GLAECONOMICS

Economic Evidence Base

to support the London Plan, the Transport Strategy and the Economic Development Strategy

Transport for London

LONDON DEVELOPMENT AGENCY

MAYOR OF LONDON

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Executive summary

On many measures London is a very successful economy. London accounts for over one-fifth of the GVA of the UK economy and one-third of the UK's exports of services. It has a larger economy than many European countries and over the past decade or so London has grown faster than the UK economy. London has a higher level of income per head than any other UK region.

However, for all its success, London has some significant socio-economic issues. London has a higher proportion of its population out of work than the UK as a whole – a situation that has persisted since the early 1990s. In addition, after accounting for housing costs, London has the highest rate of child poverty in the country.

This evidence base attempts to provide an understanding of the economic forces impacting on London. This should provide a context to the main economic and socio-economic issues facing the capital in the hope that such an understanding will result in more effective strategies and ultimately more effective interventions.

The evidence base shows that London's economic success is based on its competitive strengths across a range of factors. For business these factors include, amongst others, access to qualified staff, access to markets and a competitive business environment. People are attracted to London by the variety of career opportunities, the diversity and openness to different cultures, as well as the vast array of leisure and cultural activities.

The concentration of businesses and people in London, particularly in Central London, puts upward pressure on the price of land and drives businesses to become more productive and people to become more skilled. By locating close to one another businesses benefit from agglomeration economies which enable them to be more productive than when they are more spread out. This, together with London's openness to trade and the extra competition that brings, has resulted in London's economy shifting away from more land hungry uses like manufacturing towards less land hungry service uses. As a result, London is now one of the world's leading centres for international business services and clearly ranks as the world's leading centre in a number of areas of international financial intermediation.

To remain competitive, London needs to manage a number of risks to its attractiveness to both businesses and people.

One significant global risk is climate change. As a result of past greenhouse gas emissions some level of climate change is now inevitable. Unless emissions are reduced significantly from their current levels more dramatic changes to our climate may become unavoidable with considerable economic and social impacts. Whilst resolving this issue will require difficult international agreements, it is likely that, over time, economic activity will need to become much more carbon efficient and planning for this could provide London with new economic opportunities. As well as mitigating the effects of climate change, London needs to adapt to the change in the climate that is already occurring.

As a result of the recent financial crisis and economic downturn there are likely to be changes to regulation and a significant deterioration in the UK's public finances. Both these changes could reduce the attractiveness of London as a place to do business when compared to other cities. In addition, issues such as crowding and congestion on London's transport and the availability and cost of both staff and office space could also impact on London's attractiveness as a place to do business. Similarly, the attractiveness of London as a place for people to live and work could reduce if issues affecting the quality of life in London (like the cost of living, crime and safety and London's environment) are not managed effectively.

As noted above, for all its success, London has some significant socio-economic issues. As well as containing a high share of the UK's most prosperous individuals, London is also home to a high share of the UK's poorest individuals. Part of the reason for London having a high share of the UK's poorest individuals is because London has a higher proportion of its population out of work than the UK as a whole. This is also a factor behind London's high rate of child poverty. After accounting for housing costs – itself a significant issue for London – London has the highest rate of child poverty in the country. Child poverty can also impact on individuals' future chances of progressing in education and, as a result, their future labour market prospects.

Introduction

The purpose of this document is to provide an understanding of the economic forces impacting on London as a context to the main economic and socio-economic issues facing London. As such it aims to provide the economic evidence base to support the London Plan, Transport Strategy and Economic Development Strategy.

Considerable analysis from across the GLA family has contributed to this evidence base. Importantly, feedback on previous versions has been used to refine and improve the analysis and to reflect issues brought to the fore following the recent public consultation on draft publications of the three Mayoral strategies.

The provision of a good quality economic evidence base should result in better strategies and ultimately more effective interventions by ensuring:

- that the main issues facing London are tackled;
- that policy is developed effectively, addressing clear market failure or equity issues; or
- where, for whatever reason, policy is to go against the market, the implications of this, in terms of the size and nature of policy intervention required, are understood.

Evidence on the main issues facing London have been analysed in the context of market forces, particularly of the global nature, that have done much to shape London's current industrial structure and economic success. This starting point reflects the accepted economic principle that free markets are, under certain ideal conditions, the most effective way to organise economic activity for the collective benefit of society – with prices acting to ensure an efficient allocation of resources. However, interventions by the public sector are necessary in some instances because real-world markets are subject to failures that prevent an efficient allocation of resources and harm economic performance as a result. From this framework stems the concept that to be effective public intervention should, from an economic perspective, address clear market failure.

It is therefore by addressing market failure that policy and interventions developed by the Mayoral strategies can improve London's economy and the welfare of its population. The public sector can also act to alter what it believes to be a socially undesirable outcome (too much poverty for example) and in London the Mayor has a mandate to intervene for such equity reasons. Equity-based interventions can involve a trade-off with market efficiency. Value judgements regarding this trade-off are made by democratically elected politicians.

A consideration of the main market failures underpinning activities of the Mayor's agencies are set out in an appendix to this report. However, it is important to note that public sector intervention is not without costs and there are risks posed to social welfare when activity is undertaken by the public sector (an issue known as government failure). Interventions by the public sector, even when underpinned by clear rationale, may not necessarily result in an improvement to the status quo.

Following an overview in Chapter 1 of the economic forces that have driven London's current industrial structure, Chapter 2 examines geographical patterns of economic activity in London and its surrounding area. Alongside this, Chapter 2 explains how agglomeration and economic forces have influenced spatial patterns of activity and the consequential housing and further transport needs. Chapter 3 examines in more detail the current success of London's economy and the factors that attract businesses and people to London.

Chapter 4 looks at the outlook for economic growth with consideration of the likely impact on London's economy of the recent financial crisis – pertinent given the wealth created by the finance sector in London in the years preceding the crisis.

Chapters 5 through 7 look at some of the issues facing London in the future. These issues are the product of market forces and the market failures highlighted above. Chapter 5 looks at the issue of climate change, the result of a significant market failure leading to higher than socially optimal greenhouse gas emissions. The chapter considers how mitigating climate change could potentially bring opportunities to London's economy and also looks at how London will need to adapt to climate change. Chapter 6 looks at some of the risks to London's attractiveness. It particularly looks at threats to London's business environment and the risks of further deterioration in London's quality of life. Chapter 7 concludes with some of the main socio-economic issues facing London – considering worklessness, child poverty and educational attainment amongst others.

Chapter 1: Trade and London's economic specialisation

Growth in an economy's income per head depends on the ability to increase productivity. Openness to trade, through various channels, helps improve productivity. Openness to trade, and the competition that brings, results in places specialising in different things over time. As a result of these competitive forces, economic activity in London is currently concentrated in financial and business services as well as many cultural activities. Many of London's services have a strong international focus – particularly within the financial services sector. Although Europe and North America account for around three-quarters of the UK's exports of services, new emerging markets such as China are growing rapidly (and are forecast to continue to grow). As a result, the import requirements of emerging markets are likely to play an increased role in London's exports in the future.

This chapter looks at the global economic forces that impact on London's economy and what implications they have for the types of activity carried out in London. It also looks briefly at what current trends suggest about future trade activity.

Trade and productivity

Growth in an economy's income per head depends very much on the ability to raise productivity ie, the economy's ability to produce more for a given level of resource. Openness to trade – both exports and imports – strengthens productivity. Indeed, both economic theory and experience show that economies which trade more tend to grow faster[1].

One way trade encourages greater productivity is through the exploitation of economies of scale. At its most basic, trade increases the size of markets to which producers can sell. This is important because the bigger the market the more businesses and firms can take advantage of economies of scale and so operate at a more efficient size, producing goods and services at lower cost.

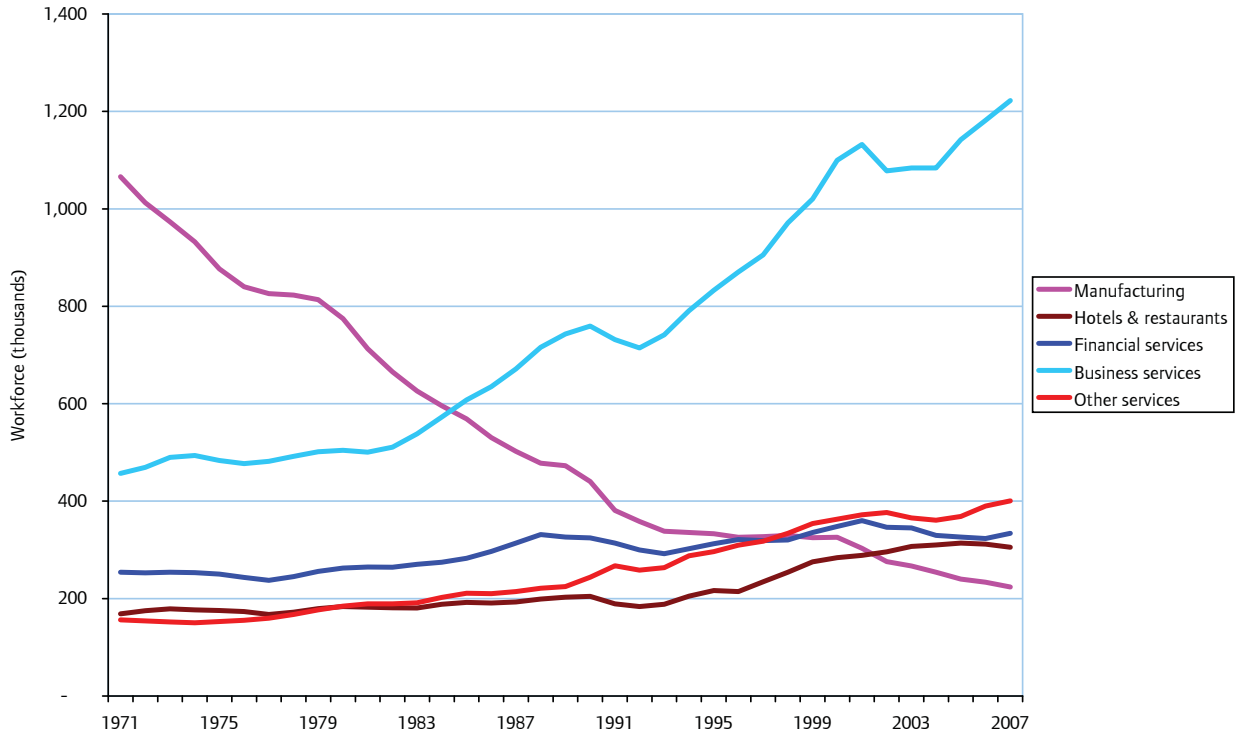
Openness to trade can also increase productivity by allowing different countries and/or regions to concentrate on different areas of production, focusing on their respective comparative advantage[2]. Comparative advantage relates to the cost of producing one good relative to the cost of producing another good and implies that 'absolute advantage', i.e. differences in absolute costs are not necessarily critical. The implication is that areas – like individual elements within the labour force – should concentrate on what they do best. This means that various types of industrial or business activity are economically viable in developed countries and cities with relatively high costs in spite of the fact that land and labour may be cheaper in many emerging economies such as India and China. Sometimes these geographic specialisations experience a degree of 'lock-in' whereby historical or institutional factors which reflect past trade patterns produce agglomerations of activity which become ingrained even though the original economic motive for the location may be no more.

Openness to trade increases the returns to innovation, itself a driver of growth and productivity, on account of increased market size and also enables the economy to benefit from access to new technology (by importing new technology from other places). Perhaps most importantly, openness to trade brings greater competition which encourages firms to be as efficient as possible.

Structural change and specialisation

This drive to higher productivity through competition, innovation and openness to trade has contributed to structural change in the UK economy (as elsewhere in the world), encouraging domestic resources to shift from less productive to more productive uses. As a result of such economic forces over the past three decades or so, London has seen a significant shift away from manufacturing towards services. This is shown in Figure 1.1 which shows that manufacturing employment in London fell from over 1 million jobs in 1971 to around 225,000 jobs in 2007. In contrast, employment in the broad category of business services increased from under ½ million in 1971 to over 1.2 million in 2007. Over the same period there have also been increases in employment in hotels and restaurants, other services and, to a lesser extent, financial services.

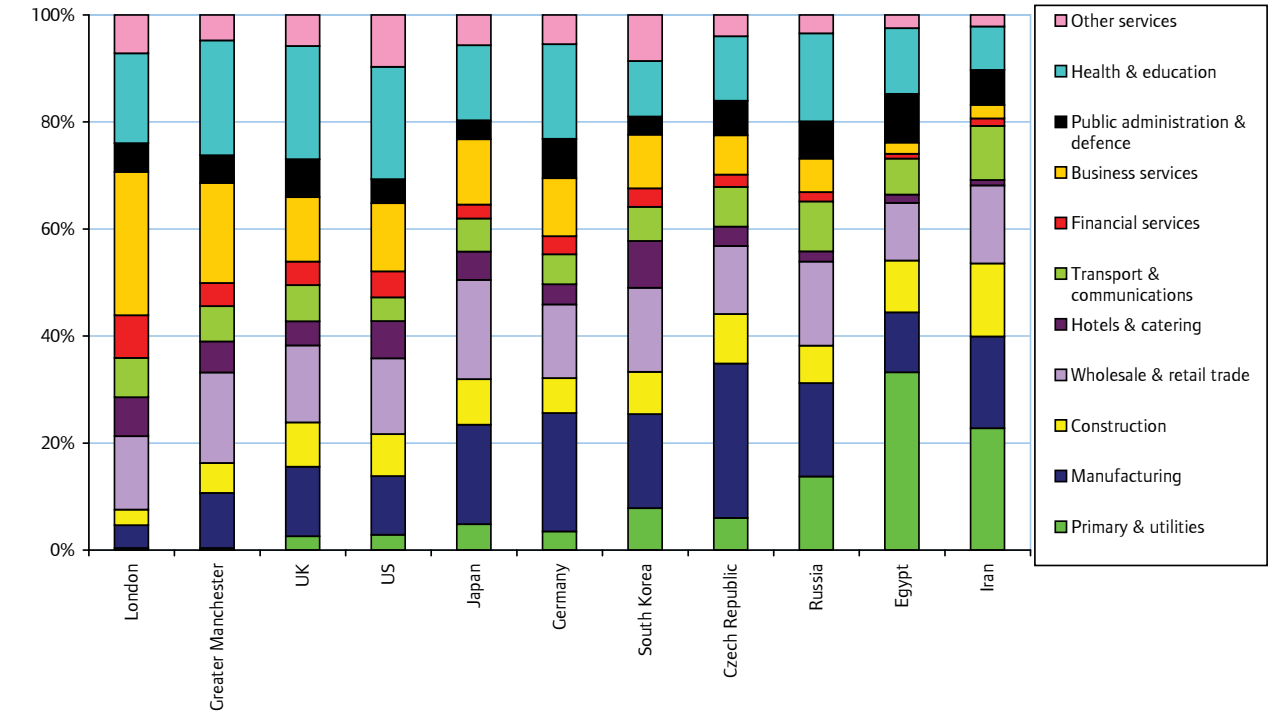
Figure 1.1: Employment in London by sector over time



Source: Experian Economics

As a result of the competition that openness to trade brings and the specialisation it drives, different countries can exhibit different employment structures. Figure 1.2 shows that the UK's employment composition is different from not just that of Iran or Egypt but also developed nations such as Japan or Germany which have a stronger manufacturing focus. London itself is even more concentrated in the financial and business services sectors than the UK and other developed countries[3]. Even within the most economically-advanced G7 economies, different countries have, at least slightly, different concentrations of economic activity[4].

Figure 1.2: Industrial composition of London, Manchester and the UK compared to other countries (2007/08)



Source: International Labour Organisation and ONS Annual Business Inquiry (Crown Copyright)

Note: Latest data for each country/region is used which is either 2007 or 2008.

Table 1.1 shows the relative export specialisation of each of the G7 nations in individual service sectors. Cells with an index of less than one (shaded blue) indicate that that country's exports are not specialised in that sector relative to the G7 patterns. Cells above unity (shaded orange and red) show export specialisation. It can be seen from this that currently the UK is specialised in a number of service activities: financial services, insurance and computer & information services. In contrast, the US is specialised in royalties/licence fees, personal, cultural and recreational services, and government. It can also be seen from Table 1.1 that the UK is particularly unspecialised – at least relative to the G7 nations – in the construction sector.

