into wage demands and shops to include it in prices, meaning that over the long run the economy is tied to a single growth rate.

The Phillips curve, by describing the relationship between output and inflation, is the second key tenet of central bank and government decision- making on the economy. It occupies a prominent theoretical position, yet its practical use is close to zero. For example, unemployment in the UK fell in every single year between 1993 and 2001, yet not only did inflation not rise, it was actually lower in 2001 than it was in 1993.

Both of these central principles of modern macroeconomics have at their core the concept of the trend rate of growth – the level at which, in the long term, the economy is believed to grow. The Phillips curve ties the economy to a long run growth level consistent with low inflation. In the Taylor rule central banks are able to guide the economy easily and swiftly back to this trend rate of growth by manipulating the short term interest rate, thus doing away with the excesses of a boom and the pain of a bust.

Taylor rules and DSGE models were credited, by many economists and politicians, as the reason that inflation was low and growth positive and steady during the 1990s and 2000s. This period did see the volatility of many macroeconomic variables fall markedly. In particular the variability of real output and inflation was systematically lower than in any recent historical periods. Together Taylor rules and DSGE models were thought to have engineered this change – so central bankers and politicians could, it was supposed, manage inflation expectations and maintain steadily growing output.

Alternative explanations of The Great Moderation – that structural changes made the global economy a more benign place, or that we have just been plain lucky – are dismissed as secondary causes, although the element of luck has become recognised even in the mainstream economics literature[125]. During The Great Moderation, a decline in volatility was seen across the economies of the developed world – in output,

[125] See, for example ,L Benati, 'The Great Moderation in the United Kingdom', *Journal of Money, Credit and Banking*, 40, 121-148, 2008

employment, consumption, wages and prices. It is now clear that the steady growth of The Great Moderation was due to a combination of good luck and structural changes in the world economy, rather than advances in economic theory that gave economists and politicians control over economic growth and inflation.

The structural causes behind The Great Moderation centre on the emergence and fuller integration of China, India and Brazil into the world economy. The great supply of cheap labour that these countries added to the global economy exported low inflation to developed nations. This, combined with the ongoing decline of manufacturing and rise of services in the developed economies served to weaken labour's bargaining position. At the same time the increasing abundance of capital relative to labour in the developed economies facilitated a shift to profitability, in turn driving innovation and enterprise.

Competition in product markets was intense and drove prices down, putting a lid on inflation. The 1990s and 2000s were also characterised by a favourable supply-side environment, just as Matthews identified in 1968. Governments and central banks may have helped create an environment favourable to the supply side through low interest rates and a tax structure favourable to investment, but it did not exert the sort of control implied by their models. Good luck also played a significant part. Good luck manifested itself in the form of reduced variance of structural shocks. Oil prices were steadier, as were the prices for other commodities such as food and industrial materials. Shocks to the money supply, tax and spending and productivity all fell. Most countries had just been spared the large shocks of the previous decades.

Despite numerous investigations into the causes of The Great Moderation, most of the 'good-luck' elements of the period remain unaccounted for – economists are simply unable to explain the cause of the long benign period experienced in the 1990s and 2000s. What is clear is that advances in monetary policy can, at best, explain a fraction of the causes behind The Great Moderation.

One particular problem with the mainstream approach is the concept, central to the whole intellectual edifice, of the output gap. The Office for Budget Responsibility (OBR) has a specific requirement to estimate the output gap, which it defines formally as 'the difference between the current level of activity in the economy and the potential level it could sustain while keeping inflation stable'.

The task of estimating the output gap empirically is fraught with difficulties. The OBR points that there are at least three recognised ways of doing this, none of which will make sense to anyone lacking an advanced training in statistics. So there is plenty of scope for disagreement amongst orthodox economists who believe in the concept. Yet rather like the medieval debates about how many angels could dance on a pin, these disputes have little meaning in the economy of the 21st century.

The economy is not a physical object and cannot, say, be placed on a pair of scales and weighed. GDP has to be estimated, using a wide range of information. The basic principles of how to measure output were worked out in the 1930s and 1940s. A major problem is that these principles are much more suited to an economy which, as it was at that time, is dominated by the production of goods rather than services. We can count how many Ford Model Ts have been built. It is much less clear what the outputs of Google or Facebook are. The problems are even more acute with the concept of potential output. Many internet-based services incur substantial fixed costs in order to have just a single customer. But the additional cost of servicing the second customer, and all subsequent ones, is effectively zero. Potential output does not have much meaning in these contexts. It is not obvious what the limit might be.

A powerful blow against the concept of potential output has been published in the latest edition of the American Economic Association's journal *Applied Economics*. Igal Hendel and Yossi Spiegel document the evolution of productivity over a 12 year period in a steel mini-mill producing an unchanged product, working 24/7. The steel melt shop is almost the Platonic ideal from a national accounts perspective of output measurement. The product – steel billets - is a simple, homogenous, internationally traded product. There was virtually no turnover in the labour force, very little new investment, and the mill worked every hour of the year. Yet despite production conditions which were almost unchanged, output doubled over the 12 year period. As the authors note, rather drily, 'the findings suggest that capacity is not well defined, even in batch-oriented manufacturing'.

The sorts of formal models which economists construct do not really capture substantial changes in the economic environment such as those discussed here. These shifts can either be external to any particular economy, such as the rise of India and China, or can take place within an economy, such as the supply-side reforms of the 1980s. A wider perspective is needed, rather than reliance on technocratic models.

Ormerod et al. (2013)[126], using the statistical technique of fuzzy clustering, explore regimes of inflation and unemployment for the United States, the United Kingdom and Germany between 1871 and 2009. They identify for each country three distinct regimes in inflation/unemployment space. Similarities exist across countries in both the regimes and the timings of the transitions between regimes. However, the typical rates of inflation and unemployment experienced in the regimes are substantially different. Further, even within a given regime, the results from the cluster analysis reveal persistent fluctuations in the degree of attachment to that regime of inflation/unemployment observations over time. The economic implications of this are that, first, the inflation/unemployment relationship or Phillips curve experiences from time to time major shifts. Second, that it is also inherently unstable even in the short run.