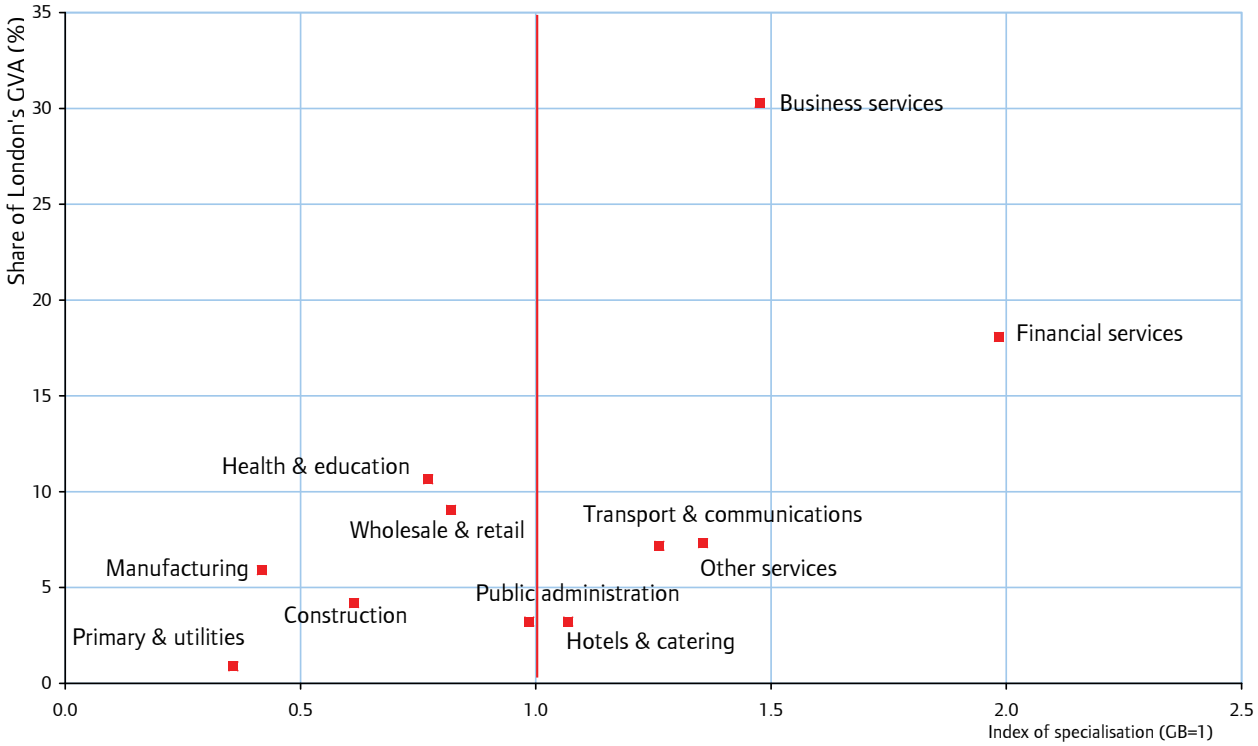
Table 1.1: Revealed Comparative Advantage in exports of services against the G7 advanced economies (2003)

	Canada	France	Germany	Italy	Japan	UK	US
Transport	0.6	1.2	0.8	0.7	1.2	1.2	1.1
Travel	0.6	1.4	0.7	1.5	0.3	0.9	1.4
Communications	1.1	1.2	0.7	1.1	0.3	1.5	1.2
Construction	0.1	1.3	1.7	1.2	1.8	0.1	0.6
Insurance	1.4	0.7	1.1	0.5	0.1	3.2	0.7
Financial	0.3	0.2	0.4	0.5	0.5	3.8	1.4
Computer & information	1.2	0.5	1.3	0.2	0.3	2.6	0.9
Royalties & licence fees	0.4	0.4	0.2	0.1	1.2	1.1	2.3
Other business services	0.6	1	0.7	1.1	0.6	1.8	1.2
Personal, cultural & recreational services	1.5	1.1	0.3	0.5	0.1	1.3	2
Government	0.4	0.2	1.1	0.4	0.4	0.9	2.1

Source: Productivity in the UK 6: Progress and new evidence. HM Treasury (2006)

Figure 1.3 looks in more detail at the current industrial structure of London's economy (as represented by employee jobs) which has resulted from the forces of competition, innovation and openness to trade set out earlier. If London reflected the same employment proportions as Great Britain as a whole then all the sectors shown would fall on the vertical red line in Figure 1.3. The chart shows that economic activity in London is concentrated in financial services, businesses services and – to a lesser extent – other services and transport and communications.

Figure 1.3: London's broad sectors: Index of Specialisation[5] (relative to Great Britain) and share of London's total output (2008)



Source: Annual Business Inquiry – ONS Crown Copyright; UK Regional Accounts – ONS Crown Copyright

These broad sector headings hide a range of different economic activity and differing degrees of specialisation within a particular sector. When examined at a more disaggregated level, as shown in Table 1.2, it can be seen that London specialises in such things as securities broking/fund management, media activities – London is strong on 'cultural services' – and advertising for example. Its employment is not concentrated on sectors such as manufacturing, the primary industries and construction.

Table 1.2: London's industrial structure and main specialisations, 2008

Sector	London Employee Jobs	Share of Total London Employee Jobs	London Share of GB Employee Jobs	Index of Special-isation
Total London Economy	**4,168,527**	**100.0%**	**16%**	**1.0**
Financial Services	**331,850**	**8.0%**	**31%**	**2.45**
of which				
Security broking and fund management	*47,948*	*1.2%*	*74%*	*15.68*
Other financial intermediation not elsewhere classified	*37,248*	*0.9%*	*60%*	*7.97*
Activities auxiliary to financial intermediation (banking)	*29,398*	*0.7%*	*33%*	*2.64*
Other monetary intermediation	*141,047*	*3.4%*	*30%*	*2.29*
Activities auxiliary to insurance and pension funding	*44,158*	*1.1%*	*26%*	*1.94*
Business Services	**1,116,213**	**26.8%**	**23%**	**1.63**
of which				
Advertising	*37,746*	*0.9%*	*46%*	*4.55*
Market research and public opinion polling	*27,813*	*0.7%*	*45%*	*4.51*
Legal activities	*86,011*	*2.1%*	*31%*	*2.43*
Investigation and security activities	*50,823*	*1.2%*	*30%*	*2.28*
Business and management consultancy activities	*100,177*	*2.4%*	*29%*	*2.26*
Accounting, book-keeping and auditing activities; tax consultancy	*61,972*	*1.5%*	*28%*	*2.12*
Industrial cleaning	*110,239*	*2.6%*	*25%*	*1.76*
Other business activities not elsewhere classified	*81,057*	*1.9%*	*24%*	*1.69*
Computer and related activities	*129,566*	*3.1%*	*24%*	*1.67*
Real estate activities	*109,739*	*2.6%*	*21%*	*1.48*
Other Services	**300,280**	**7.2%**	**21%**	**1.46**
of which				
Radio and television activities	*38,736*	*0.9%*	*63%*	*9.16*
Activities of professional organisations	*11,758*	*0.3%*	*50%*	*5.38*
Motion picture and video activities	*21,241*	*0.5%*	*49%*	*5.20*
Artistic and literary creation and interpretation	*23,395*	*0.6%*	*42%*	*3.97*
Other entertainment activities (theatre/arts)	*33,449*	*0.8%*	*35%*	*2.95*
Gambling activities	*21,831*	*0.5%*	*22%*	*1.56*
Transport and Communications	**307,449**	**7.4%**	**20%**	**1.34**
of which				
Scheduled air transport	*45,205*	*1.1%*	*63%*	*9.24*
Other supporting transport activities	*43,413*	*1.0%*	*30%*	*2.35*
Activities of travel agencies and tour operators	*23,795*	*0.6%*	*24%*	*1.74*
Transport via railways (national rail & freight)	*12,915*	*0.3%*	*24%*	*1.72*
Activities of other transport agencies	*15,858*	*0.4%*	*24%*	*1.72*
Telecommunications	*43,234*	*1.0%*	*22%*	*1.51*

Sector	London Employee Jobs	Share of Total London Employee Jobs	London Share of GB Employee Jobs	Index of Special-isation
Hotels and restaurants	**303,034**	**7.3%**	**17%**	**1.09**
of which				
Catering	*53,512*	*1.3%*	*22%*	*1.53*
Restaurants	*143,377*	*3.4%*	*22%*	*1.52*
Public administration	**223,487**	**5.4%**	**16%**	**0.99**
Wholesale and Retail	**570,927**	**13.7%**	**13%**	**0.80**
Education	**309,570**	**7.4%**	**12%**	**0.77**
Health and social work	**390,354**	**9.4%**	**12%**	**0.73**
Construction	**122,514**	**2.9%**	**10%**	**0.58**
Manufacturing	**178,158**	**4.3%**	**7%**	**0.38**
of which				
Publishing	*53,677*	*1.3%*	*38%*	*3.34*
Mining, Utilities and Agriculture	**14,652**	**0.4%**	**3.0%**	**0.19**

Source: Annual Business Inquiry. Note: Employee Jobs only, excludes self-employed. The table shows selected areas of specialisation in different broad sector categories; it does not represent a comprehensive list of economic activities within each broad sector.

Box 1.1: London's areas of specialisation

Financial services

Banking

There were 250 branches and subsidiaries of foreign banks in London in March 2008, more than any other centre worldwide. A third of these banks were from the euro area. Around half of European investment banking activity is conducted in London. Four fifths of European hedge-fund assets were managed out of the UK in 2008 and the vast majority of this was managed from London.

Insurance

London is the world's largest international insurance market, with gross premium income of £24.5bn in 2007. It is the main skill centre for world reinsurance.

Foreign exchange

The London foreign exchange market is the largest in the world, with average daily turnover of $1,679bn in October 2008. This represented 35 per cent of global turnover, more than New York and Tokyo combined. Foreign exchange trading has nearly trebled in value since 2001.

Fund management

London is one of the two largest fund management centres; New York being the other. London is the leader in the management of overseas clients' non-domestic portfolios. London is also one of the leading centres for private equity and is an important centre in the sovereign wealth market as a clearing house and a location from where some of these funds are managed. London along with New York, Singapore and

Hong Kong is one of the main centres for onshore investment of private wealth. London is Europe's leading centre for hedge funds. At end-2008 four-fifths of European-based hedge funds' assets were managed out of London.

Securities markets

London has a higher number of foreign-listed companies than any other exchange. The London Stock Exchange is one of the leading centres for global foreign equity trading and international IPOs. London accounts for 70 per cent of trading in the international bond market.

Derivatives

London is the biggest market in the world for derivatives traded over-the-counter. It is also the second largest after Chicago for exchange traded futures and options. London is the main centre for Eurex trading, with 46 per cent of Eurex turnover based in the UK in 2007. Liffe is the world's leading exchange for euro short-term interest rate derivatives and equity options. London Metal Exchange is the biggest non-ferrous metals exchange in the world.

Carbon markets

London is central to the EU Emissions Trading Scheme (EU ETS) as European Climate Exchange contracts, traded on the ICE Futures Europe exchange in London, made up 91 per cent of futures trading on the EU ETS in 2008.

Bullion market

London is the world's most liquid spot market for gold and for gold lending and the global clearing centre for worldwide gold trading. London is Europe's largest centre for commodities trading and accounts for around 15 per cent of global trade in commodities.

Islamic Finance

London is the leading Western centre for Islamic finance, with six firms that are fully Sharia compliant and over 20 banks in total supplying Islamic financial services.

Business services

Maritime services

London offers the most comprehensive range of specialist maritime services in the world, covering shipbroking, legal services, finance, insurance, ship classification, dispute resolution, publishing and research.

Accountancy

Around 62,000 people are employed in London in accounting and related services. The sector is dominated by four firms although most of the major firms have offices in the city. The services that accounting firms offer include auditing, tax planning, corporate finance and business recovery services.

Legal services

London is one of the two leading centres for international legal services, the other being New York. Based on revenue, three of the top five law firms in the world are international law firms based in London. London is also a leading centre for international dispute resolution.

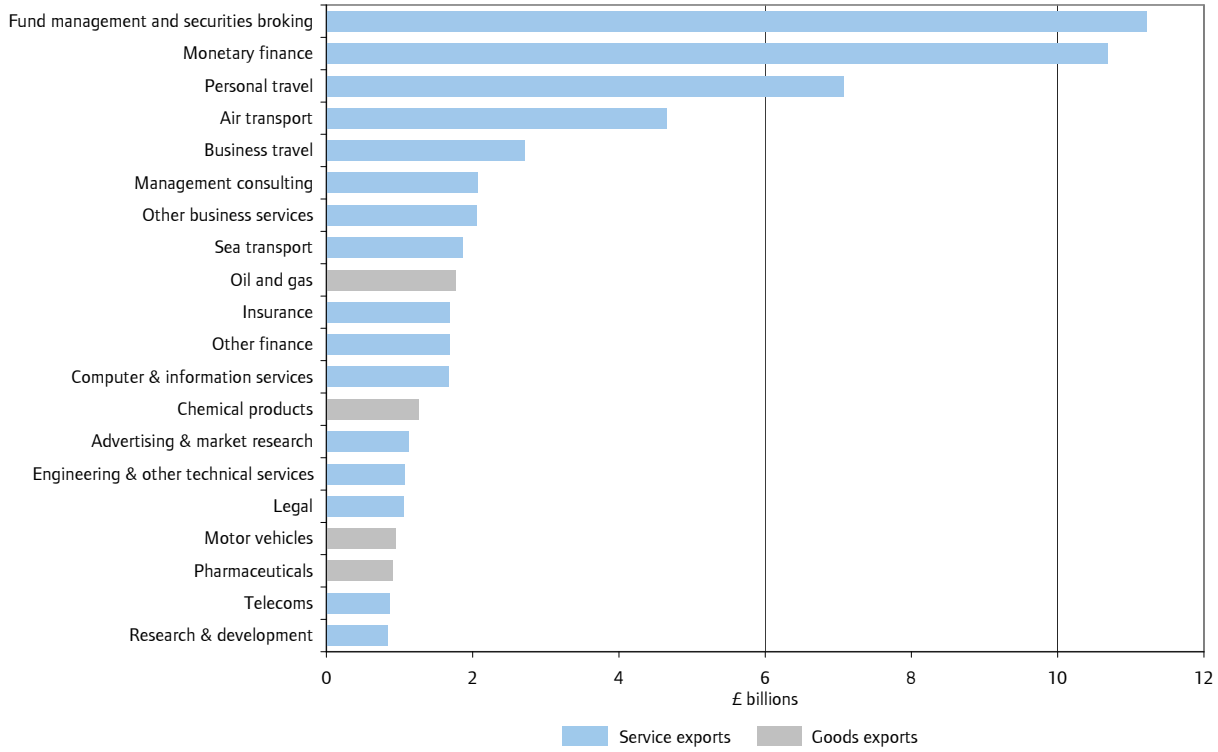
Creative and cultural industries

London has a competitive advantage in many of the creative sectors such as TV/radio and advertising. The television industry is open to the global market with total UK exports accounting for £740 million in 2006. According to the World Advertising Research Centre the UK was ranked first across European countries in expenditure on advertising.

Sources: International Financial Services London, GLA Economics

As a result of competition and the need for businesses to focus resources in the most productive activities it is perhaps unsurprising that many of London's current areas of specialisation are areas of 'revealed comparative advantage' for the UK relative to other G7 countries (as illustrated in Table 1.1). This implies that London has strong international trading links. Indeed, GLA Economics estimates that London's total exports of goods and services totalled £66.4bn in 2008 with London accounting for one third of all UK exports of services. Figure 1.4 shows the estimated value of London's top 20 exports of goods and services in 2008. London's main exports are fund management and securities broking, monetary finance as well as business and leisure tourism (business and personal travel and air transport)[6].

Figure 1.4: Estimated values of London's top 20 exports of goods and services in 2008



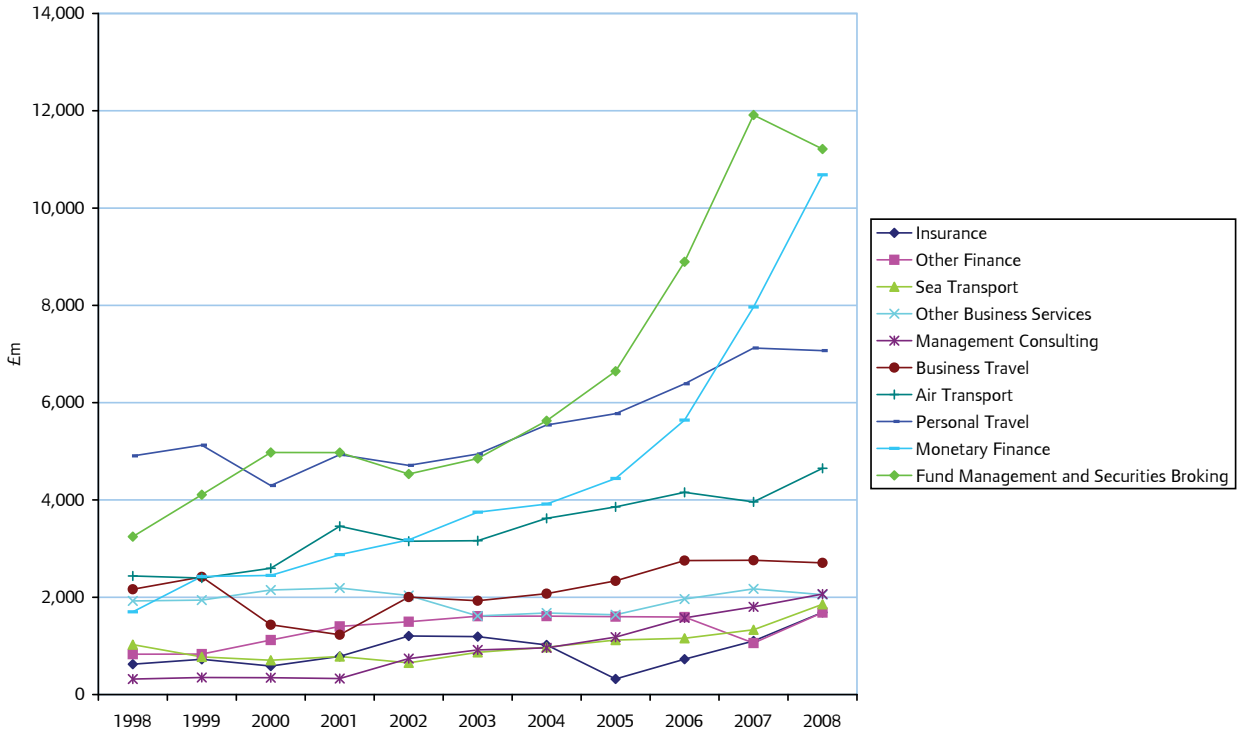
Source: GLA Economics

Historical analysis of London's international service exports 1998-2008

Using the same estimation process (i.e. using employment shares to apportion London's share of exports from total UK exports), GLA Economics has looked at what estimates of exports of services look like over the past decade or so. It should be noted that this process makes no adjustment for the different productivity of London's employees, which tends to be higher than the average for the UK (and as such could raise London's level of exports). Neither is any adjustment made for a potentially higher rate of export intensity in London – that is, production in London may be more geared towards overseas markets than other UK regions. As a result, these estimates for London's exports may well understate the true position. In fact the 2009 report *London's Place in the UK Economy* published by the LSE states that "London is exceptional in that its service sector is almost as export-oriented as its goods sector, with a proportion of sales exported about half as large as any other region, and double the national average in its specialist service activities"[7]. Nevertheless, and in the absence of reliable regional trade figures, these estimates are made to try and provide some more detail around London's international export performance over time.

Figure 1.5 clearly demonstrates that of the top ten exported services from London in 2008, the services with the most rapid increase over the past decade and also the highest value are fund management and securities broking, and monetary finance, followed by personal travel. A significant increase in the exports of financial services appears to have taken place between 2004-2008. This is matched by a similar rise in management consultancy although the magnitude is smaller. Business travel also appears to have seen a similar, but less dramatic, increase.

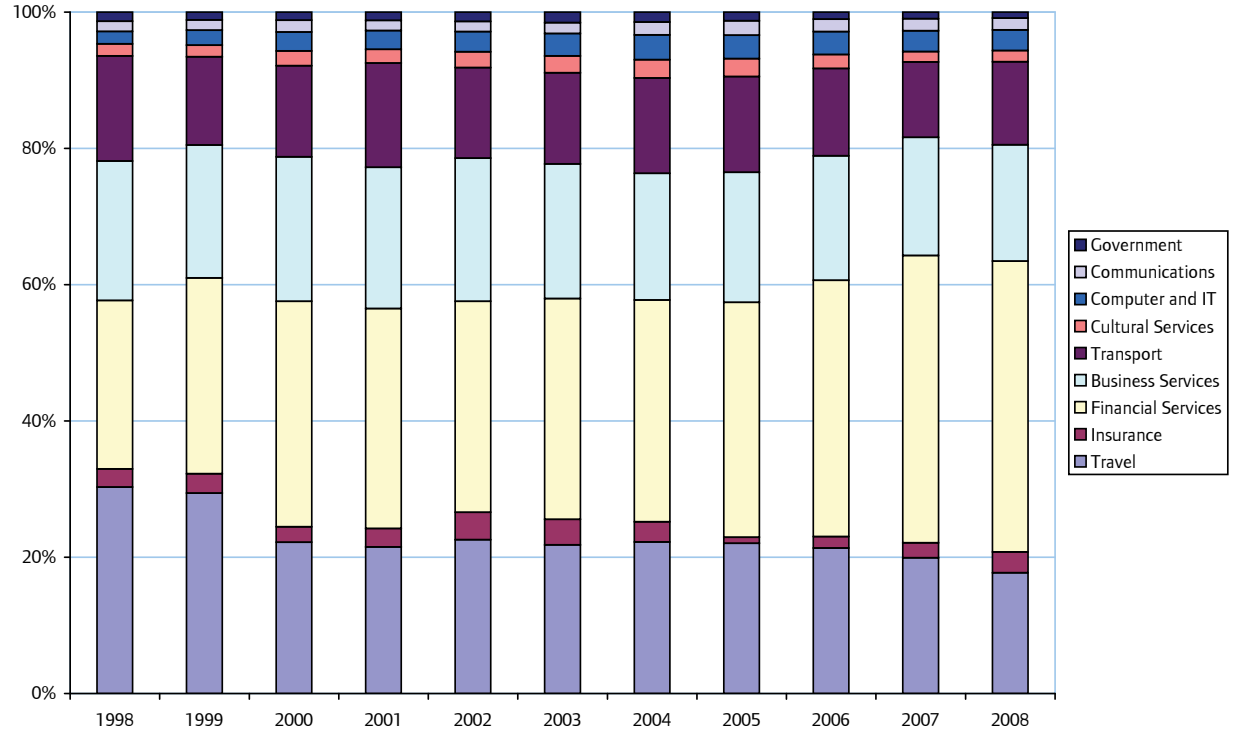
Figure 1.5: Estimate of London's top ten exports of services in 2008 over time (£m)



Source: GLA Economics

Figure 1.6 shows the estimated share of London's service exports by broad industrial category. Since 1998 financial services has overtaken travel as the most significant component of London's service exports: by 2008 representing approximately 43% of the total[8].

Figure 1.6: Estimated share of London's service exports by industrial category

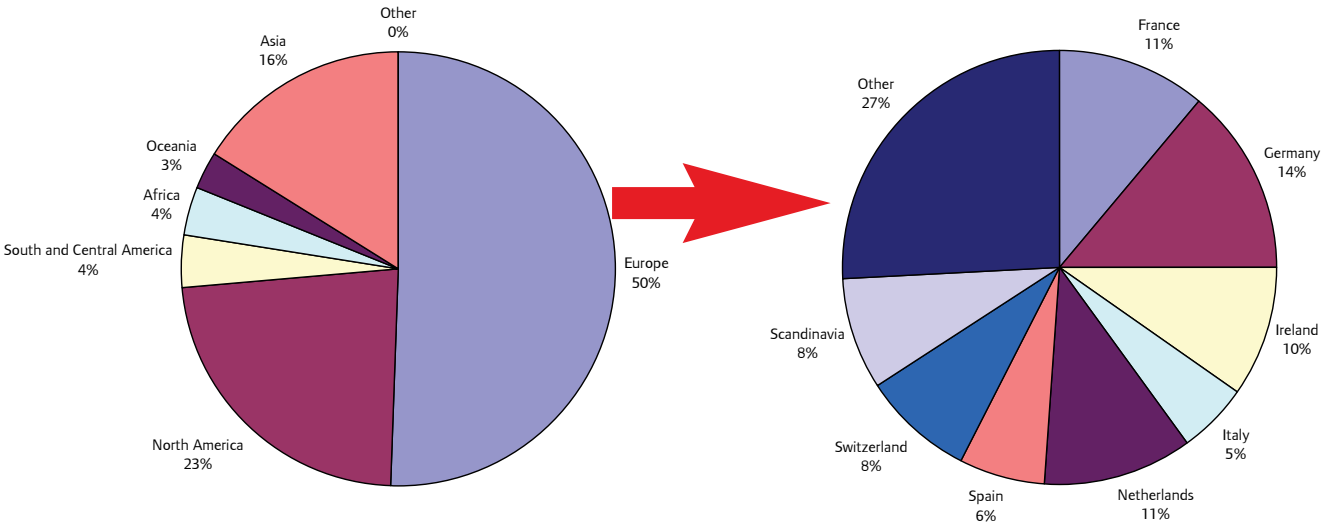


Source: GLA Economics

Geographical analysis of exports

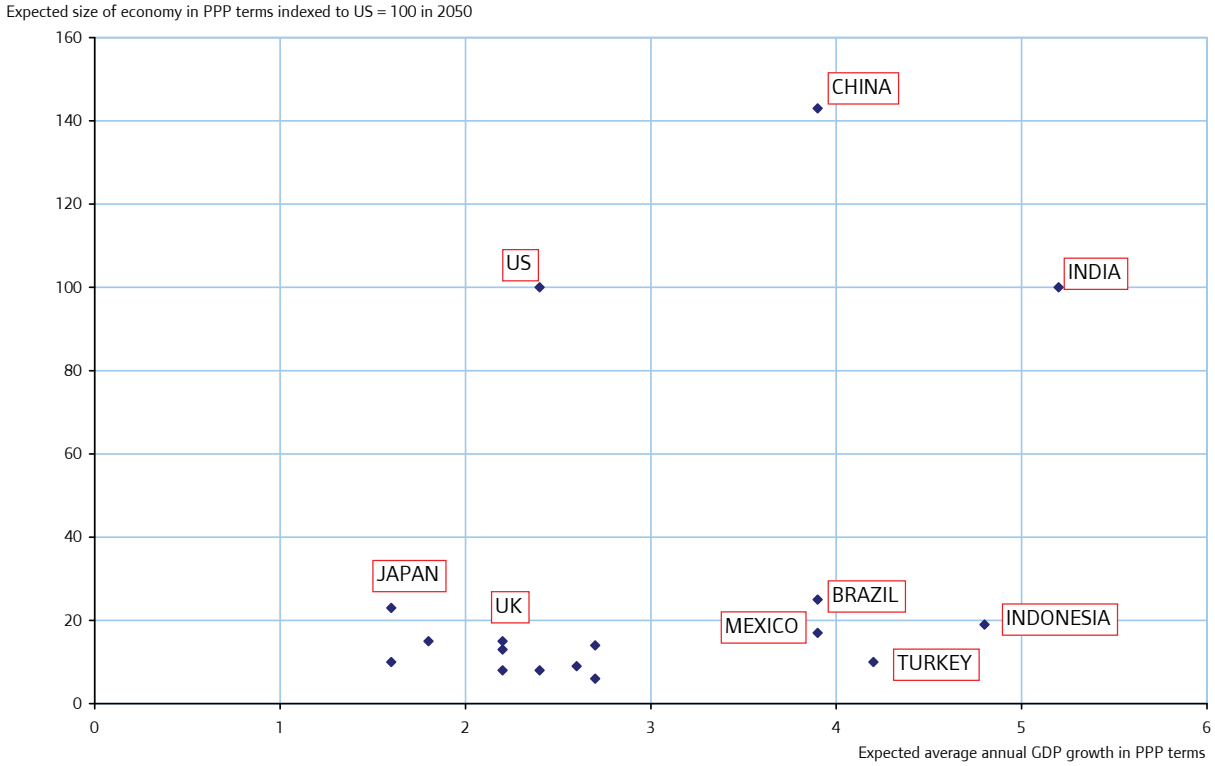
Almost three-quarters of all UK exports of services are destined for Europe and North America as shown in Figure 1.7[9]. However, the UK and London's export markets are likely to change over time.

Figure 1.7: UK exports of services by destination (2008)



Source: ONS Pink Book – Crown Copyright and UNCTAD

Figure 1.8: Expected size of global economies by 2050 and their expected average annual GDP growth



Source: PriceWaterhouseCoopers for the United Nations (2008)

Over the last two decades far higher rates of annual output growth have been achieved in China and India than in the developed economies of North America, the European Union or Japan. This rapid growth is expected to continue – not just in China and India – but in other BRIC countries (ie, Russia and Brazil) and in smaller economies such as Indonesia, Turkey and Mexico. By 2050, China is expected to be the largest economy in the world and – at least in purchasing power terms – India will also be a similar size to the United States. These three economies are expected to be far larger than any others as shown by the relative positions on the vertical scale in Figure 1.8. When examined in per capita terms, China and India will remain relatively undeveloped even by 2050 with the UK, Japan and the US still expected to have far higher per capita incomes. The fact that per capita incomes in China and India will remain relatively low could limit demand for service imports. Nevertheless, the sheer scale, and growth, of these economies mean they become increasingly important global markets.

Chapter 2: The spatial nature of London's economy

The trade of goods and services is the driving force of urbanisation. Cities benefit from agglomeration economies, external benefits that arise when economic activity takes place in a concentrated space. The spatial nature of London's economy is the product of more than a century of trade and agglomeration at work. Central London is and will likely remain the dominant employment centre in the Greater South East region, with over one million jobs. London's specialised, globally competitive activities tend to locate here, and in fact some locate almost exclusively in Central London because they benefit so greatly from agglomeration economies. Meanwhile, those in London's outer boroughs provide a support function to other businesses in the region as part of a complex network of businesses while also fulfilling the needs of London's many residents.

This chapter considers the spatial nature of London's economy, including its relationship with surrounding regions. It looks at the formation of cities through trade and the growth of cities because of agglomeration. It then describes the location of economic activity across London and considers the interaction of London's economy with its housing market and the transport system that links everything together. Finally, it ends by identifying trends that are likely to affect London's economic geography in coming decades.

The formation of cities from trade

The trade of goods and services described in the previous chapter is the driving force of urbanisation. Cities take shape from trade. Early cities formed where the land provided a natural advantage, either an endowment of resources or natural environment. London's position on the Thames possessed many natural advantages, including a shallow inland harbour with good proximity to the economies of northern Europe.

Some cities, like London, became transfer points from sea to land transport. Waterborne freight has historically been much less costly than other forms of transport and so this mode was preferred. But the final stage of the journey must always be completed on land and so where a harbour exists a marketplace develops where goods produced on land are taken to the harbour to trade with goods arriving from elsewhere. In London's early years the city performed this function well, trading English wool for other goods[1]. In this way one city comes to dominate others in the surrounding area as it now has a strong competitive advantage compared to others. But cities do not only engage in trade they are also centres of the production of manufacturing and service activities that are consumed both locally and traded elsewhere.

Cities benefit from agglomeration economies. The earliest marketplaces bear this out. Once a site of trade is established, it becomes the obvious place for the trade in new goods to be added, since a large number of buyers go there to engage in trade already. When a cluster of merchants emerges, a self-reinforcing cycle begins. And so the marketplace becomes a clearinghouse for goods produced both locally and elsewhere.

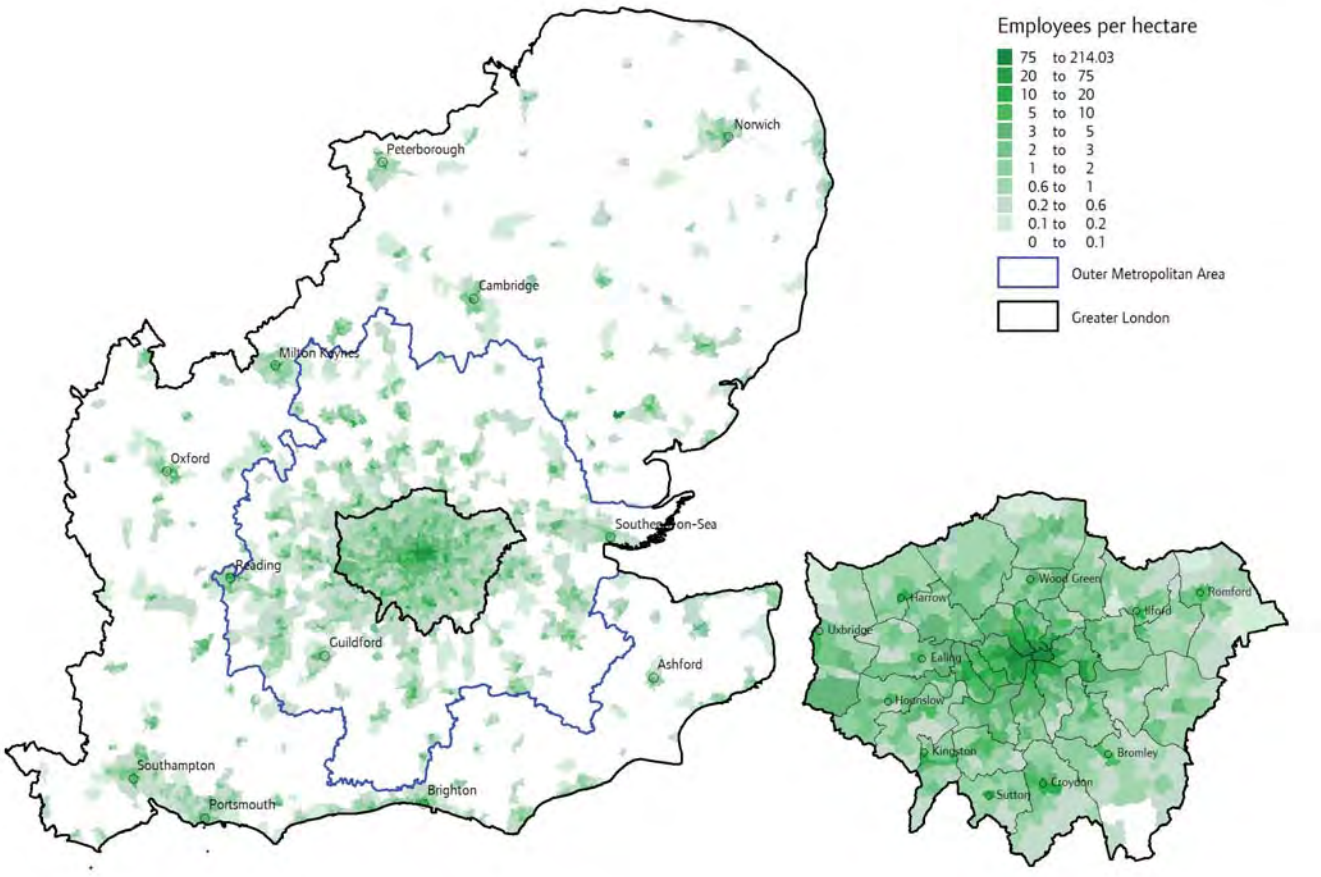
Trade creates larger markets. Larger markets allow for more specialised products to be made. If in one city only a limited market exists for a product it will not be produced. But when trade links many smaller cities, a sufficient market exists to supply the good, though the production itself will probably occur in only one city. In the southeast of England, London acts as this city. As shown in the previous chapter (Table 1.2), in a number of industries, a majority of employment in that industry in Britain is located in London. Cities are able to grow by taking advantage of trade and over time some specialise in the production of particular goods or services, and a network of interlinked cities emerges.

London and its regional economy

London has grown through trade to become the largest city in Britain and indeed, on many measures, Europe. London is the dominant economy within a very large region, the Greater South East. This super region, which includes London, the Southeast and the East of England, produced £559 billion in GVA in 2008, 43.4 per cent of the UK total[2]. Of this, nearly half was produced in London alone.

Economic activity clusters in cities, and the urban centres within the Greater South East contain the vast majority of jobs in the region, despite a relatively dispersed population. Notable centres of employment include Southampton, Reading, Milton Keynes, Norwich, Oxford and Cambridge, many of which are closely linked to London's economy, though none rival London in size.

Figure 2.1: Employment density in 2008 in London, the Outer Metropolitan Area and the Greater South East



Source: Annual Business Inquiry 2008

Within this region is a collection of areas that have especially strong links with London, not only between businesses, but also in labour market terms. This area is commonly known as the Outer Metropolitan Area (OMA) and includes areas directly surrounding Greater London as diverse as Southend-on-Sea, Crawley, and Reading. It is in this area that London's influence is greatest and where, because of labour market linkages, it can be said that the local economy is integrally part of the regional economy.

The discussion of London's economic geography that follows therefore looks beyond the boundary to include the Outer Metropolitan area to understand all the forces that affect London. Figure 2.1 shows the geography described above and the location of jobs within the region. The next section discusses how agglomeration causes cities to grow.

Urban growth from agglomeration

Urban centres, once established, benefit from agglomeration economies. Agglomeration economies are positive externalities that firms benefit from when they locate in large groups. Continuing the example above, this began as merchants concentrated at specific points of trade to take advantage of scale economies. But as the city grows larger, the benefits move beyond simple economies of scale.

There are two forms of agglomeration economies: urbanisation economies, where firms benefit simply from the presence of many other firms in a large economy; and localisation economies, where firms in a particular industry gain from clustering together.