[126] P. Ormerod, B. Rosewell and P. Phelps, 'Inflation/unemployment regimes and the instability of the Phillips curve', *Applied Economics*, 45:12, 1519-1531, 2013. DOI: 10.1080/00036846.2011.628299

For each of these three major economies, there are three distinct regimes[127]:

- 'Steady', characterised by low average rates of both inflation and unemployment. This is the most frequently observed regime in all three countries
- 'Weak', with unemployment either zero or even negative, and inflation high
- 'Disruption', in which inflation is high, and unemployment is at low or medium levels. The most recent example of this in the UK was the 1970s

An important point to note is that the US, UK and Germany have generally been in similar regimes throughout the sample which spans well over a century of data. Although the nature and precise timings of the structural changes may differ from country to country, the results indicate that many of the structural changes were common to all.

Projecting forward, the key decision to make is the likely nature of the regime, rather than using econometric relationships calibrated on data from the relatively recent past, but which will be subject to potential sharp breaks in the future. The central values[128] of the Steady cluster for the UK are an inflation rate of 2.1 per cent[129] and unemployment rate of three per cent, and for the Weak cluster they are 0.3 and 8.9 per cent respectively. At the present time, therefore, the UK is at cusp between the two clusters. The inflation rate sits firmly in the Steady cluster, but the unemployment rate is more aligned with the weak.

As we argued above in section 3, we see the world economy as having strong potential for growth over the next twenty years. Both the supply-side and the institutional frameworks are favourable. The benefits of the General Purpose Technology embodied in the revolution in information and communications technologies are far from being fully realised. Other potentially major disruptive technologies exist. Further, the trend is towards ever-greater integration of the world economy, and the further reduction in barriers to trade. One crucial but largely unrecognised aspect of the latter is the impact of time as a trade barrier. Hummels and Schaur, in a recent issue of the *American Economic Review*[130], estimate that each day a product spends in transit is equivalent to an ad valorem tariff of between 0.6 and 2.1 per cent. The technological potential of ICT, the streamlining of customs procedures, the improvements in port infrastructures, all add up to further sharp reductions in the effective tariff rate on trade.

[127] For Germany, there is of course a fourth: the hyper-inflation of the early 1920s, when inflation rose to an annual rate of many millions of per cent
[128] This is similar to, but not quite the same as, the averages. See, for example, L. Kaufman and P. Rousseeuw, 'Finding Groups in Data: An Introduction to Cluster Analysis', *Wiley, New York*, 1990
[129] Measured by the consumer price index
[130] D.L. Hummels and G. Schaur, 'Time as a Trade Barrier', *American Economic Review*, 103(7): 2935-2959, 2013

A key question for longer term scenarios for the UK economy is the extent to which the EU can take advantage of the potential for growth in the world economy. Even though the relative importance of the EU to the UK will continue its trend decline, the EU will still be a substantial trading partner in 2035. Much more importantly, however, within the EU the UK will be subject to the regulations and institutional frameworks set by the EU.

As noted above in section 3, a gap has opened up over the past two decades between the US and the EU as a whole on productivity growth. This in turn is based upon the willingness to adapt to the revolution in ICT. The EU-US labour productivity gap has arisen precisely in those sectors which have been identified in the US as deriving large productivity gains from ICT use: retail and wholesale trade and financial and business services and healthcare. Product regulation in the EU creates barriers to entry, and reduces the incentives to invest and adopt new technologies. Similarly, rigidities in the labour market tend to reduce the ability of firms to adjust their workforce and hence discourage ICT adoption.

Since the mid-2000s, however, an increasing divide has opened up within the EU between what we might term the Greater German cluster of economies[131] and the Mediterranean cluster, of which France is becoming increasingly a member. This is separate from the problems which arose during the financial crisis and which still persist in Italy, Spain, Portugal and Greece. These economies are at serious risk of being trapped in a debt-deflation spiral. Their levels of GDP remain well below the previous peak levels which were achieved in 2008, six years ago now. The lack of resilience exhibited by these economies in the face of the major shock of the crisis is in fact related to the structural issue.

In the 1990s and early 2000s, Germany was seen by many as the new 'sick man of Europe'. Between 1991 and 2005, for example, GDP growth averaged only 1.2 per cent a year, compared to 3.3 per cent in the UK. Since then, however, the German economy has revived quite dramatically. Again as noted above, the recovery in the German cluster of economies from the financial crisis has been as strong as in the United States, with the previous peak level of output being regained in 2011. Germany itself experienced virtually no increase in unemployment in 2008 and 2009, its exports are at record levels, and even the crisis in the Euro area has not prevented expansion in both output and employment.

There are two reasons which are frequently given for this. The first relates to the favourable exchange rate at which the German mark entered the Euro, giving an initial competitive edge to the economy. The second is the so-called 'Hartz reforms', a series of legislative labour market reforms which began in the mid-2000s. Both have validity.

[131] Germany, Netherlands, Sweden, Finland, Austria, Poland, Czech Republic, Slovakia

But there is a deeper reason for the recent turn-round in the performance of the German economy, which is rooted in institutional structures. Dustmann et al. (2014)[132] spell out the argument very clearly. The authors agree with the general view that the evolution of unit labour costs has played a key role in the favourable performance of German tradable goods. They argue that the main reason for this is in fact 'the specific governance structure of German labor market institutions which allowed them to react flexibly in a time of extraordinary economic circumstances'. The key points are as follows:

- German labour market flexibility is not based on legislation, but is laid out in contracts and mutual agreements between the three main actors in Germany: employer associations, trade unions, works councils

- The formal institutional structure remained unchanged, but there have been major changes in the way in which it operates

- In particular, there has been a massive decentralisation of the wage-setting process from the industry level to the firm level, with a sharp fall in the proportion of workers covered by union agreements

This decentralisation is in sharp contrast to economies such as Italy and France, where union wages and work hour agreements apply to all firms within an industry, or are subject to legal limits. The fall of the Berlin Wall created opportunities for German industry to both source from, and relocate to, countries such as Poland and the Czech Republic which had stable political structures and skilled labour forces. Gradually, the German labour force appreciated that these developments required it to operate in a considerably more flexible way than it had previously. As Dustmann et al. point out, this has led to a rise in wage inequality within Germany, but the benefits have been a strong employment and output performance.