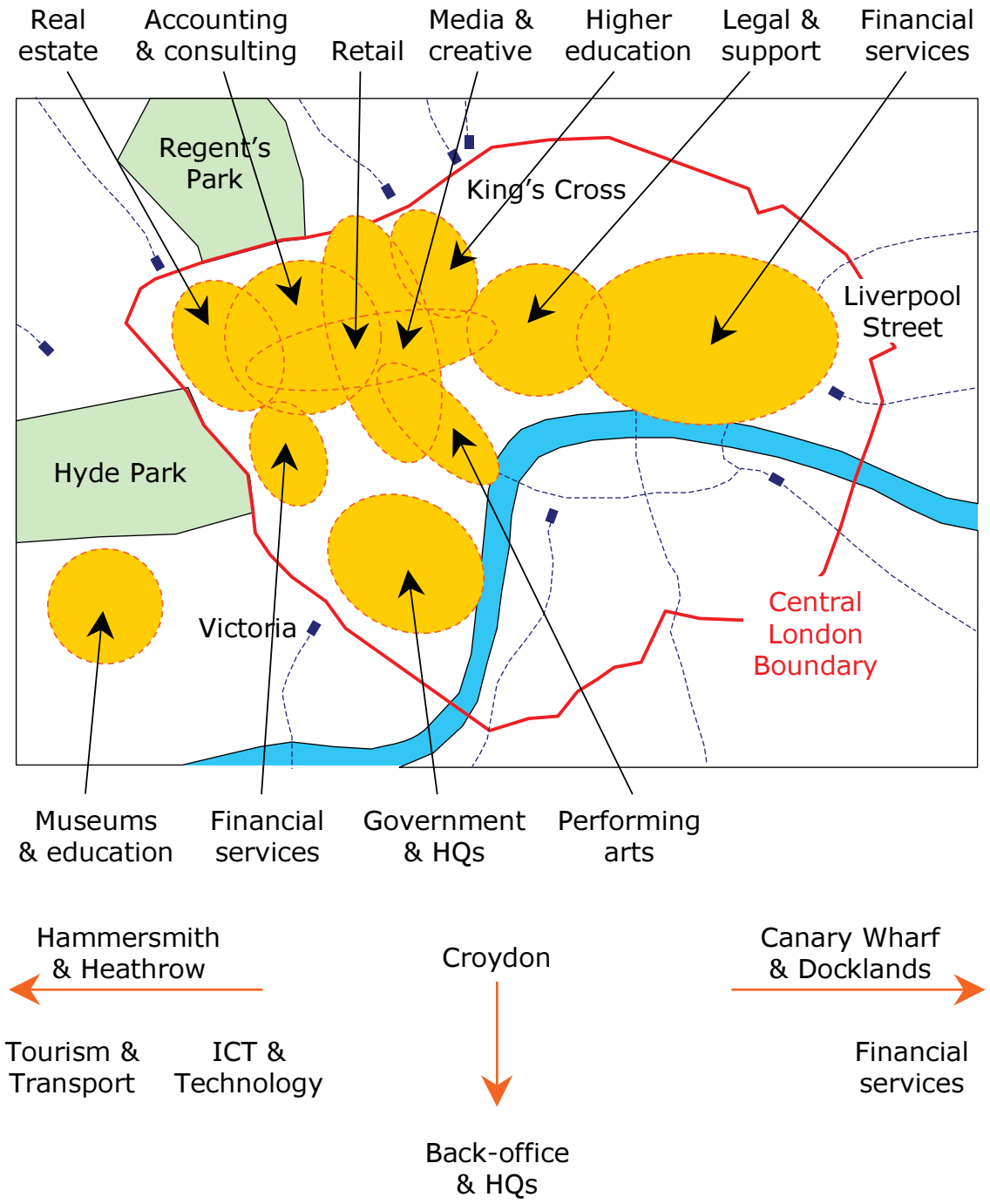
The establishment of a trading post in the example above demonstrates urbanisation economies, where businesses are attracted to large urban centres like London that put them close to a very large number of suppliers and customers. This is primarily an example of economies of scale. In the modern economy, activities like labour recruitment and retailing benefit greatly from this process.

The proximity of a large number of suppliers and customers in an urban area create economies of scale in input and output markets, adding to the benefits of agglomeration. There are very few service activities that are not represented to some extent in London, which means most firms can gain from complementary businesses that bring about economies of scale. The proximity of so many competing businesses leads to more effective competition and puts pressure on all businesses to maximise the efficient use of resources, making them more competitive locally as well as globally.

Localisation economies are more sophisticated and go beyond simple economies of scale, and are derived from shared labour markets and knowledge transfer. In urban economies, this is evident when insurers find benefits in locating together and near to legal services for support on contractual issues, for instance, or when the wealth management arms of banks locate in the same area and share the services of nearby fund management companies. Indeed, it is possible to see that many of London's specialisms are located in distinct parts of Central London, as shown in Figure 2.2.

Businesses in urban centres share a large and often highly skilled pool of labour. The presence of so many businesses pulls in more labour, which makes cities like London an even more attractive place for firms to locate. Agglomeration produces benefits within the labour market because of the number and variety of firms that offer a wide range of employment opportunities. With so many jobs on offer, especially the number of specialist jobs, it is more likely people will find a job that makes the most of their skills.

Figure 2.2: Sector location within Central London



Source: Prime Minister's Strategy Unit, 2004

Knowledge spillovers from other firms, whether in the same industry or in others, occur in large cities. Direct business interactions, fluid labour markets, and close formal and informal networks spread ideas around cities. This helps businesses keep up-to-date with ever-changing markets and technology so they remain competitive.

Together these agglomeration effects support the development of economic activity by providing firms with access to a deep and highly skilled labour force, a range of complementary input and output markets and the benefits of spillover effects such as the rapid transfer of innovation.

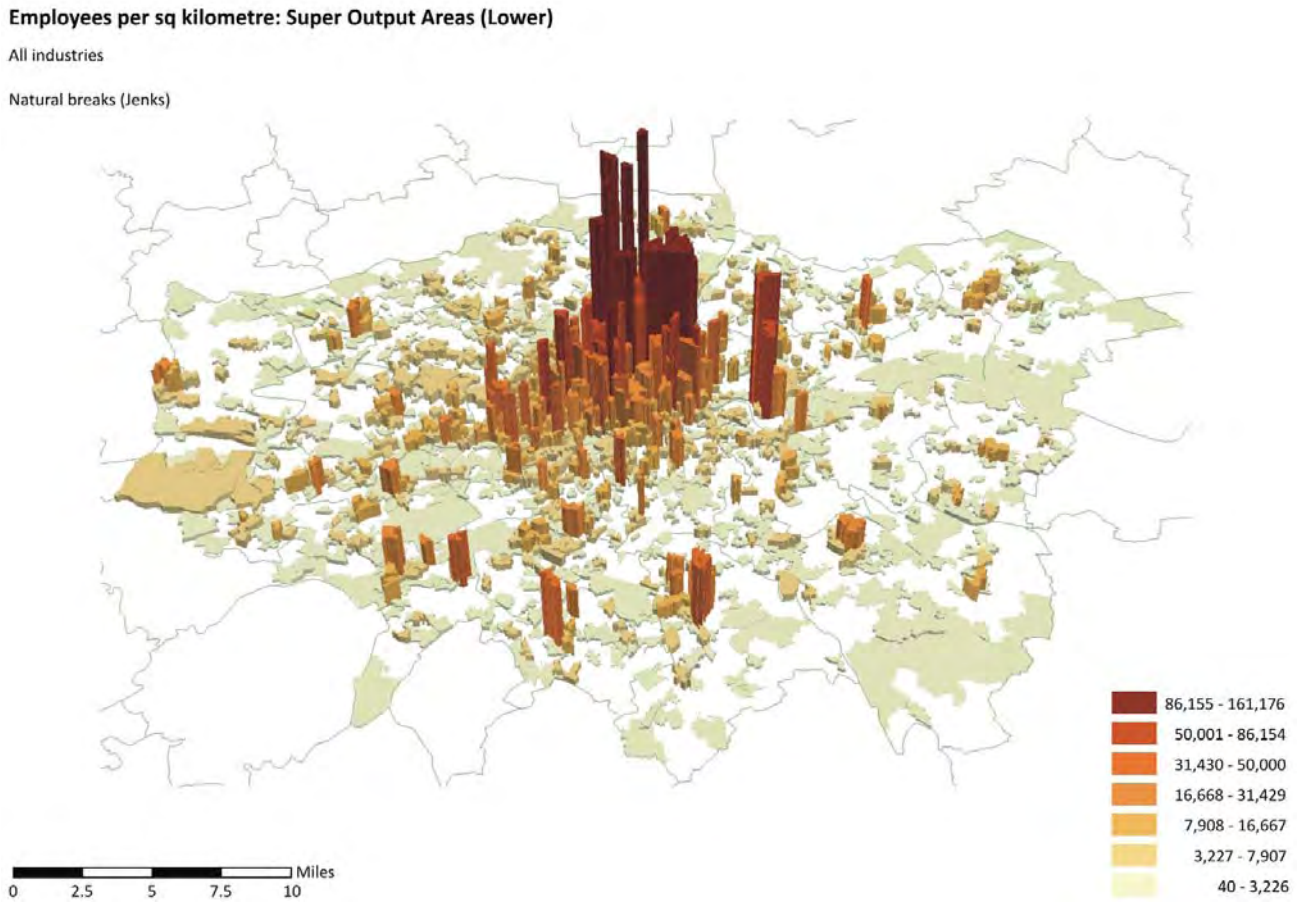
By locating close to one another firms are more productive than when businesses are far from one another. Such benefits have a degree of circular causality, with existing spatial concentration resulting in forces that encourage further spatial concentration[3]. The productivity benefits of high employment density, within

industries, across geography and over time, are found in cities across the world[4]. Smith provides a thorough examination of industrial clusters in London, including co-location of industries in the Greater South East[5]. Industrial clusters outside Central London will be discussed later in this chapter.

London's economic geography

Today's economic geography is the product of more than a century of trade and agglomeration at work. Around one-third of London's jobs are located in Central London, the largest and most productive centre of employment in Britain[6]. As shown in Figure 2.3, employment density is greatest in Central London and relatively high in other parts of Inner London. A number of large employment centres are located in Outer London, including town centres that were historically distinct towns in their own right, such as Uxbridge, Kingston, Croydon and Bromley.

Figure 2.3: Employment density in London



Source: Annual Business Inquiry 2008

London's growth over history has been remarkable. Though originally part of a network of small towns, including many in the Thames Valley, London has grown to consume a large number of neighbours, some of which are now known as Metropolitan Town Centres. Much of the reason for this is the combination of agglomeration benefits, which causes businesses to want to locate in London, and declining transport costs, which allow people to travel further.

A key factor affecting agglomeration economies is distance, so certain areas are favoured by business because they provide better access to input or output markets[7]. When transport infrastructure was rudimentary and costly, this meant businesses could only locate in very specific locations, such as London's central area and the many distinct market towns across the region. This was reinforced by the fact that work and home were physically connected for many merchants.

But the decline in transport costs over time allowed for the separation of work and residence. Clapham developed as one of the world's first suburbs when omnibuses proliferated[8]. Merchants could increasingly afford to travel to work each day and so no longer needed to live above their shops. This began the process through which commercial uses concentrated in the centre and new homes multiplied across the surrounding countryside as the 'commute' to work was born.

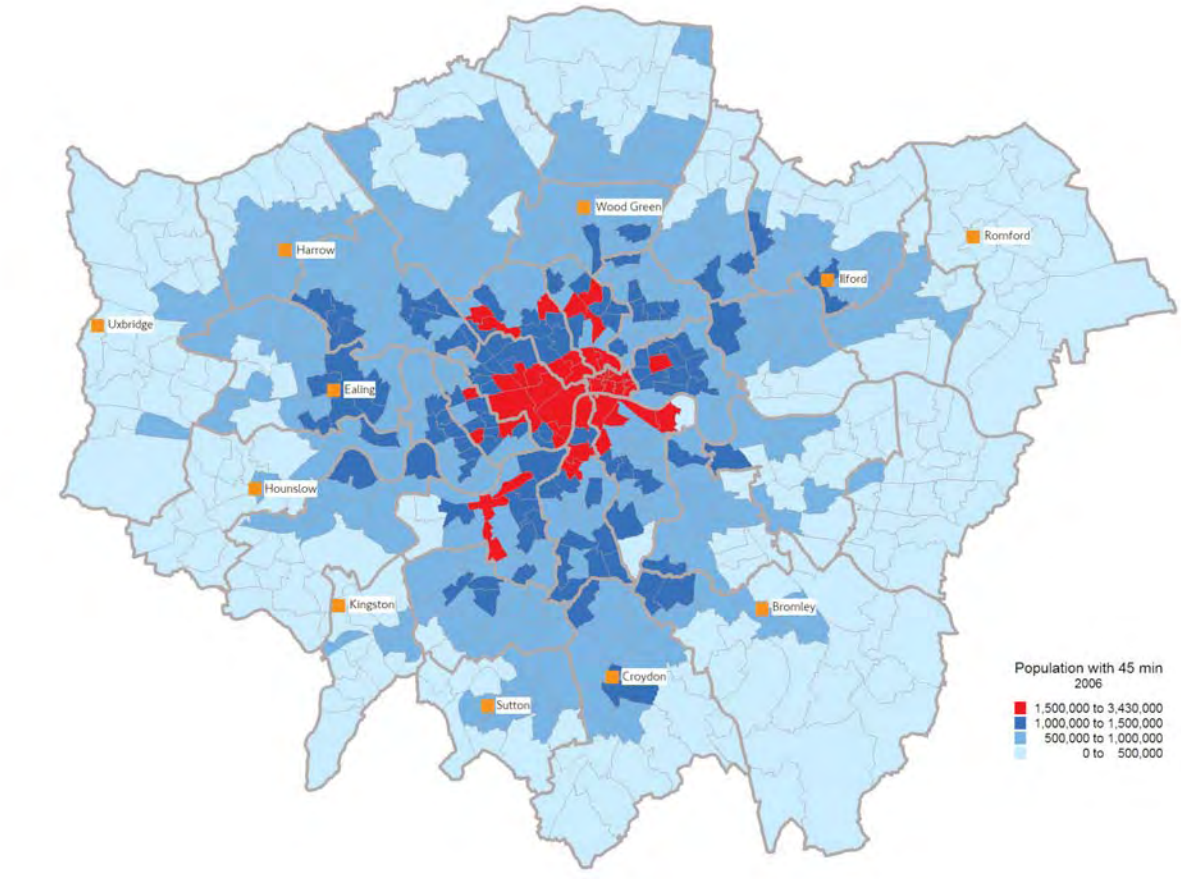
This allowed for a further and beneficial concentration of business activity and created a distinct market for housing land around commercial centres. As a result, the area that is now Outer London transformed from an agricultural region, home to a number of market towns, to a largely suburban area, providing homes for the many people working in the growing city.

As more and more land was made available for housing alongside the construction of London's radial rail lines, the city grew further, eventually swallowing up its smaller neighbours and creating the polycentric urban structure that exists today.

The importance of Central London

Despite the geographic spread of London, Central London remains a prime location for businesses. It lies at the centre of the most populous region in Britain and more than 3 million people can travel by public transport from home to Central London within 45 minutes as shown in Figure 2.4. Accessibility to people and businesses – input and output markets – drops off very rapidly as one moves from the centre and so Central London provides many more advantages to businesses than even relatively proximate districts.

Figure 2.4: Number of residents living within 45 minutes public transport travel time

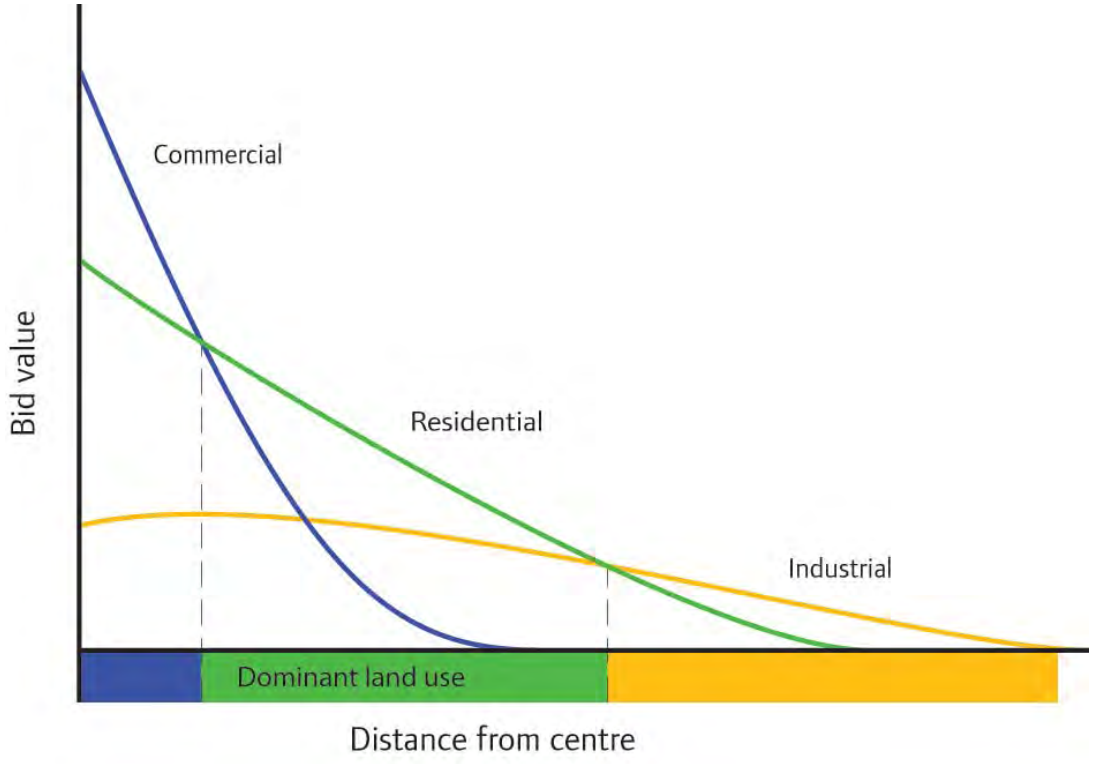


Source: Transport for London, 2009

As a result, there is very high competition for space in Central London, by both businesses seeking shops and offices and people seeking housing. But businesses can very often pay more for land than people seeking land for housing. This is because employment land generates output and the area in which agglomeration benefits are highest is very narrow, as detailed above. And so the highest value businesses outbid others for land in Central London. As in most cities, land prices are highest in the centre and generally decline with distance from the centre, reflecting the appeal of central locations when compared to peripheral ones. Tough competition for limited space drives up land values and acts, along with congestion and other diseconomies of spatial concentration and planning controls, as a check on further concentration[9].

This phenomenon was first identified nearly 200 years ago by the economist Johann von Thünen in his work on agricultural rents, and was applied to cities in 1964 by William Alonso[10]. His model explains the price and demand for real estate in a city and is shown in Figure 2.5. It shows the distribution of land uses that occur in a simplified, competitive real estate environment and is useful in understanding how market forces shape demand for land.