The example of Germany illustrates that, in many ways, the key question facing the UK economy over the next two decades is not so much whether we are in or out of the EU. Rather it is whether our institutional structures and attitudes evolve to become flexible enough to prosper in the challenging environment of the world economy.

In principle, the UK is very well placed. Our labour market structures are flexible. We are moving away from dependency on the EU in terms of markets in which we trade. Our economy and our exports are much more strongly oriented towards the services sector than any other developed economy, with the exception, of course, of the US.

But no economy, no institutional structure can stand still. Capitalism is a dynamic, evolving circumstances. In the 1970s and early 1980s, the UK floundered and our prospects were gloomy. The supply-side reforms of the 1980s transformed the economy. In the 1990s and early 2000s, Germany inherited out title as the sick man of Europe. But, again, major supply-side changes revitalised the economy.

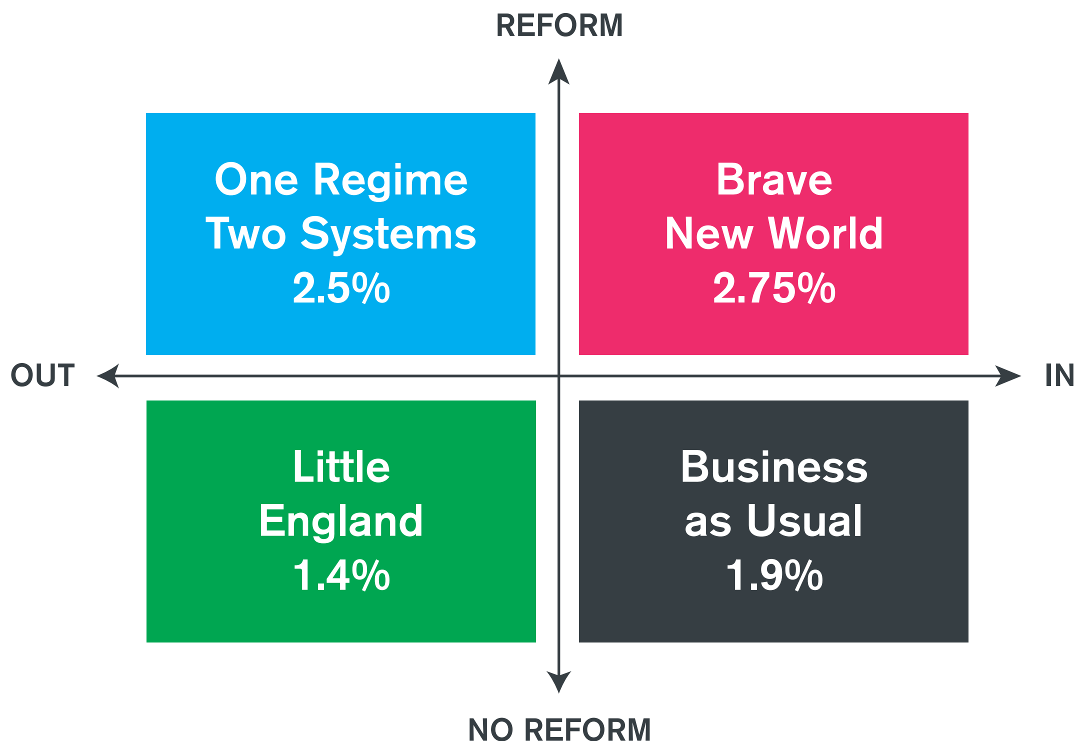
[132] C. Dustmann, B. Fitzenberger, U. Schönberg and A. Spitz-Oener, 'From Sick Man of Europe to Economic Superstar: Germany's Resurgent Economy', Journal of Economic Perspectives, 28(1): 167-188, 2014

We therefore consider four scenarios:

- The UK remains within an unreformed EU – 'business as usual'
- The UK stays in the EU, but there are substantial reforms – 'brave new world'
- The UK withdraws, but does so with goodwill on both sides – 'one regime, two systems'
- The UK leaves, but antagonism exists – 'little England'

Our definition of reform is essentially a supply side one. A reformed EU would, for example, offer free trade in services on the basis of passported regulation, rather than wanting to set a universal standard. We also imagine that such reforms would equally apply inside the UK, which would not 'gold plate' new regulation and would encourage trade in services across the globe. The scenario of 'business as usual' does not therefore reflect an average of the post war period, but rather a view of the prospects offered to economies which are restricted on the supply side, whatever policies of demand side management is being pursued. The 'little England' scenario reflects an attempt at autarky, with reduced trade and would have economic outturns similar to those seen in the inter war period.

We draw on the different historical regimes for growth and inflation to generate the scenarios through to 2035.



'Business as usual'
This is a scenario in which there is no real adaptation to changing world circumstances, and fitting into a trajectory of EU decline relative to the world. In essence, this is an 'institutions' as usual scenario. It might be argued that both output and productivity grew faster than this prior to the 2008 crisis. However, there is clear evidence of a slowdown from the previous trend during the decade prior to the crisis, as noted above.

Average annual GDP growth: 1.9 per cent

Inflation: 2.5 per cent

Employment growth: 0.2 per cent

Export growth: 3.5 per cent

In this scenario, the growth potential for London is stifled rather than realised. The city rubs along with the rest of the UK, and the outcome is one of moderate relative decline in world terms, along with the rest of the EU.

London's annual average output growth: 1.8 per cent

London's employment growth: 0.2 per cent

'Brave new world'
In this scenario, the EU as a whole realises the global challenges which face it, and the institutional and regulatory structures evolve to enable the European economies to take advantage of the opportunities which rapid technological change in bringing. The way in which the German economy has adapted in recent years shows that this is a feasible scenario. In many ways, the supply-side adaptations took place in the UK in the 1980s, which explains the superior performance of the trend in the UK economy since then.

Average annual GDP growth: 2.75 per cent

Inflation: 2.0 per cent

Employment growth: 0.7 per cent

Export growth: 5.0 per cent

This is the most favourable scenario for London, and we envisage the city's economy sustaining an average growth rate over the 20 year period which is as high as the UK as a whole obtained over similar time period during the whole of the 20th century.

London's annual average output growth: 3.1 per cent

London's employment growth: 0.9 per cent

'One regime, two systems'
This scenario is similar to the Brave New World, except that the UK votes to withdraw from the EU. The renegotiated status does not introduce many new constraints, which in any event are counter-balanced by the UK being able to adapt more rapidly. The 20 year averages are lower essentially because we envisage an initial slowing of growth because of the uncertainties around the UK's new status.

Average annual GDP growth: 2.5 per cent

Inflation: 2.5 per cent

Employment growth: 0.5 per cent

Export growth: 4.2 per cent

This scenario emphasises the key importance of reform for the dynamic, service sector oriented economy of London, and the gap between the growth of London and that of the rest of the UK is slightly larger than in the brave new world scenario.

London's annual average output growth: 2.9 per cent

London's employment growth: 0.8 per cent

'Little England'
In this scenario, the UK vote to withdraw, but instead of reacting positively, we retreat into a comfort zone, in which a larger state sector hands out subsidies to its clients. The out-turn under this scenario is one in which the underlying growth rate gradually declines, so that by the end of the period we are contemplating trend growth even lower, similar in fact to those of the 1920s.

Average annual GDP growth: 1.4 per cent

Inflation: 4.5 per cent

Employment growth: -0.2 per cent

Export growth: 2.4 per cent

In this scenario, following the logic of our arguments, London enters a period of decline relative to the UK as a whole.

London's annual average output growth: 1.1 per cent

London's employment growth: -0.4 per cent

The percentage differences in growth rates between the scenarios may seem rather small, but over a 20 year period, they cumulate into very substantial numbers. By 2035, for example, the absolute level of real GDP is envisaged as being over £500bn higher in the brave new world scenario than it is under the Little England one. This is equivalent to around £7,000 for every single person in the country, measured in the prices of 2014, that is stripping out inflation.

These absolute differences are also stark in terms of employment. There are currently just over 32 million workforce jobs in the UK. In the little England scenario, this falls by 1.25 million. In brave new world, employment in 2035 is nearly 5 million higher.

In terms of the projections for London, Table 2 set out estimates of the level of real output and employment under the different scenarios in 20 years' time.

Table 7.1: Estimates of real output and employment levels, London, in 20 years' time

	Output, £bn	Employment (million)
Current levels	350	5.2
Brave new world	640	6.2
One regime, two systems	615	6.1
Business as usual	495	5.4
Little England	430	4.8

APPENDIX C: KEY SPEECHES

PM David Cameron, Discussing the future of the European Union at Bloomberg, London 23 January 2013:
This morning I want to talk about the future of Europe.

But first, let us remember the past.

70 years ago, Europe was being torn apart by its second catastrophic conflict in a generation. A war which saw the streets of European cities strewn with rubble. The skies of London lit by flames night after night. And millions dead across the world in the battle for peace and liberty.

As we remember their sacrifice, so we should also remember how the shift in Europe from war to sustained peace came about. It did not happen like a change in the weather. It happened because of determined work over generations. A commitment to friendship and a resolve never to re-visit that dark past - a commitment epitomised by the Elysee Treaty signed 50 years ago this week.

After the Berlin Wall came down I visited that city and I will never forget it.

The abandoned checkpoints. The sense of excitement about the future. The knowledge that a great continent was coming together. Healing those wounds of our history is the central story of the European Union.

What **Churchill** described as the twin marauders of war and tyranny have been almost entirely banished from our continent. Today, hundreds of millions dwell in freedom, from the Baltic to the Adriatic, from the Western Approaches to the Aegean.

And while we must never take this for granted, the first purpose of the European Union - to secure peace - has been achieved and we should pay tribute to all those in the EU, alongside NATO, who made that happen.

But today the main, over-riding purpose of the European Union is different: not to win peace, but to secure prosperity.

The challenges come not from within this continent but outside it. From the surging economies in the East and South. Of course a growing world economy benefits us all, but we should be in no doubt that a new global race of nations is underway today.

A race for the wealth and jobs of the future.

The map of global influence is changing before our eyes. And these changes are already being felt by the entrepreneur in the Netherlands, the worker in Germany, the family in Britain.

Deliver prosperity, retain support

So I want to speak to you today with urgency and frankness about the European Union and how it must change - both to deliver prosperity and to retain the support of its peoples.

But first, I want to set out the spirit in which I approach these issues.

I know that the United Kingdom is sometimes seen as an argumentative and rather strong-minded member of the family of European nations.

And it's true that our geography has shaped our psychology.

We have the character of an island nation - independent, forthright, passionate in defence of our sovereignty.

We can no more change this British sensibility than we can drain the English Channel.

And because of this sensibility, we come to the European Union with a frame of mind that is more practical than emotional.

For us, the European Union is a means to an end - prosperity, stability, the anchor of freedom and democracy both within Europe and beyond her shores - not an end in itself.

We insistently ask: How? Why? To what end?

But all this doesn't make us somehow un-European.

The fact is that ours is not just an island story - it is also a continental story.

For all our connections to the rest of the world - of which we are rightly proud - we have always been a European power - and we always will be.

From Caesar's legions to the Napoleonic Wars. From the Reformation, the Enlightenment and the Industrial Revolution to the defeat of Nazism. We have helped to write European history, and Europe has helped write ours.

Over the years, Britain has made her own, unique contribution to Europe. We have provided a haven to those fleeing tyranny and persecution. And in Europe's darkest hour, we helped keep the flame of liberty alight. Across the continent, in silent cemeteries, lie the hundreds of thousands of British servicemen who gave their lives for Europe's freedom.