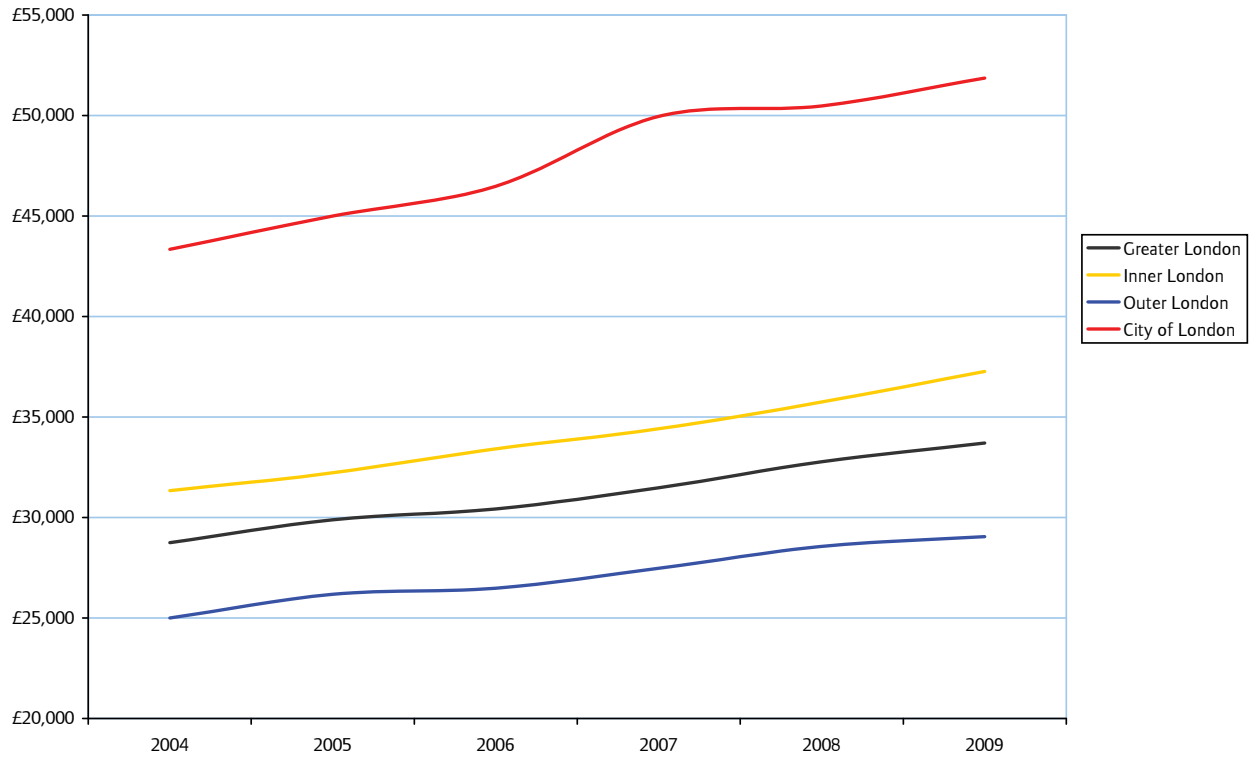
Figure 2.5: The Alonso model of land rents helps understand the distribution of land uses



Source: GLA Economics

Firms that benefit most from agglomeration are most willing and able to pay for offices in Central London and so the most productive jobs are located in the centre[11]. This is reflected in both productivity and wages earned. Figure 2.6 shows the median annual earnings by place of work in London, noting the local authority with the highest median earnings is in the very centre (City of London).

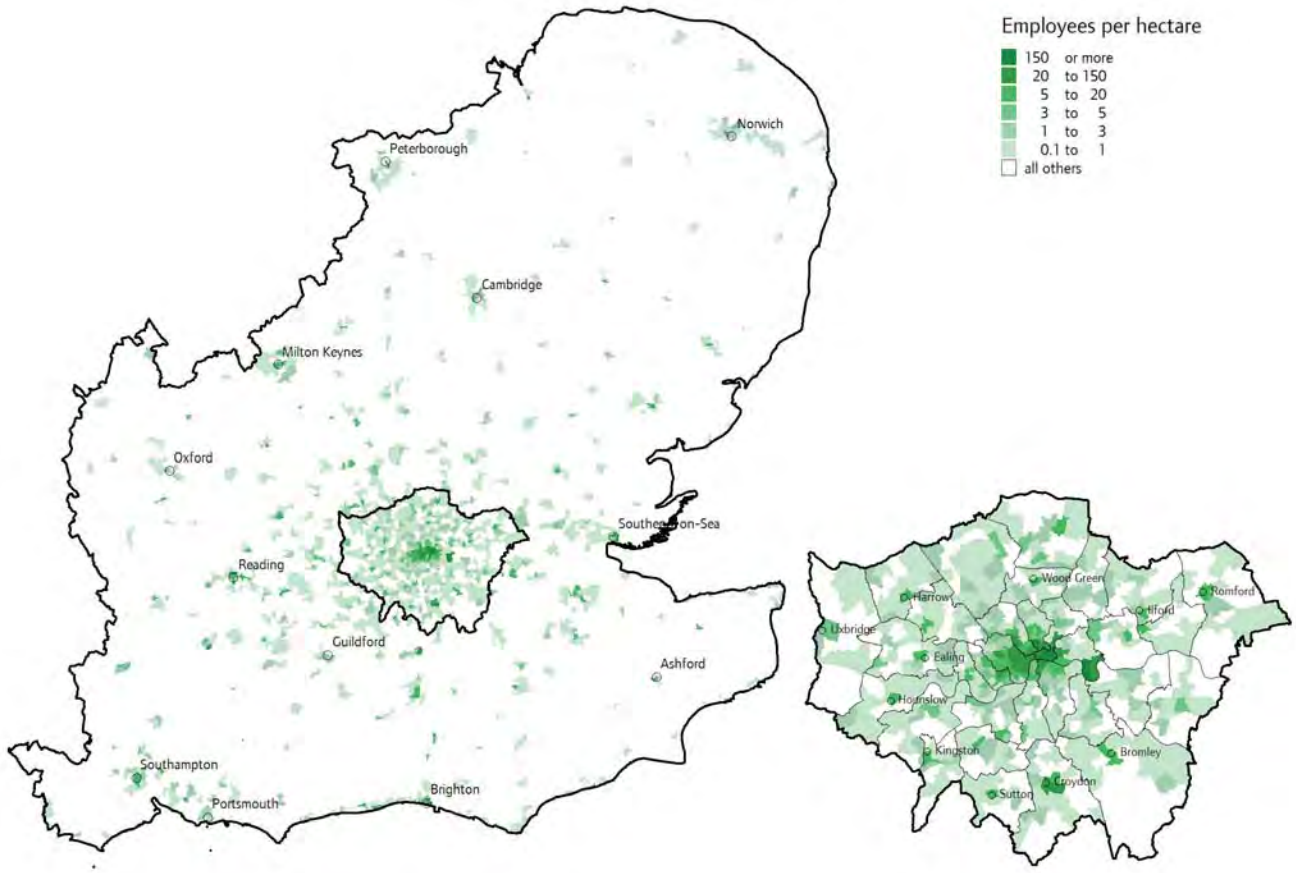
Figure 2.6: Median annual earnings for full-time employees by workplace location (nominal prices)



Source: Annual Survey of Hours and Earnings

London's specialised, globally competitive activities tend to locate in Central London and in fact some locate almost exclusively in Central London because they benefit so greatly from agglomeration economies. These include the financial and business services sectors. Figure 2.7 demonstrates this with the location of financial services in the Greater South East. Within business services, there are notable concentrations in accountancy, legal, management consulting and advertising in Central London as well as the more creative radio and television, publishing and motion pictures industries[12].

Figure 2.7: Location of employment in financial services in the Greater South East, 2008



Source: Annual Business Inquiry 2008

But other businesses, especially those serving local users, are not concentrated in Central London and, indeed, can be spread fairly equally across the region. This is very evident when comparing the distribution of employment in banking to employment in primary and secondary education, as shown in Figure 2.8.

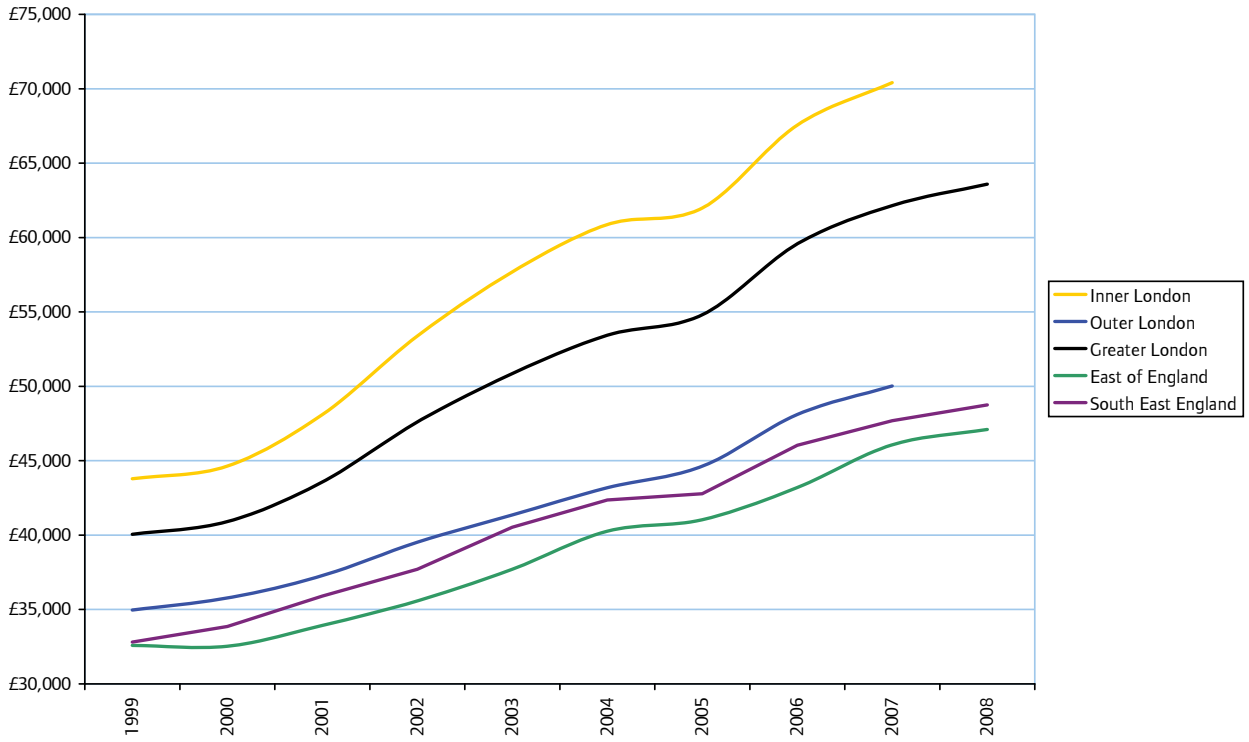
Figure 2.8: Employment density in primary and secondary education (left) and banking (right)[13]

Source: Annual Business Inquiry 2008

The role of Outer London and the Outer Metropolitan Area

Less productive firms cannot compete for space in Central London, given its cost. Where agglomeration benefits do not amount to enough to compensate for higher rents, for instance in activities that require relatively large amounts of land, firms locate elsewhere, often in Outer London or the towns and cities in the surrounding region. This is evident in the relative productivity of employees in different areas. Figure 2.9 shows the relative productivity of employees in London and the Greater South East.

Figure 2.9: Annual output per employee in the Greater South East



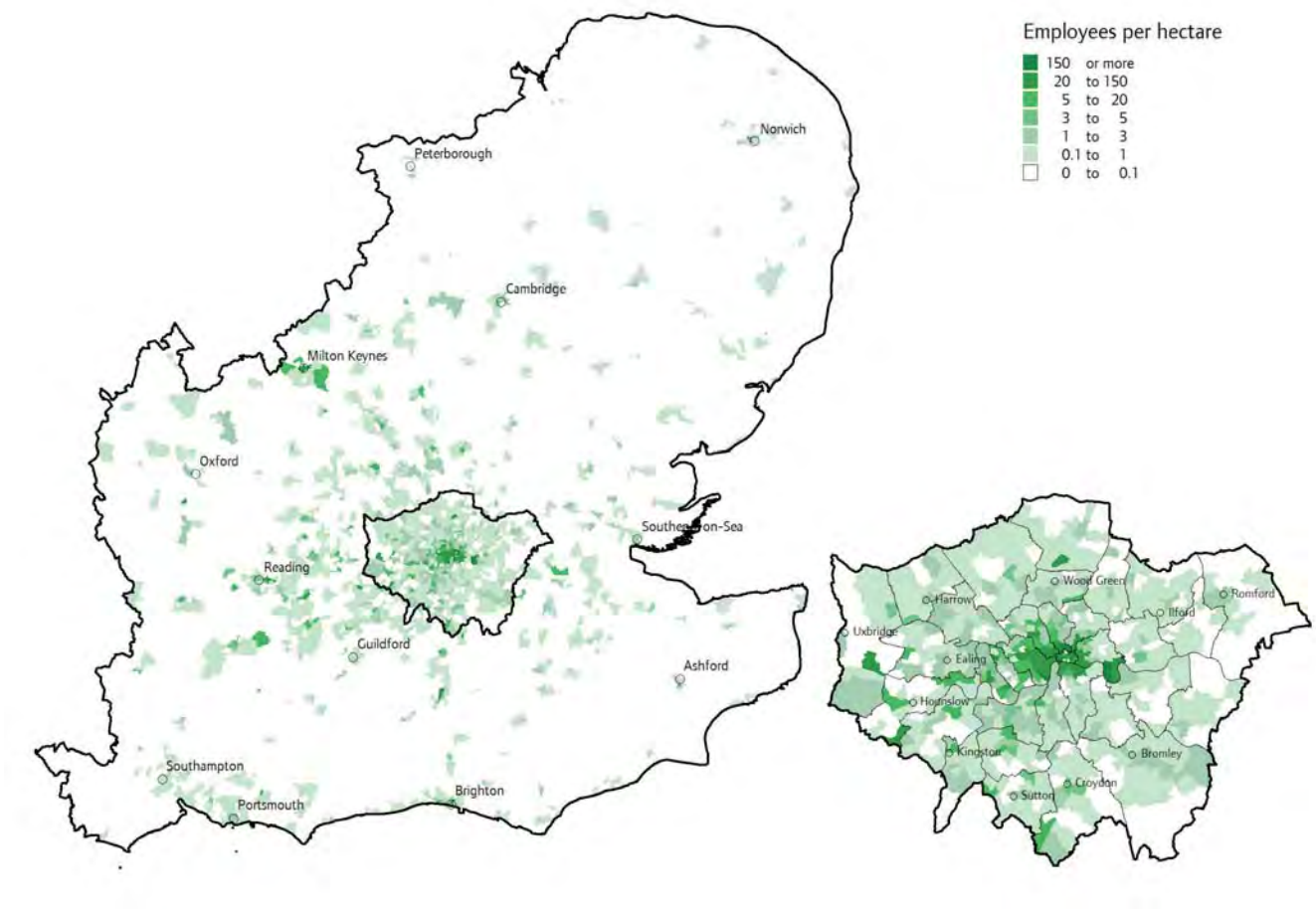
Source: ONS Regional GVA Report, Dec 2009 and Annual Business Inquiry

The most specialised economic activities are largely concentrated within Central London. These include many that engage primarily in work that is exported from the city, either to surrounding cities or around the world. Data from the London Annual Business Survey (LABS) shows that a great proportion of businesses in Inner London sell products outside London. In contrast, those located in Outer London are more likely to sell goods and services within Greater London.

Businesses in Outer London tend to buy goods and services from the rest of the country and overseas but sell more products within London or the Greater South East[14]. This demonstrates the geographical linkages between businesses and the supporting role these businesses play to others in London, serving as a staging point in the movement of goods and services. This illustrates that less productive businesses tend to locate outside Central London but remain as close to their customers as practicable. The types of business that might provide a more supportive role to other businesses include those involved in catering, cleaning, logistics and security. The location of employment in Information Services (data processing) activities, a business support sector, is shown in Figure 2.10.

Economic activity outside Central London tends, on average, to be more widely spread and more supportive of an area's immediate population than in Inner London. To this end, the proportion of jobs associated with serving the population (like retail or health and education, for example) and jobs in what might be referred to as 'support business services' are higher in Outer London than in Inner London, as shown in Figure 2.11.

Figure 2.10: Location of employment in information service activities (data processing), 2008

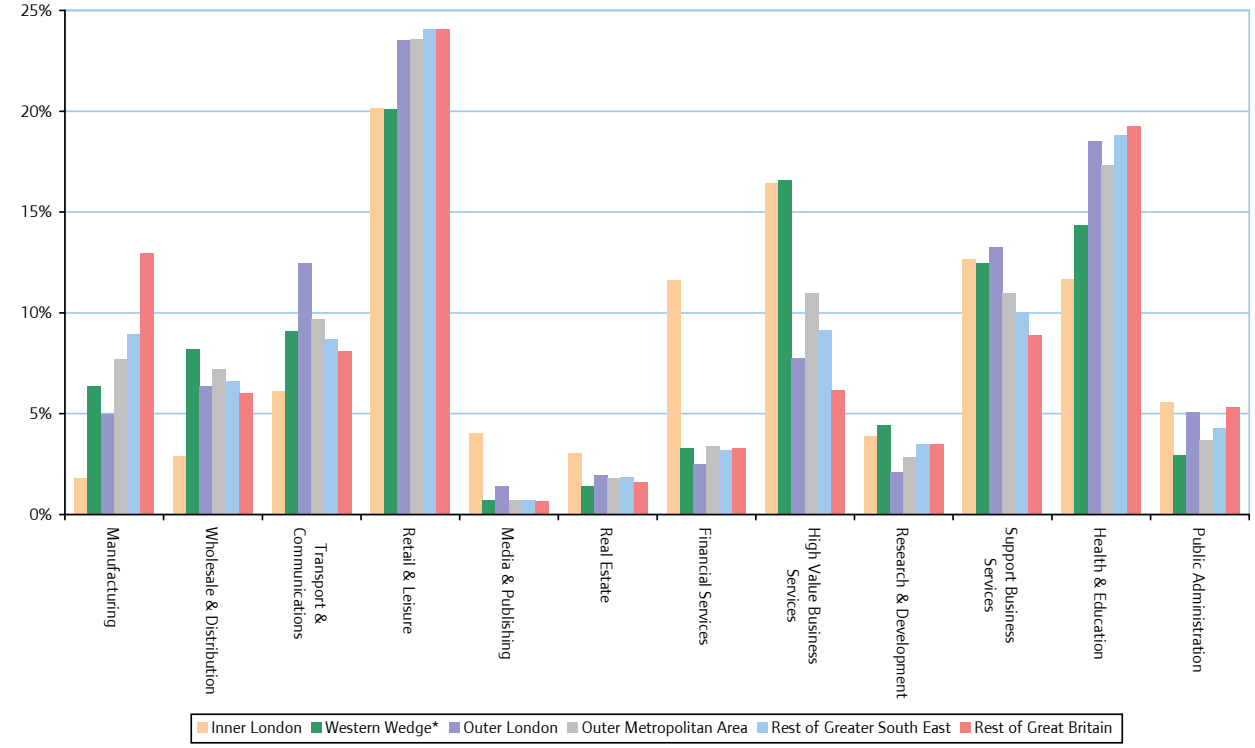


Source: Annual Business Inquiry

Outer London has historically met the demand for housing caused by the vast numbers of businesses located in Central London. The railways and the Underground were extended into what was predominantly open pasture not more than a century ago and today 60 per cent of London's 7.2 million residents live in Outer London. Mainly because of this large population, a significant proportion – 42 per cent – of London's jobs are now located in Outer London as well.