In more recent decades, we have played our part in tearing down the Iron Curtain and championing the entry into the EU of those countries that lost so many years to Communism. And contained in this history is the crucial point about Britain, our national character, our attitude to Europe.

Britain is characterised not just by its independence but, above all, by its openness.

We have always been a country that reaches out. That turns its face to the world…

That leads the charge in the fight for global trade and against protectionism.

This is Britain today, as it's always been: Independent, yes - but open, too.

I never want us to pull up the drawbridge and retreat from the world.

I am not a British isolationist.

I don't just want a better deal for Britain. I want a better deal for Europe too.

So I speak as British Prime Minister with a positive vision for the future of the European Union. A future in which Britain wants, and should want, to play a committed and active part.

Some might then ask: why raise fundamental questions about the future of Europe when Europe is already in the midst of a deep crisis?

Why raise questions about Britain's role when support in Britain is already so thin.

There are always voices saying 'don't ask the difficult questions.'

Three major challenges

But it's essential for Europe - and for Britain - that we do because there are 3 major challenges confronting us today.

First, the problems in the eurozone are driving fundamental change in Europe.

Second, there is a crisis of European competitiveness, as other nations across the world soar ahead. And third, there is a gap between the EU and its citizens which has grown dramatically in recent years. And which represents a lack of democratic accountability and consent that is - yes - felt particularly acutely in Britain.

If we don't address these challenges, the danger is that Europe will fail and the British people will drift towards the exit.

I do not want that to happen. I want the European Union to be a success. And I want a relationship between Britain and the EU that keeps us in it.

That is why I am here today: To acknowledge the nature of the challenges we face. To set out how I believe the European Union should respond to them. And to explain what I want to achieve for Britain and its place within the European Union.

Let me start with the nature of the challenges we face.

First, the eurozone.

The future shape of Europe is being forged. There are some serious questions that will define the future of the European Union - and the future of every country within it.

The Union is changing to help fix the currency - and that has profound implications for all of us, whether we are in the single currency or not.

Britain is not in the single currency, and we're not going to be. But we all need the eurozone to have the right governance and structures to secure a successful currency for the long term.

And those of us outside the eurozone also need certain safeguards to ensure, for example, that our access to the Single Market is not in any way compromised.

And it's right we begin to address these issues now.

Second, while there are some countries within the EU which are doing pretty well. Taken as a whole, Europe's share of world output is projected to fall by almost a third in the next 2 decades. This is the competitiveness challenge - and much of our weakness in meeting it is self-inflicted.

Complex rules restricting our labour markets are not some naturally occurring phenomenon. Just as excessive regulation is not some external plague that's been visited on our businesses.

These problems have been around too long. And the progress in dealing with them, far too slow.

As Chancellor Merkel has said - if Europe today accounts for just over 7 per cent of the world's population, produces around 25 per cent of global GDP and has to finance 50 per cent of global social spending, then it's obvious that it will have to work very hard to maintain its prosperity and way of life.

Third, there is a growing frustration that the EU is seen as something that is done to people rather than acting on their behalf. And this is being intensified by the very solutions required to resolve the economic problems.

People are increasingly frustrated that decisions taken further and further away from them mean their living standards are slashed through enforced austerity or their taxes are used to bail out governments on the other side of the continent.

We are starting to see this in the demonstrations on the streets of Athens, Madrid and Rome. We are seeing it in the parliaments of Berlin, Helsinki and the Hague.

And yes, of course, we are seeing this frustration with the EU very dramatically in Britain.

Europe's leaders have a duty to hear these concerns. Indeed, we have a duty to act on them. And not just to fix the problems in the eurozone.

For just as in any emergency you should plan for the aftermath as well as dealing with the present crisis so too in the midst of the present challenges we should plan for the future, and what the world will look like when the difficulties in the eurozone have been overcome.

The biggest danger to the European Union comes not from those who advocate change, but from those who denounce new thinking as heresy. In its long history Europe has experience of heretics who turned out to have a point.

And my point is this. More of the same will not secure a long-term future for the eurozone. More of the same will not see the European Union keeping pace with the new powerhouse economies. More of the same will not bring the European Union any closer to its citizens. More of the same will just produce more of the same - less competitiveness, less growth, fewer jobs.

And that will make our countries weaker not stronger.

That is why we need fundamental, far-reaching change.

21st century European Union

So let me set out my vision for a new European Union, fit for the 21st Century.

It is built on five principles.

The first: competitiveness. At the core of the European Union must be, as it is now, the single market. Britain is at the heart of that Single Market, and must remain so.

But when the Single Market remains incomplete in services, energy and digital - the very sectors that are the engines of a modern economy - it is only half the success it could be.

It is nonsense that people shopping online in some parts of Europe are unable to access the best deals because of where they live. I want completing the single market to be our driving mission.

I want us to be at the forefront of transformative trade deals with the US, Japan and India as part of the drive towards global free trade. And I want us to be pushing to exempt Europe's smallest entrepreneurial companies from more EU Directives.

These should be the tasks that get European officials up in the morning - and keep them working late into the night. And so we urgently need to address the sclerotic, ineffective decision making that is holding us back.

That means creating a leaner, less bureaucratic Union, relentlessly focused on helping its member countries to compete.

In a global race, can we really justify the huge number of expensive peripheral European institutions?

Can we justify a Commission that gets ever larger?

Can we carry on with an organisation that has a multi-billion pound budget but not enough focus on controlling spending and shutting down programmes that haven't worked?

And I would ask: when the competitiveness of the Single Market is so important, why is there an environment council, a transport council, an education council but not a single market council?

The second principle should be flexibility.

We need a structure that can accommodate the diversity of its members - North, South, East, West, large, small, old and new. Some of whom are contemplating much closer economic and political integration. And many others, including Britain, who would never embrace that goal.

I accept, of course, that for the single market to function we need a common set of rules and a way of enforcing them. But we also need to be able to respond quickly to the latest developments and trends.

Competitiveness demands flexibility, choice and openness - or Europe will fetch up in a no-man's land between the rising economies of Asia and market-driven North America.

The EU must be able to act with the speed and flexibility of a network, not the cumbersome rigidity of a bloc.

We must not be weighed down by an insistence on a one size fits all approach which implies that all countries want the same level of integration. The fact is that they don't and we shouldn't assert that they do.

Some will claim that this offends a central tenet of the EU's founding philosophy. I say it merely reflects the reality of the European Union today. Seventeen members are part of the eurozone. Ten are not.

Twenty six European countries are members of Schengen - including four outside the European Union - Switzerland, Norway, Liechtenstein and Iceland. Two EU countries - Britain and Ireland - have retained their border controls.

Some members, like Britain and France, are ready, willing and able to take action in Libya or Mali. Others are uncomfortable with the use of military force.

Let's welcome that diversity, instead of trying to snuff it out.

Let's stop all this talk of two-speed Europe, of fast lanes and slow lanes, of countries missing trains and buses, and consign the whole weary caravan of metaphors to a permanent siding.

Instead, let's start from this proposition: we are a family of democratic nations, all members of one European Union, whose essential foundation is the single market rather than the single currency. Those of us outside the euro recognise that those in it are likely to need to make some big institutional changes.

By the same token, the members of the eurozone should accept that we, and indeed all member states, will have changes that we need to safeguard our interests and strengthen democratic legitimacy. And we should be able to make these changes too.

Some say this will unravel the principle of the EU - and that you can't pick and choose on the basis of what your nation needs.

But far from unravelling the EU, this will in fact bind its members more closely because such flexible, willing cooperation is a much stronger glue than compulsion from the centre.

Let me make a further heretical proposition.

The European Treaty commits the Member states to 'lay the foundations of an ever closer union among the peoples of Europe'.

This has been consistently interpreted as applying not to the peoples but rather to the states and institutions compounded by a European Court of Justice that has consistently supported greater centralisation.

We understand and respect the right of others to maintain their commitment to this goal. But for Britain - and perhaps for others - it is not the objective.

And we would be much more comfortable if the Treaty specifically said so freeing those who want to go further, faster, to do so, without being held back by the others.

So to those who say we have no vision for Europe.

I say we have.

Flexible union

We believe in a flexible union of free member states who share treaties and institutions and pursue together the ideal of co-operation. To represent and promote the values of European civilisation in the world. To advance our shared interests by using our collective power to open markets. And to build a strong economic base across the whole of Europe.

And we believe in our nations working together to protect the security and diversity of our energy supplies. To tackle climate change and global poverty. To work together against terrorism and organised crime. And to continue to welcome new countries into the EU.

This vision of flexibility and co-operation is not the same as those who want to build an ever closer political union - but it is just as valid.

My third principle is that power must be able to flow back to Member states, not just away from them. This was promised by European Leaders at Laeken a decade ago.

It was put in the Treaty. But the promise has never really been fulfilled. We need to implement this principle properly.

So let us use this moment, as the Dutch Prime Minister has recently suggested, to examine thoroughly what the EU as a whole should do and should stop doing.

In Britain we have already launched our balance of competences review - to give us an informed and objective analysis of where the EU helps and where it hampers.

Let us not be misled by the fallacy that a deep and workable single market requires everything to be harmonised, to hanker after some unattainable and infinitely level playing field.

Countries are different. They make different choices. We cannot harmonise everything. For example, it is neither right nor necessary to claim that the integrity of the single market, or full membership of the European Union requires the working hours of British hospital doctors to be set in Brussels irrespective of the views of British parliamentarians and practitioners.

In the same way we need to examine whether the balance is right in so many areas where the European Union has legislated including on the environment, social affairs and crime.

Nothing should be off the table.

My fourth principle is democratic accountability: we need to have a bigger and more significant role for national parliaments.

There is not, in my view, a single European demos.

It is national parliaments, which are, and will remain, the true source of real democratic legitimacy and accountability in the EU.

It is to the Bundestag that Angela Merkel has to answer. It is through the Greek Parliament that Antonis Samaras has to pass his government's austerity measures.

It is to the British Parliament that I must account on the EU budget negotiations, or on the safeguarding of our place in the single market.

Those are the Parliaments which instil proper respect - even fear - into national leaders.

We need to recognise that in the way the EU does business.

My fifth principle is fairness: whatever new arrangements are enacted for the eurozone, they must work fairly for those inside it and out.

That will be of particular importance to Britain. As I have said, we will not join the single currency. But there is no overwhelming economic reason why the single currency and the single market should share the same boundary, any more than the single market and Schengen.

Our participation in the single market, and our ability to help set its rules is the principal reason for our membership of the EU.

So it is a vital interest for us to protect the integrity and fairness of the single market for all its members.

And that is why Britain has been so concerned to promote and defend the single market as the eurozone crisis rewrites the rules on fiscal coordination and banking union.

These 5 principles provide what, I believe, is the right approach for the European Union.

So now let me turn to what this means for Britain.

Today, public disillusionment with the EU is at an all-time high. There are several reasons for this.

People feel that the EU is heading in a direction that they never signed up to. They resent the interference in our national life by what they see as unnecessary rules and regulation. And they wonder what the point of it all is.

Put simply, many ask 'why can't we just have what we voted to join - a common market?'

They are angered by some legal judgements made in Europe that impact on life in Britain. Some of this antipathy about Europe in general really relates of course to the European Court of Human Rights, rather than the EU. And Britain is leading European efforts to address this.

There is, indeed, much more that needs to be done on this front. But people also feel that the EU is now heading for a level of political integration that is far outside Britain's comfort zone.

They see Treaty after Treaty changing the balance between member states and the EU. And note they were never given a say.

They've had referendums promised - but not delivered. They see what has happened to the Euro. And they note that many of our political and business leaders urged Britain to join at the time.

And they haven't noticed many expressions of contrition.

And they look at the steps the eurozone is taking and wonder what deeper integration for the eurozone will mean for a country which is not going to join the Euro.

The result is that democratic consent for the EU in Britain is now wafer thin.

Some people say that to point this out is irresponsible, creates uncertainty for business and puts a question mark over Britain's place in the European Union.

But the question mark is already there and ignoring it won't make it go away.