Many of these jobs are serving the local population directly, including teachers, nurses, hairdressers and shopkeepers. As a result, the industrial composition of the economy in the outer boroughs more closely resembles that of the rest of Great Britain than Inner London, as shown in Figure 2.11. Health and education account for 18 per cent of jobs in Outer London and 23 per cent of employment in Outer London is in retail and leisure. This compares to 11 and 20 per cent, respectively, of jobs in Inner London. But this says little about Outer London because it is the highly specialised nature of Central London and its export-focussed economy that is so unusual.

Figure 2.11: Percentage of employees by category and geography, 2008

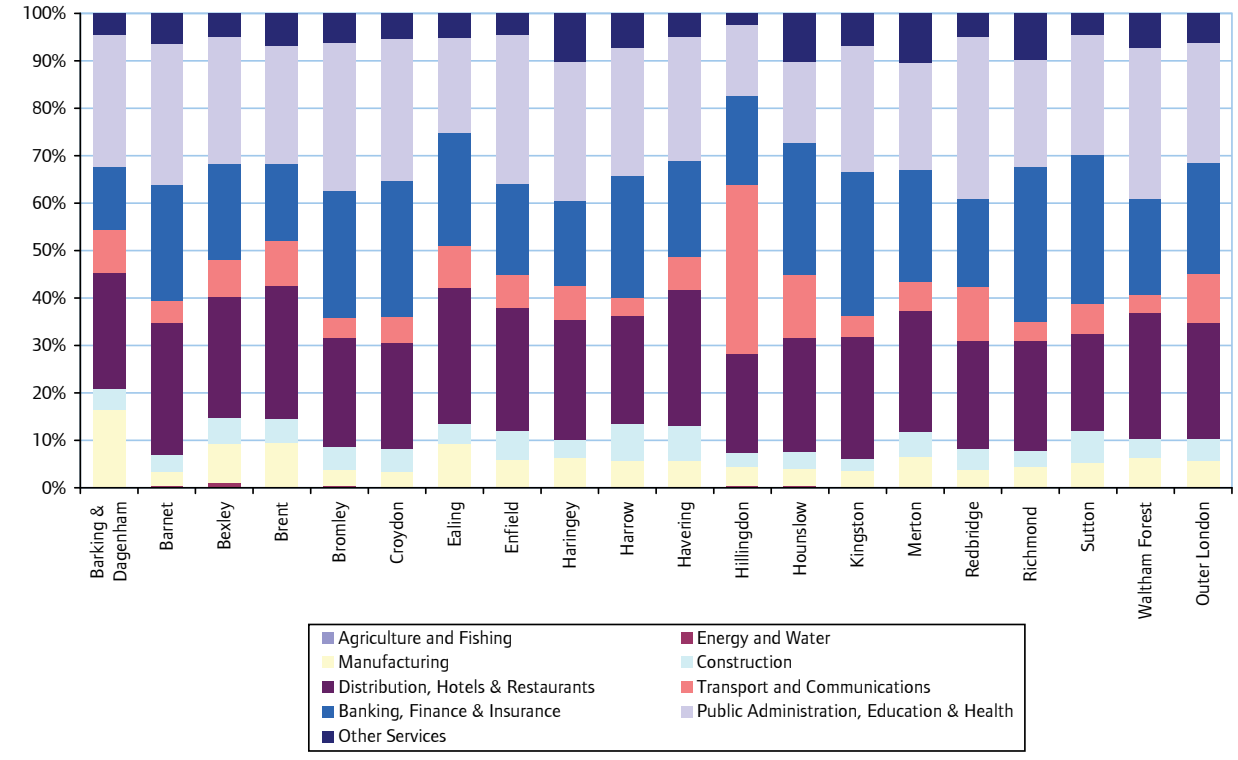


Source: Annual Business Inquiry

** The Western Wedge presented here includes: Wycombe, South Bucks, Bracknell Forest, Reading, Slough, Windsor & Maidenhead, and Wokingham.*

Outer London is a very large and heterogeneous area so macro-level analysis often hides important details. Figure 2.12 shows the break down of employment in the outer boroughs by broad industrial category and makes clear the variation in employment type between the different boroughs, though even this masks very local differences.

Figure 2.12: Employees by broad industrial group in Outer London boroughs



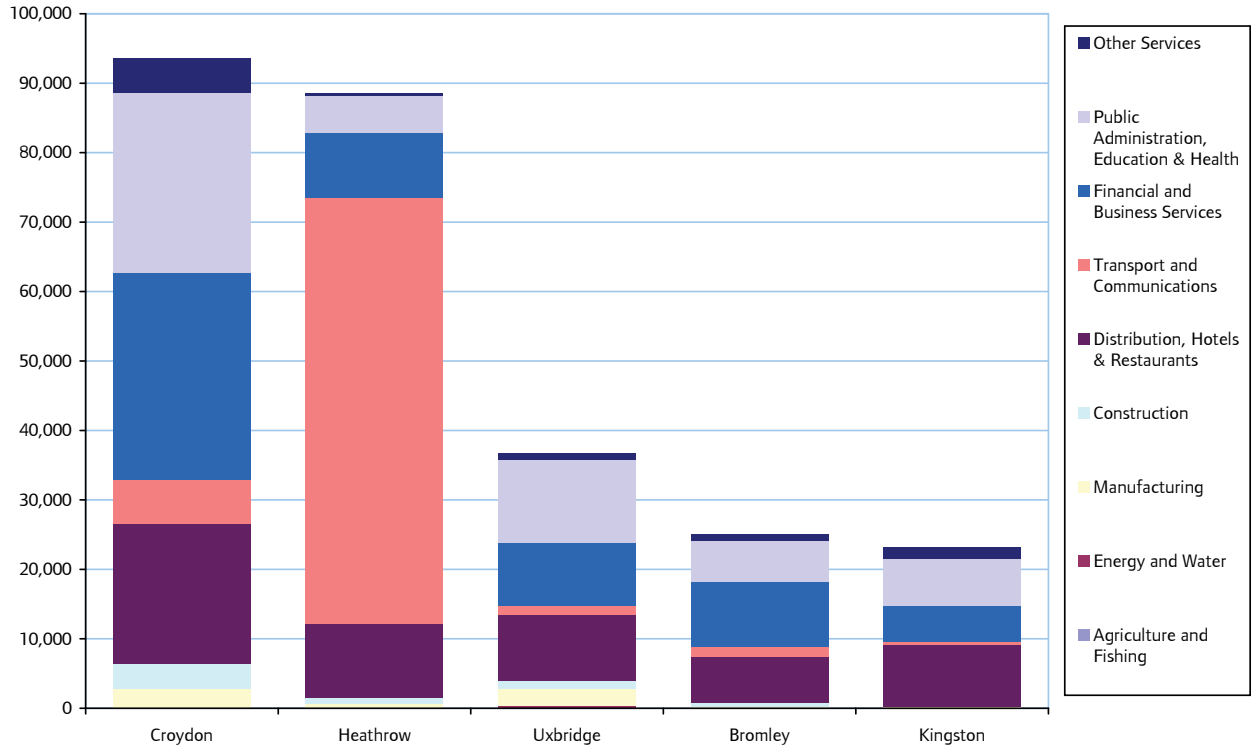
Source: Annual Business Inquiry 2008

Town centres

Employment in Outer London is spread relatively widely across the region (see Figure 2.3) but does tend to cluster in town centres, with generally more people working in the western half. Data from the Annual Business Inquiry shows that the two largest areas of employment in Outer London in absolute terms are Croydon, with 93,700 employees, and at Heathrow, with 88,600 employees. To put this in context, the City of London (which is, in terms of land mass, less than a sixth of the size of Croydon) accounts for over 300,000 employees.

There are 12 Metropolitan Town Centres across London. These centres make up a relatively small proportion of total employment in London but are significant clusters relative to their surroundings. They are often located at key transport nodes and provide better access to markets than other parts of Outer London and are preferable locations for some businesses. The 11 Metropolitan Town Centres in Outer London account for 16 per cent of employment in Outer London. Employment in these centres varies as across Outer London as a whole as demonstrated by the sample in Figure 2.13.

Figure 2.13: Employees in selected Outer London areas by broad industrial group



Source: Annual Business Inquiry 2008

In Croydon, most jobs are split between three broad economic sectors. Financial and business services currently employ around 30,000 people. Public administration, education and health activities provide 26,000 jobs and the broad distribution, hotels and restaurants sector employs a further 20,000.

In Uxbridge, public administration, education and health services account for around 10,500 jobs with education and health services providing around 8,500 of these jobs (split roughly equally between education and health services). The other largest sources of employment in Uxbridge are the distribution, hotels and restaurants sector (just over 9,000 jobs) with retail and wholesale activities accounting for 8,000 of these jobs and financial and business services (just over 8,000 jobs) with business services accounting for 7,000 of these jobs.

In Bromley, financial and business services accounts for 11,000 employees, with around half of these jobs in financial services. Distribution, hotels and restaurants account for almost 6,000 jobs with retail and

wholesale activities employing over 5,000 of these jobs, reflecting Bromley's role as a shopping destination. Public administration, education and health provide just under 6,000 jobs.

In Kingston, distribution, hotels and restaurants account for almost 9,000 jobs with retail and wholesale the largest sector of employment providing around 7,000 of these jobs. Other economic activities in this area of employment are public administration, education and health (almost 7,000 jobs) and financial and business services with around 5,000 jobs (of which business services accounts for 4,000).

Industry clusters

While it is useful to examine the industrial composition of employment in Outer London and the Outer Metropolitan Area, this only compares areas against areas. It is also worth considering the location of employment within specific industries. By examining the location of specific industries it is possible to identify industrial clusters where significant numbers of employees within the industry are located and to understand where economies are heavily focussed on exporting goods and services or local services.

Some industries benefit more than others by being located near to one another. These clusters may then continue to attract the same type of industry. Other industries tend to locate together in areas where there is a natural advantage to them. For example, businesses moving large amounts of goods between cities will locate near a motorway not to be near one another but because of the transport infrastructure.

Data from the Annual Business Inquiry shows that clusters of employees exist in Outer London in a number of industries, particularly in the creative industries. However, the fact that these clusters exist does not in itself show that the area offers locational advantages to firms in each industry. It is possible that the cluster is historic or transient and so the existence of such clusters should not be seen as an indication that these sectors will grow in their present geography. It should also be noted that Central London contains a significant cluster of employment in many industries that dwarfs the number located elsewhere.

Croydon is an important place for insurance activity while a number of notable clusters in manufacturing and warehousing exist elsewhere in Outer London, particularly near transport infrastructure. Manufacturing is most prominent near Heathrow, Park Royal and in the Upper Lea Valley. Warehousing follows a similar pattern, with additional clusters near London City Airport, Croydon and along the Thames in East London.

The Western Wedge

This analysis has so far focussed on Greater London. As mentioned above, London's economy stretches beyond its borders and so some attention must be paid to the significant economic centre located in the Western Wedge[15]. The Western Wedge is an economic corridor with historical specialisation in information technology that stretches from Central London through Heathrow and into the Thames Valley, including towns like Reading and Slough. It is the biggest employment centre within the Outer Metropolitan Area and passes through the portion of London's border that is most porous in terms of economic activity.

This region is significantly affected by Heathrow Airport, located in the middle of the Wedge. The area of the Wedge within London contains much employment integral to the airport's supply chain and logistical network. To the west of Heathrow the Thames Valley has become a key centre of international headquarters[16].

The Western Wedge contains a number of specialist clusters, most of which rely on information and communication technology. The portion of the Wedge in London is home to a number of industrial clusters. These include many 'creative' industries, where redundant manufacturing spaces have been converted into production studies. Industries with significant clusters in West London include:

- Video reproduction
- Publishing
- Motion picture and video production
- Motion picture and video distribution
- Radio and television activities
- Scientific research and development

Data Processing and Computer Manufacturing are also located near Heathrow.

Outside London, there are a number of specialist ICT clusters in Bracknell, High Wycombe, Maidenhead, Reading and Slough. These include computer media reproduction, research and development, software publishing, market research, and IT maintenance[17]. This corridor is broken up by the Green Belt but contains a number of important economic clusters and is the nearest rival to Central London in economic productivity in the country, though certainly still behind[18].

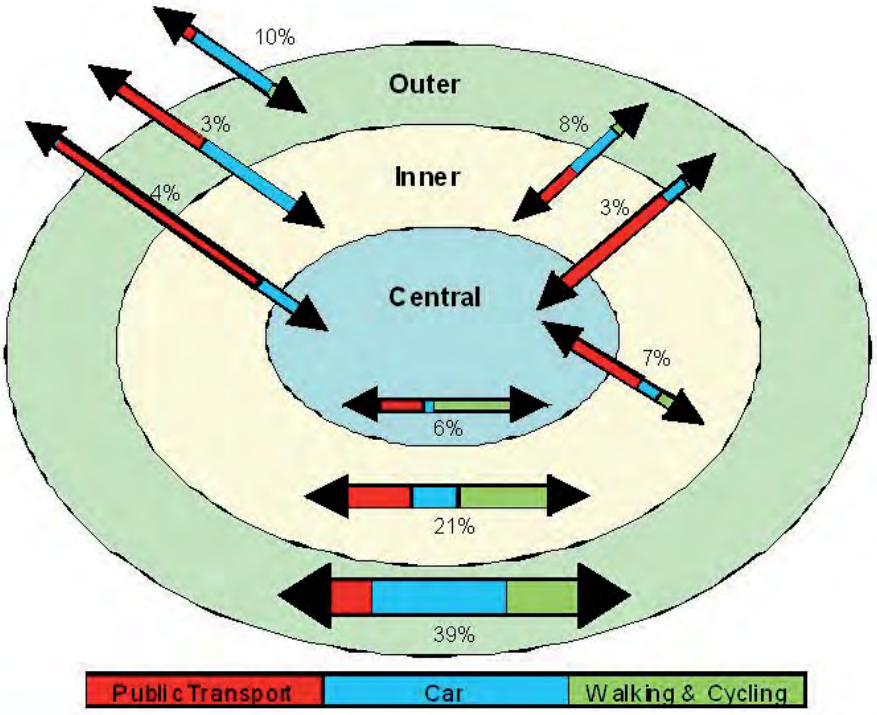
The relationship between areas of housing and economic activity

The location of employment opportunities across London, as well as the transport system that provides access to such employment opportunities, plays an active role in shaping the physical growth of the region. Central London is the largest employment centre and an important destination for London's transport network. The benefits of agglomeration tend to discourage employment from being spread across London and so despite technological advances allowing for remote working, it is likely that more capacity on transport radial services will be needed in the future.

Commuting accounts for only 17 per cent of trips by London residents, who make around three-quarters of the 24 million daily trips in London. However, commuting trips tend to be longer than other trips and also highly concentrated in terms of timing and destination and so test the capacity of London's transport network[19]. Most other trips are associated with engaging with local businesses, either for leisure, education or for shopping. These trips are normally local and are derived from the location of local service activities which, as described above, tend to locate near residences.

Though Central London creates the largest single flow of commuting traffic, this represents only around one third of all commuting trips[20]. The remaining trips are dispersed around the rest of London. London's links with the surrounding regions must also be considered. Each day nearly 800,000 people commute into London, mostly from the OMA and at the same time over 300,000 commute in the opposite direction. Including all trip purposes, more than 17 per cent of daily trips in Greater London cross the Authority's boundary. Figure 2.14 shows the proportion of daily trips and mode used within and between areas of London.

Figure 2.14: Proportion of daily trips and mode used within and between areas of London (LTDS 2005-08 daily average)



Source: Transport for London, 2009

Most trips into Central London are made by public transport. This is because the vast flows of people can be easily and economically transported on London's radial transport network. This allows London to produce the lowest road vehicle emissions per capita and the lowest CO_2 emissions from transport per unit of GVA of all the English regions[21]. In Outer London, more trips are made by car than by public transport. This is because urban density here is lower and so many of the origins and destinations are more dispersed. The more dominant role of the private car for long non-radial trips in Outer London poses a number of social and environmental challenges for London.

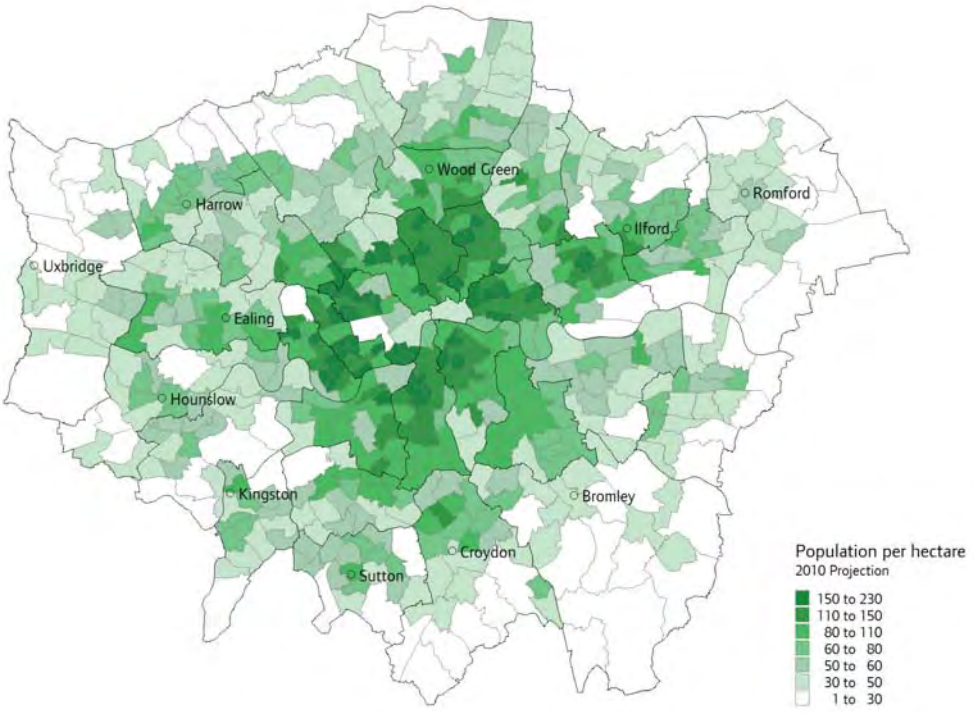
A detailed analysis of key trends and developments relating to travel and transport in Greater London is contained within Transport for London's *Travel in London* report. This report provides a window into the data and intelligence underlying transport planning and operations in London and reflects, tracks and interprets developments in the context of wider trends affecting travel in London.