In fact, quite the reverse. Those who refuse to contemplate consulting the British people, would in my view make more likely our eventual exit.

Simply asking the British people to carry on accepting a European settlement over which they have had little choice is a path to ensuring that when the question is finally put - and at some stage it will have to be - it is much more likely that the British people will reject the EU.

That is why I am in favour of a referendum. I believe in confronting this issue - shaping it, leading the debate. Not simply hoping a difficult situation will go away.

Some argue that the solution is therefore to hold a straight in-out referendum now.

I understand the impatience of wanting to make that choice immediately.

But I don't believe that to make a decision at this moment is the right way forward, either for Britain or for Europe as a whole.

A vote today between the status quo and leaving would be an entirely false choice.

Now - while the EU is in flux, and when we don't know what the future holds and what sort of EU will emerge from this crisis is not the right time to make such a momentous decision about the future of our country.

It is wrong to ask people whether to stay or go before we have had a chance to put the relationship right.

How can we sensibly answer the question 'in or out' without being able to answer the most basic question: 'what is it exactly that we are choosing to be in or out of?'

The European Union that emerges from the eurozone crisis is going to be a very different body. It will be transformed perhaps beyond recognition by the measures needed to save the eurozone.

We need to allow some time for that to happen - and help to shape the future of the European Union, so that when the choice comes it will be a real one.

Real choice

A real choice between leaving or being part of a new settlement in which Britain shapes and respects the rules of the single market but is protected by fair safeguards, and free of the spurious regulation which damages Europe’s competitiveness.

A choice between leaving or being part of a new settlement in which Britain is at the forefront of collective action on issues like foreign policy and trade and where we leave the door firmly open to new members.

A new settlement subject to the democratic legitimacy and accountability of national parliaments where Member states combine in flexible cooperation, respecting national differences not always trying to eliminate them and in which we have proved that some powers can in fact be returned to Member states.

In other words, a settlement which would be entirely in keeping with the mission for an updated European Union I have described today. More flexible, more adaptable, more open - fit for the challenges of the modern age.

And to those who say a new settlement can’t be negotiated, I would say listen to the views of other parties in other European countries arguing for powers to flow back to European states.

And look too at what we have achieved already. Ending Britain’s obligation to bail-out eurozone members. Keeping Britain out of the fiscal compact. Launching a process to return some existing justice and home affairs powers. Securing protections on Banking Union. And reforming fisheries policy.

So we are starting to shape the reforms we need now. Some will not require Treaty change.

But I agree too with what President Barroso and others have said. At some stage in the next few years the EU will need to agree on Treaty change to make the changes needed for the long term future of the Euro and to entrench the diverse, competitive, democratically accountable Europe that we seek.

I believe the best way to do this will be in a newTreaty so I add my voice to those who are already calling for this.

My strong preference is to enact these changes for the entire EU, not just for Britain.

But if there is no appetite for a new Treaty for us all then of course Britain should be ready to address the changes we need in a negotiation with our European partners.

[Political content removed]

It will be a relationship with the Single Market at its heart.

[Political content removed]

It is time for the British people to have their say. It is time to settle this European question in British politics.

I say to the British people: this will be your decision.

And when that choice comes, you will have an important choice to make about our country's destiny.

I understand the appeal of going it alone, of charting our own course. But it will be a decision we will have to take with cool heads. Proponents of both sides of the argument will need to avoid exaggerating their claims.

Of course Britain could make her own way in the world, outside the EU, if we chose to do so. So could any other Member state.

But the question we will have to ask ourselves is this: is that the very best future for our country?

We will have to weigh carefully where our true national interest lies.

Alone, we would be free to take our own decisions, just as we would be freed of our solemn obligation to defend our allies if we left NATO. But we don't leave NATO because it is in our national interest to stay and benefit from its collective defence guarantee.

We have more power and influence - whether implementing sanctions against Iran or Syria, or promoting democracy in Burma - if we can act together.

If we leave the EU, we cannot of course leave Europe. It will remain for many years our biggest market, and forever our geographical neighbourhood. We are tied by a complex web of legal commitments.

Hundreds of thousands of British people now take for granted their right to work, live or retire in any other EU country.

Even if we pulled out completely, decisions made in the EU would continue to have a profound effect on our country. But we would have lost all our remaining vetoes and our voice in those decisions.

We would need to weigh up very carefully the consequences of no longer being inside the EU and its single market, as a full member.

Continued access to the Single Market is vital for British businesses and British jobs.

Since 2004, Britain has been the destination for one in five of all inward investments into Europe.

And being part of the Single Market has been key to that success.

There will be plenty of time to test all the arguments thoroughly, in favour and against the arrangement we negotiate. But let me just deal with 1 point we hear a lot about.

There are some who suggest we could turn ourselves into Norway or Switzerland - with access to the single market but outside the EU. But would that really be in our best interests?

I admire those countries and they are friends of ours - but they are very different from us. Norway sits on the biggest energy reserves in Europe, and has a sovereign wealth fund of over 500 bn euros. And while Norway is part of the single market - and pays for the principle - it has no say at all in setting its rules: it just has to implement its directives.

The Swiss have to negotiate access to the Single Market sector by sector. Accepting EU rules - over which they have no say - or else not getting full access to the Single Market, including in key sectors like financial services.

The fact is that if you join an organisation like the European Union, there are rules.

You will not always get what you want. But that does not mean we should leave - not if the benefits of staying and working together are greater.

We would have to think carefully too about the impact on our influence at the top table of international affairs. There is no doubt that we are more powerful in Washington, in Beijing, in Delhi because we are a powerful player in the European Union.

That matters for British jobs and British security.

It matters to our ability to get things done in the world. It matters to the United States and other friends around the world, which is why many tell us very clearly that they want Britain to remain in the EU.

We should think very carefully before giving that position up.

If we left the European Union, it would be a 1-way ticket, not a return.

So we will have time for a proper, reasoned debate.

At the end of that debate you, the British people, will decide.

And I say to our European partners, frustrated as some of them no doubt are by Britain's attitude: work with us on this.

Consider the extraordinary steps which the eurozone members are taking to keep the Euro together, steps which a year ago would have seemed impossible.

It does not seem to me that the steps which would be needed to make Britain - and others - more comfortable in their relationship in the European Union are inherently so outlandish or unreasonable.

And just as I believe that Britain should want to remain in the EU so the EU should want us to stay.

For an EU without Britain, without one of Europe's strongest powers, a country which in many ways invented the single market, and which brings real heft to Europe's influence on the world stage which plays by the rules and which is a force for liberal economic reform would be a very different kind of European Union.

And it is hard to argue that the EU would not be greatly diminished by Britain's departure.

Let me finish today by saying this.

I have no illusions about the scale of the task ahead.

I know there will be those who say the vision I have outlined will be impossible to achieve. That there is no way our partners will co-operate. That the British people have set themselves on a path to inevitable exit. And that if we aren't comfortable being in the EU after 40 years, we never will be.

But I refuse to take such a defeatist attitude - either for Britain or for Europe.

Because with courage and conviction I believe we can deliver a more flexible, adaptable and open European Union in which the interests and ambitions of all its members can be met.

With courage and conviction I believe we can achieve a new settlement in which Britain can be comfortable and all our countries can thrive.

[Political content removed]

Because I believe something very deeply. That Britain's national interest is best served in a flexible, adaptable and open European Union and that such a European Union is best with Britain in it.

Over the coming weeks, months and years, I will not rest until this debate is won. For the future of my country. For the success of the European Union. And for the prosperity of our peoples for generations to come.

Mayor of London Boris Johnson speech to Thomson Reuters, 4 December 2014
Extracts from (check against delivery):

'It was 15 years ago that well-informed people said London would never survive life outside the euro zone. The CBI said so. Many senior City figures said so. Adair Turner pleaded for us to join, and so did Chris Huhne, Will Hutton and other noted economic thinkers. Business would flee the city for Frankfurt, we were told by the pro-euro lobby. Ivy would wind round the Natwest Tower and giant mutant rats with red gooseberry eyes would crawl from the gutters in Throgmorton Street to gnaw the starving faces of the last British bankers. That's what they said, more or less.

As it is, London remains the greatest financial capital on earth, with 40 per cent of all the trade in the single currency, with about 640,000 jobs still created by business and financial services, and with financial services to the value of £17bn per year going to the rest of the EU.

The dire predictions of the euro enthusiasts were unfounded, to put it mildly, and the predictions of the euro-sceptics have turned out to be entirely correct. The euro is a calamitous project.

Exactly as foretold, its one-size fits all monetary policy has become a lethal engine that simultaneously trebuchets German goods across the euro zone, while deepening the misery for the peripheral countries whose unit labour costs make it hard for them to compete.

….

The intention now is to make a bad situation worse. In the hope of reassuring the markets the eurozone countries are painfully composing a fiscal and political union that has no democratic legitimacy whatever. It cannot hope to have such legitimacy. This is a continent where there has been no single European political consciousness or sense of identity since the days of the Roman Empire.

In an ideal world we might have recognised reality two years or three years ago. We might have bisected the eurozone to restore growth, with short term pain giving way to renewed competitiveness. The eurozone might have gone through its September 1992 moment – the prelude to British recovery from the ERM. I no longer see much hope of this happening. Politics has prevailed.

The Greeks, the Spanish, the Portuguese, and yes, even the French are now being tortured on a Procrustean rack from which there is no escape. The eurozone is absorbing the entire political energies of the EU. Indeed, in a depressing way it is morphing into the EU.

….

In this unhappy position the question is how to maximise the interests of London and of the UK as a whole. We can no longer pretend that this country is at the heart of Europe, if by Europe you mean the clutch of steel and glass institutions that huddle around Rond-Point Schuman in Brussels.

That admission should be liberating, both for us and for our friends and partners. We are not going to be part of the fiscal union, under this or any other foreseeable UK government. We are not going to be part of the banking union, and this should not be a matter of reproach.

As the governments of the eurozone go forward with treaty changes that materially affect this country – using EU institutions, our institutions, to create an economic government of Europe – then we should seize that moment to ask the British people to define themselves and their future in Europe.

I think I have a pretty good idea what most commonsensical people want from our relationship with the EU.

1. We want free trade, and to make sure that other countries can't stitch things up against British goods and British business.
2. We want the freedom to set our own monetary policy, so that we can preserve the obvious advantages of an independent currency.
3. We want an independent tax policy, so that this country can be tax competitive and stimulate enterprise.

4. We want less bureaucracy and less intrusion by Brussels into seemingly every aspect of our lives.
5. We would like the EU to focus on completion of the Single Market, where there are still absurd barriers in everything from architecture to the legal profession.
6. We want to be friends. We want a relationship in which we are not endlessly made to feel bad for not sharing every doctrine of the euro-religion.

What we should now say – in the friendliest possible way - is, look, we warned you about the euro. We said that it was a political construct that would risk serious economic pain, and we were right. The chronic euro uncertainty has been choking off growth in the EU – including Britain – and around the world.

This pared down relationship is essential and deliverable, though you will hear a lot of huffing and puffing to the contrary. Our partners want us there, in the sense that they need us as a giant export market. They need the UK to be there at the council table, making the case for free markets and for common sense. They would welcome a resolution of the British question and the endless bickering, just as much as we will welcome an end to the criticism that we are the backmarker and lack the requisite fervour for ever closer union.

….

We should abandon the goal of being at the heart of the councils of the Breydel building or the Justus Lipsius, because those deliberations have been subsumed by a project that we are neither members of nor believe in. The future for London is to be at the heart of the world economy, the centre of a series of interconnecting sets, trading freely with the EU, but with our eyes on the growth economies of the 21st century.

The sceptics were proved wrong about London before and they will be proved wrong again. The city has flourished in the last 2000 years by being open to talent and thinking globally - and that is how we will flourish in the decades ahead. And an open, flourishing and dynamic London is the best way possible of stimulating the rest of the UK. And indeed it is the best thing for Europe too.'

GREATER**LONDON**AUTHORITY