Housing markets

The transport network influences the location decision of residents who need access to jobs as much as businesses that want to maximise access to markets. As a result, the transport network has an effect on housing markets.

London's residential population is most dense in Inner London, where proximity to employment is highest and historical building patterns, built when transport was costly, are most dense (see Figure 2.15). As with employment, housing density and, in general, house prices drop with distance from the centre.

Figure 2.15: Population density in London

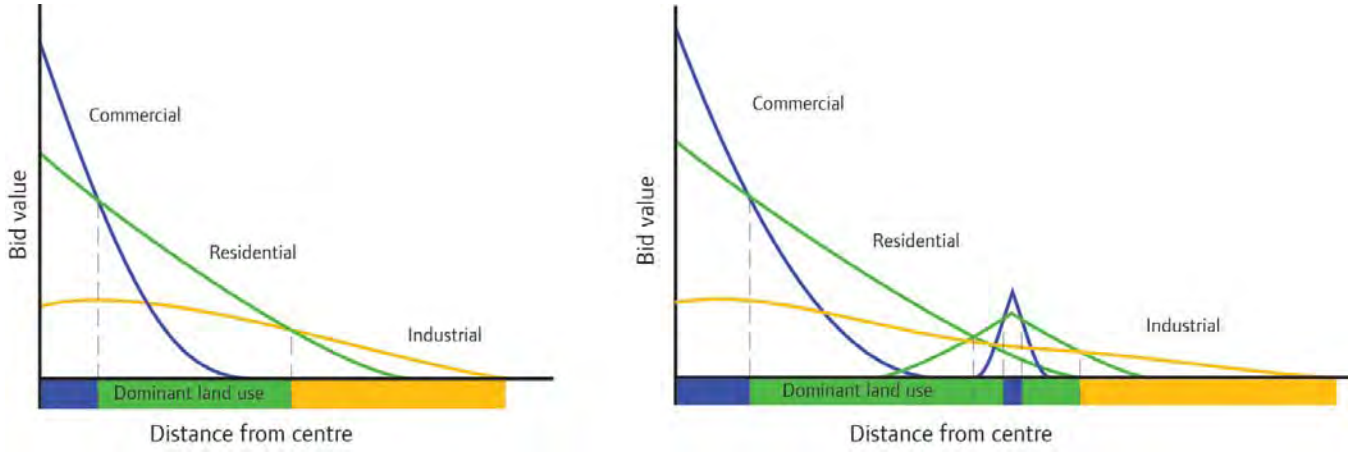


Source: DMAG

Housing and commercial uses compete for land in a similar way to how different types of employment outbid one another for land. Highly productive employment tends to crowd out residential development. Agglomeration economies bring very large benefits to firms and cause great concentrations of employment in very small areas. Since businesses prefer to be clustered together and significant economic benefits derive from such concentration, other land uses like housing tend to locate further out. But residential land, particularly that land inhabited by the most productive employees – who, as has been shown earn considerable salaries – can even crowd out less productive businesses, pushing these businesses further from the centre.

This is evidence of Alonso's bid-rent theory, as explained above. Figure 2.16 shows how the price and use of land differs in a polycentric city like London from a monocentric city. A polycentric city is necessarily larger than a monocentric city and so it is expected rents will be higher and the city geographically larger. Here the relationship between housing markets is made clear. Where the two markets intersect, those desiring homes closest to the primary employment centre are prepared to pay more for space than those seeking to locate near the secondary centre. As a result, people working in peripheral employment centres tend to live further away from that centre than in the area between the peripheral centre and the regional centre.

Figure 2.16: The Alonso model applied to a monocentric and polycentric city



Source: GLA Economics

Very large employment centres, in particular Central London, have very large labour pools that live across the Greater South East. As a result, there is a large reliance on high volume transport networks to accommodate flows of people in and out of Central London. There are relatively more people commuting to Central London from the regions east of London and employment in the Western Wedge draws many London residents[22]. London's polycentric structure means that the housing market surrounding many employment centres tends to interact with others and so some degree of crowding out occurs. This influences residential location decisions and affects travel patterns.

Maintaining and managing the capacity of London's transport network in the face of economic and population growth is a significant challenge to London. This will be examined more closely in Chapter 6 of this document and is illustrated in Transport for London's *Travel in London* report.

Historic trends and the location of future growth

A number of key historic and future trends have and will continue to affect London's economic geography. These are the continuing shift in focus from manufacturing to services, trends in population growth and household formation, and changes in accessibility brought about by new transport investment.

Economic change

As shown in Chapter 1, London's economy has shifted away from manufacturing and heavily into services in recent decades. This is because the nation's competitive advantage in trade has shifted. In 1971, manufacturing accounted for 23 per cent of employment in London but by 2007 this was only 5 per cent. Much of this activity was concentrated in certain parts of London, notably along the Thames in East London and in places like Park Royal in West London. The loss of manufacturing jobs has therefore affected employment growth in these locations.

Employment growth in London has been driven by growth in the financial and business services sectors. As detailed above, these sectors are heavily concentrated in Central London as well as many smaller centres in West London. As a result, employment growth has been stronger in these locations, particularly in Central London.

As the industrial structure continues to change the geography of jobs will shift further. This chapter has outlined a number of reasons why it is likely demand from businesses for locations in Central London will not subside. It has also suggested that employment growth will tend to take place alongside existing employment, perhaps meaning that parts of East London will continue to see limited growth in jobs.

But there are a number of factors affecting the location decisions of businesses, including the availability and cost of space, population change, and accessibility to local and international markets. The latest long-term employment projections through to 2031 and a discussion of historical growth are presented in Chapter 4 of this report.

Population growth

London's population has been growing steadily since the early 1990s. At the same time, the average household size has declined. This trend will continue against growth in population from 7.5 million in 2006 to 8.8 million in 2031 projected, meaning a strong growth in housing units is needed.

Much of the capacity for new dwellings is in East London, where the decline in manufacturing has created an opportunity to reuse land more intensively. Historically, areas in West London have been more populated, which will have affected the location of economic activity across the region. If East London does become home to many new residents, the location of economic activity is likely to change – at the very least because new businesses will set up to service the local population – as a result of the processes explained elsewhere in this chapter and evident in research[23].

Changes to accessibility

A significant amount of investment is being made in new transport infrastructure in London. This will change the relative accessibility of one place in London against another. Significant transport programmes include: upgrades to London Underground; Crossrail; the Thameslink Upgrade; and an extension of the East London Line. All of these projects will reduce journey times across London, in particular to Central London. While this will reinforce the competitive advantage of Central London – a benefit to London's globally active economy as well as local businesses – it will also improve accessibility to other parts of London. This means more places will have access to larger markets, which could tip the balance in favour of growth in these areas.

The economy in London today would be unrecognisable compared to the one that started on the banks of the Thames many hundreds of years ago. But the economic forces that affect growth in London – trade and agglomeration – remain the same. This chapter has explained how these forces work to shape the city and provided a snapshot in time of London's economic geography. But the region's economy is constantly changing, and this chapter has ended by identifying the driving forces that will affect change in the future.

Chapter 3: London's attractiveness to business and people

London has been one of the leading global centres for commerce and trade since the Middle Ages. While the world has changed, the factors that have been important in drawing businesses and people to London have not changed significantly.

For business these factors include, amongst others, London's openness to trade and links to international markets, the skills and diversity of its workforce and its internationally competitive business environment. People are attracted to the city for reasons including the variety of career opportunities, the openness to different cultures, as well as the vast array of leisure and cultural offerings.

In this chapter, an illustration of London's economic success is provided before considering the factors that have been critical in attracting businesses and people to London to facilitate such economic success. These factors include: the quality of the labour force; the nature of the business environment; and access to markets. Following this, a consideration of the types of people attracted to London and the factors that have drawn them to the city is provided. These factors include: high wages and career opportunities; cultural diversity; entertainment offerings; an abundance of green spaces; and educational institutions.

London's success as a location for business and economic activity

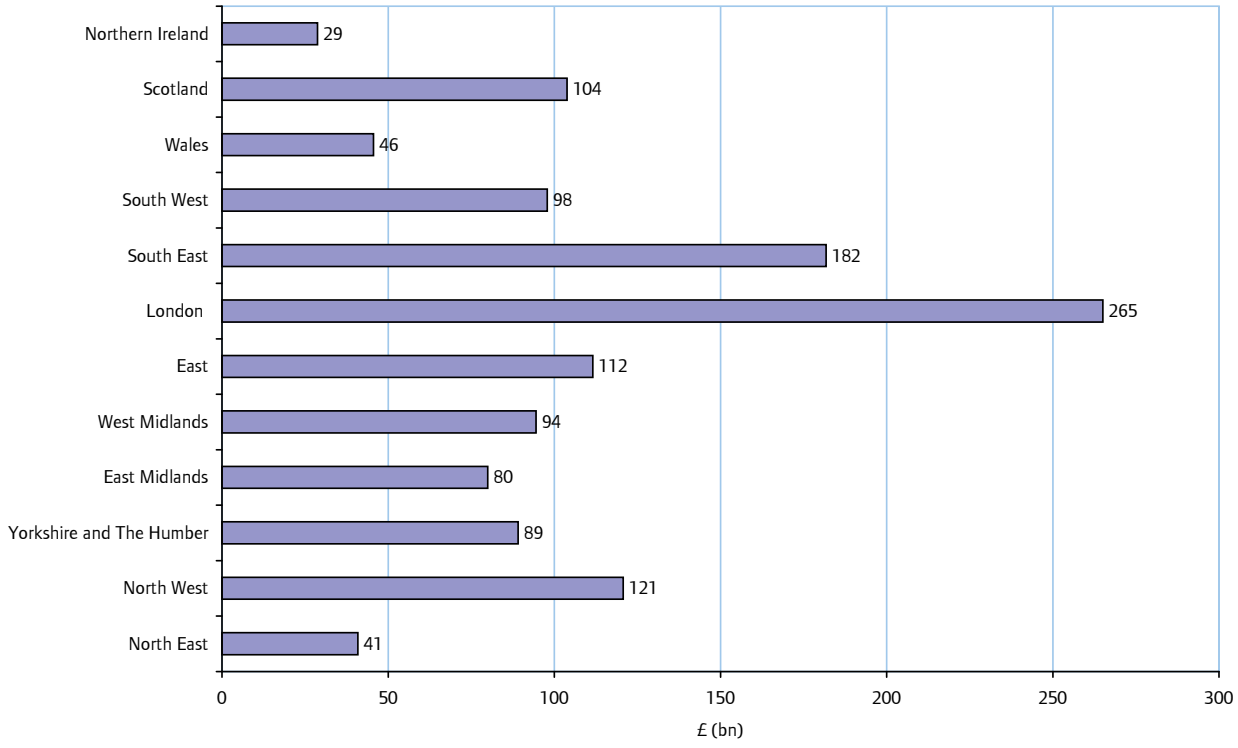
London has long been recognised as a leading world city[1]. Like New York, Paris and Tokyo, London is a centre of power and influence that affects both the national and global economy. This position as a global centre plays an important role in sustaining and attracting businesses and people to the city.

Economic growth

London's total economic activity (Gross Value Added – GVA) is substantially higher than any other UK region accounting for over 21 per cent of total UK GVA[2]. This level of business activity is reflected in both the absolute number of people working in London and their relative productivity levels compared to the rest of the UK.

GVA on a workplace basis measures the total economic value added produced in a region. This includes value added produced by those who do not actually live in the region, which for London is significant due to commuting. In 2008 London's GVA on a workplace basis was over £265 billion[3] (see Figure 3.1).

Figure 3.1: Workplace GVA in current basic prices: by region, 2008 (provisional)



Source: Office for National Statistics (December 2009)

Appendix 2C further illustrates London's historical importance in generating economic activity in the UK.

When looking at the size of economies, London ranks highly when compared to other European countries as shown in Table 3.1[4]. Using purchasing power parities[5] to measure the size of European economies, London moves from being ranked 10th in 1995 to 9th in 2007.

Table 3.1: Rankings by size of economy (European economies, Purchasing Power Parities, 1995-2007)

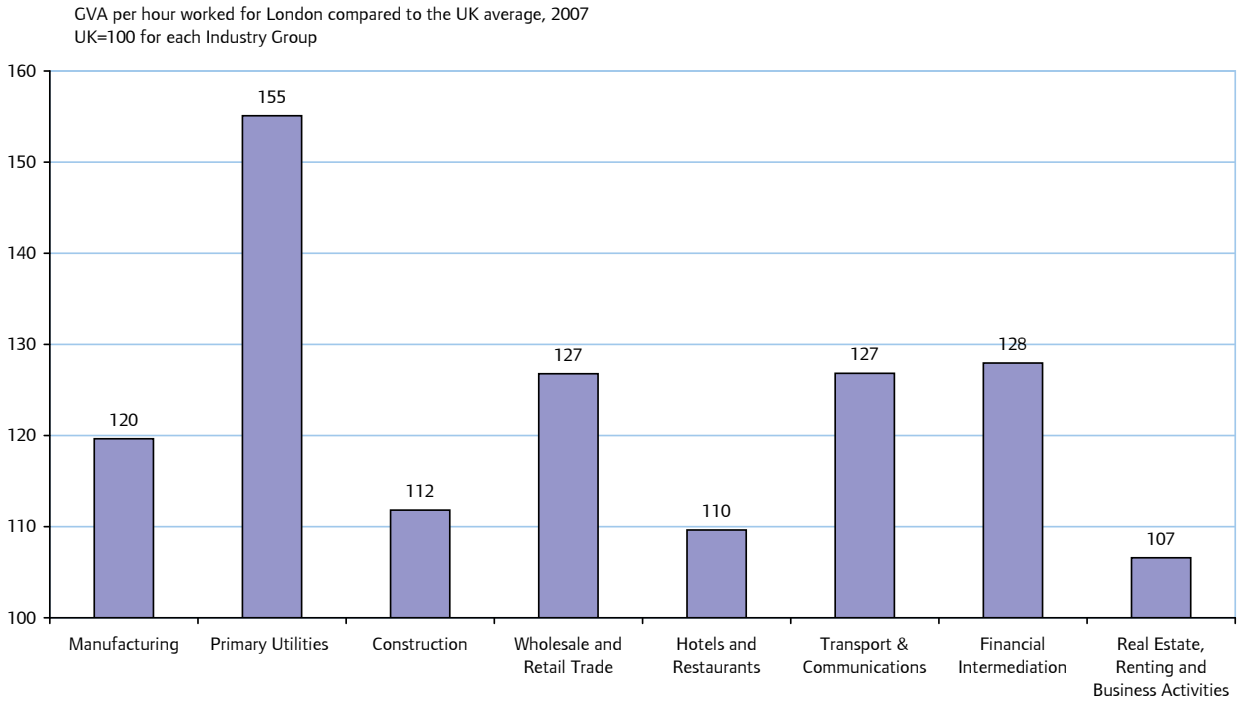
Ranking	Size of economy (output)	
	1995	2007
1	Germany	Germany
2	France	UK
3	Italy	France
4	UK	Italy
5	Spain	Spain
6	Netherlands	Turkey
7	Turkey	Netherlands
8	Poland	Poland
9	Belgium	**London**
10	**London**	Belgium
11	Sweden	Sweden
12	Switzerland	Switzerland
13	Austria	Greece
14	Greece	Austria
15	Czech Republic	(Romania)
16	Portugal	Norway
17	Denmark	Czech Republic
18	Norway	Portugal
19	Finland	Denmark
20	Hungary	Ireland

Source: GLA Economics based on Eurostat data

London's productivity

London's highly skilled labour force contributes to London being 32.7% more productive than the UK as a whole[6]. As shown in Figure 3.2, GVA per hour worked in London is well above the UK level across almost all sectors of the economy.

Figure 3.2: London's productivity in comparison to the UK average, 2007

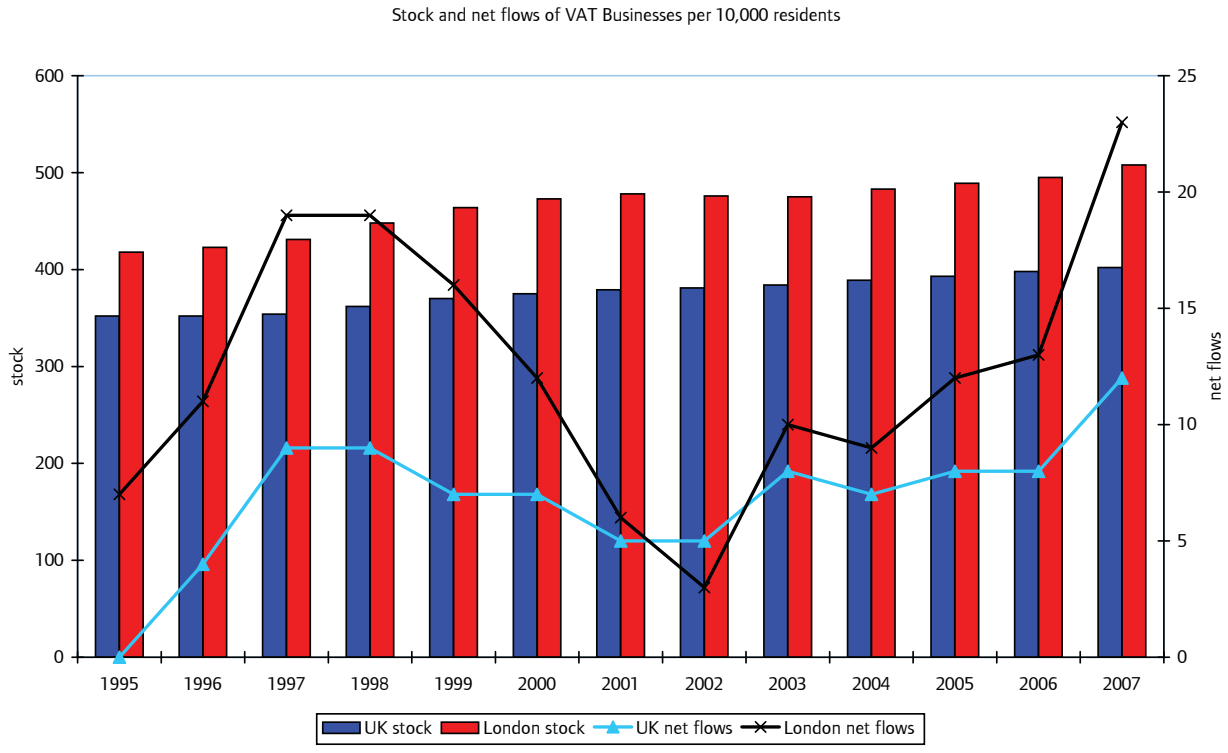


Source: Regional Accounts and Employee Jobs (ONS Crown Copyright)

Business start-ups

Another practical means of assessing how attractive London is as a place to do business is the rate at which businesses start-up. When London is compared to the UK on the basis of resident population, London supports more businesses per head of population. The steady growth in London's stock of businesses would suggest that there are benefits to establishing as a business in London.

Figure 3.3: Business start-ups in London and the UK



Source: BERR (2008)

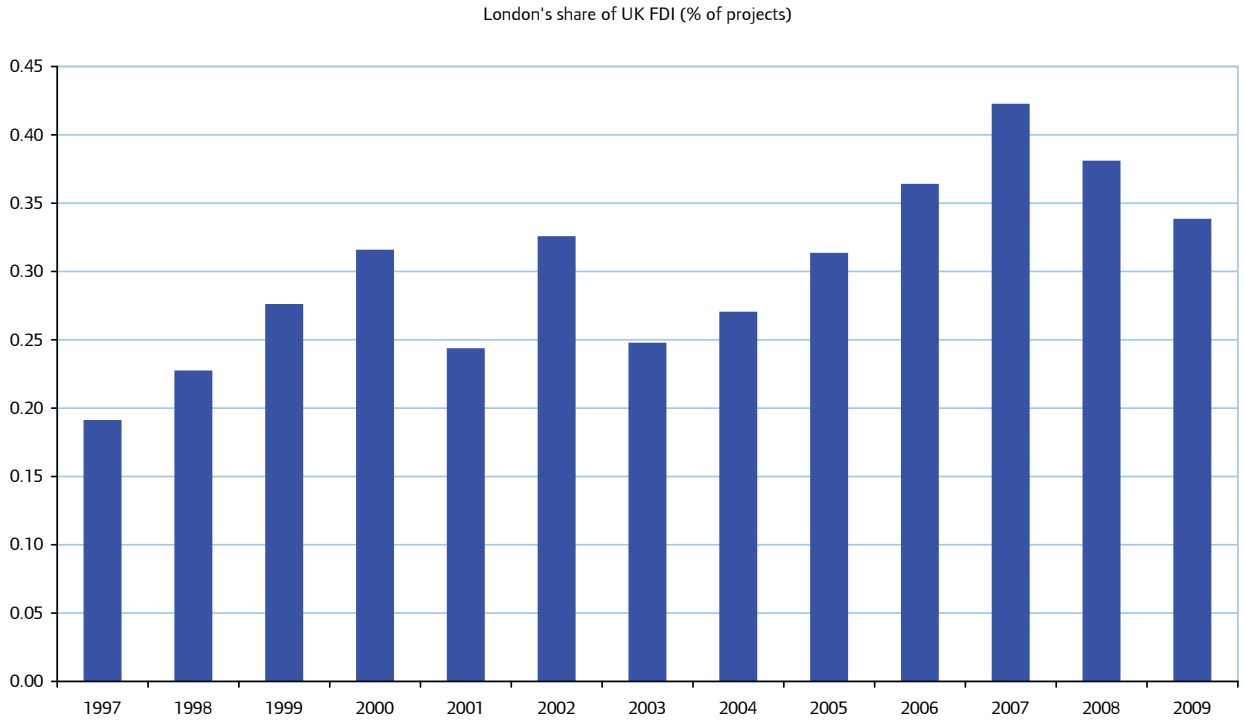
Foreign Direct Investment

London's attractiveness as a place to invest is illustrated and further supported by the stock and flows of foreign direct investment (FDI) the UK receives, much of which is invested in London. This type of investment can both create new jobs and improve the productivity of domestic firms[7]. The UK has maintained its share of both world and EU 15 FDI stocks and flows despite the increased competition for globally mobile capital[8]. Both the stock and flows of FDI into the UK has increased significantly since 1980. However a decrease was observed in 2008 and 2009 due to the global recession (see Figure 3.4).

A survey[9] by Ernst & Young found that the UK retained its position as the most attractive destination for inward investment in Europe in 2008 for the seventh year in a row.

Data from the European Investment Monitor[10] provides some insights regarding London's role in attracting Foreign Direct Investment to the UK. London's share of all UK FDI projects between 1999 and 2009 averaged 33 per cent over that period.

Figure 3.4: Inward Foreign Direct Investment into the UK



Source: EY, 2009

Survey of cities

Various studies and surveys find that London is a leading global centre. In 2008, the GaWC (Globalisation and World Cities)[11] found that London was the leading global city, closely followed by New York, based primarily on an international comparison of the presence of 'global' advanced producer services firms (such as financial institutions, accountancy, legal and advertising firms). Other surveys such as the Global Financial Centres Index[12] consistently ranks London as one of the two leading financial centres in the world (the other being New York), while Cushman and Wakefield[13] consistently ranks London as the most attractive city in Europe in which to locate a business (a summary of international comparisons is provided in Appendix 2C)[14].

Factors attracting businesses to London

As noted in Chapter 2 London is a successful place to do business due to the agglomeration benefits it brings namely the advantages in accessing qualified labour, access to markets, its external transport links

and internal transport system. The evidence provided in this Chapter illustrates London's ability to rank highly as a successful global economy by means of its attractiveness to business and people.

The Cushman and Wakefield[15] survey provides a clear summary of the factors that business leaders state as driving their decisions about business location. These factors are set out in Table 3.2 which suggests that London is ranked highly in those factors that businesses believe to be most important, namely:

- Availability of high quality staff;
- A favourable business environment (taxes and regulation);
- Access to markets; and,
- Internal and external transport links.

Table 3.2: Attractiveness of London to business

	2009	2008	2007	2006	2005	2009 Leader
Availability of qualified staff	1	1	1	1	1	London
Easy access to markets	1	1	1	1	1	London
Quality of telecommunications	1	1	1	1	1	London
External transport links	1	1	1	1	1	London
Cost of staff	28	29	25	16	22	Warsaw
Climate for doing business	4	5	2	5	6	Dublin
Language spoken	1	1	1	1	1	London
Office space - value for money	23	24	18	29	24	Leeds
Internal transport	1	1	1	1	2	London
Availability of office space	2	5	2	1	3	Berlin
Quality of life	11	14	11	7	13	Barcelona
Freedom from pollution	29	27	29	26	27	Oslo

Source: European Cities Monitor, Cushman & Wakefield (2005-2009)

London has also been found to provide a competitive property offer for financial and business related services. A report by CBRE found that the City of London and Canary Wharf are competitive with other leading financial centres around the world as a location for business[16].

A review of London as a global business centre[17] found that a number of factors led to London being a world leading financial services centre, a dominant service cluster and a centre for global and European HQs. These included advantages such as:

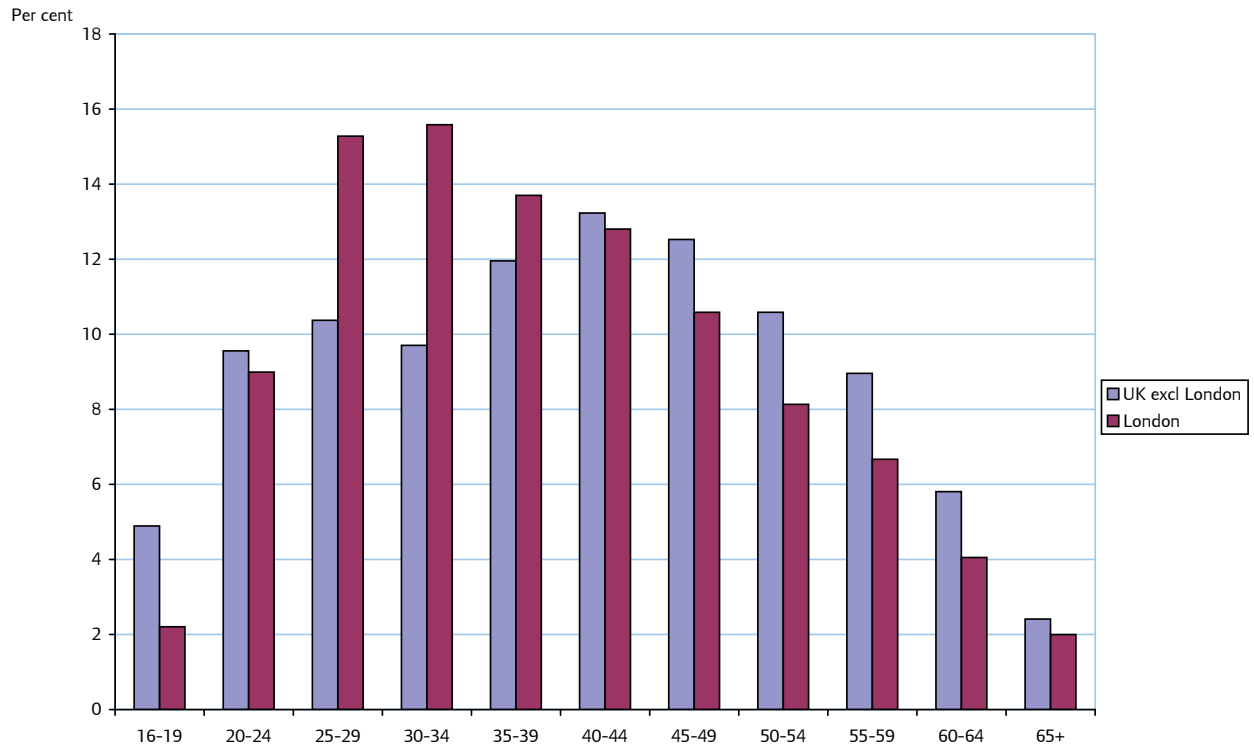
- Time zone;
- Pre-eminence of the English language;
- Increasingly widespread use of English law;
- UK's status as a trading nation and historic strengths of the British empire;
- London's position as the UK's main port and capital;
- Historically acceptable tax regime;
- Open economy in terms of capital and immigration;
- De-regulation, particularly around the financial sector;
- Removal of Foreign Exchange controls (1979);
- The Big Bang (1986); and
- The relaxation of planning controls in Docklands leading to the emergence of Canary Wharf (1980s and 1990s).

Availability of highly skilled staff

Many international comparisons rank London as either first or in the top handful of locations for its skilled labour force. Compared to the rest of the UK, London's workforce is younger, more highly skilled and more productive.

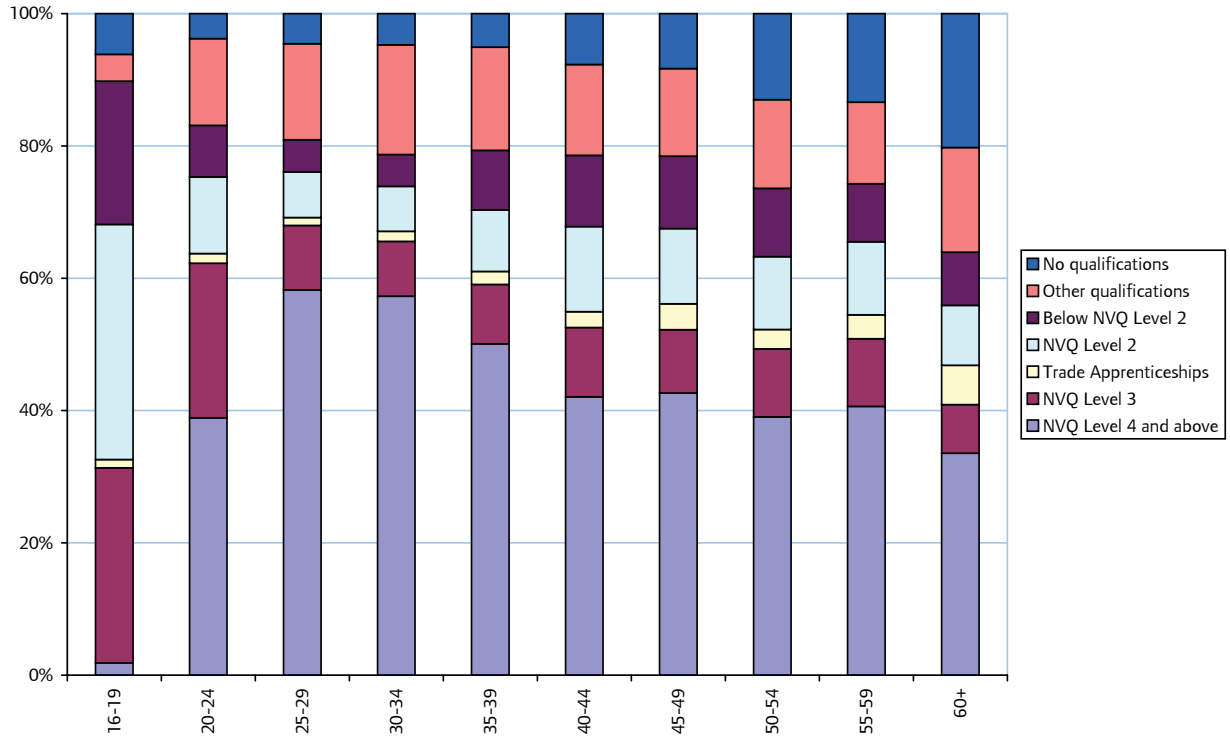
Figure 3.5 shows that when compared to the rest of the UK, London has a significantly higher proportion of its employed residential population aged between 25 and 39 than the rest of the UK. A high proportion of these London residents hold qualifications equivalent to NVQ level 4 or higher (i.e. degree level or higher). Indeed, Figure 3.6 shows that well over 50 per cent of 25-34 year olds in employment are qualified to degree level or higher.

Figure 3.5: Age profile of 16+ residents in employment, 2008



Source: APS 2008 (ONS Crown copyright)

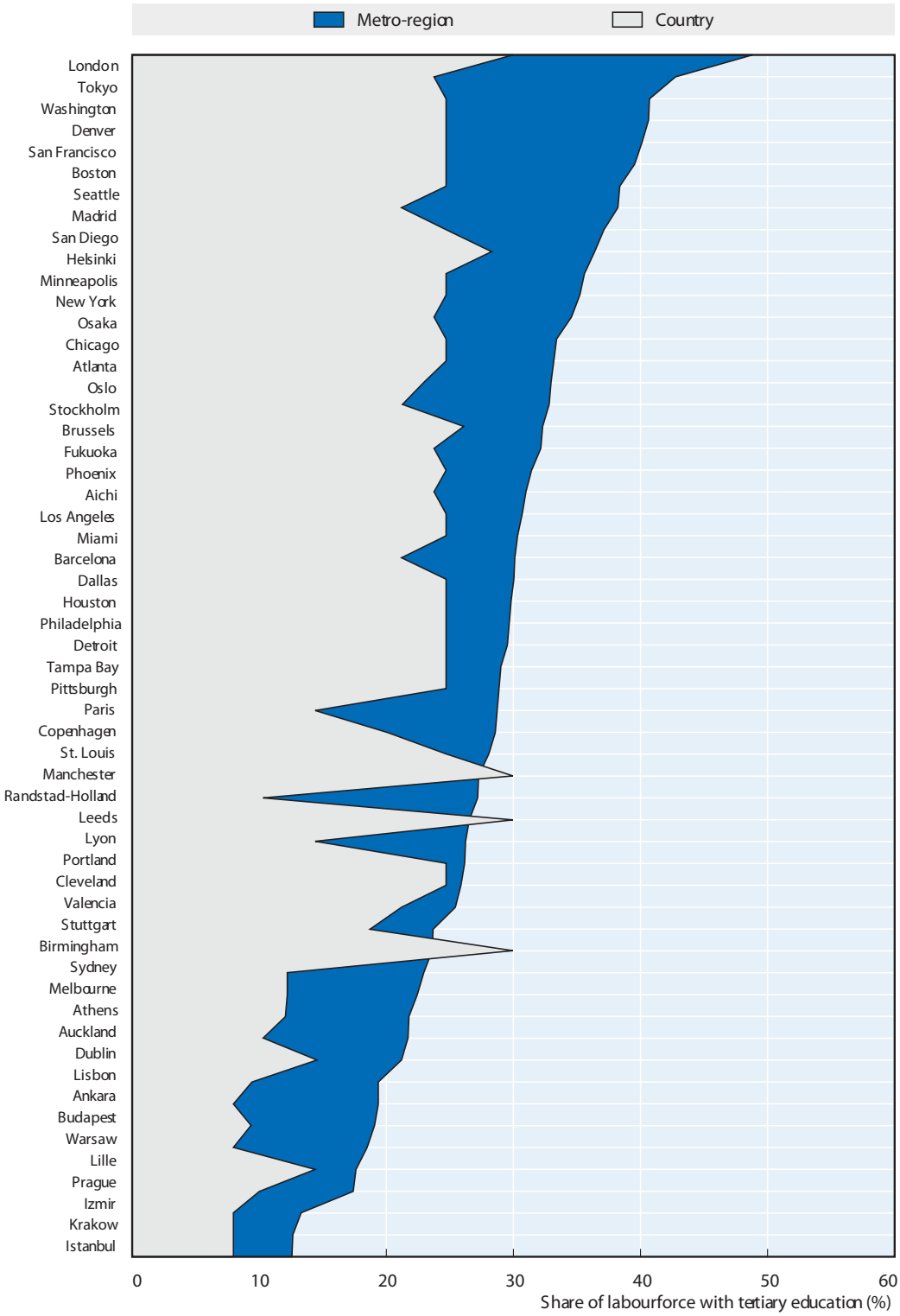
Figure 3.6: London residents 16+ in employment by qualification and age, 2008



Source: APS 2008 (ONS Crown copyright)

The skill level of London's working age residential population is also high when compared to other international cities. As shown in Figure 3.7 the OCED[18] estimates that the percentage of London's working age population holding tertiary qualifications is greater than any other global city. It shows that whilst the UK has about 30 per cent of its working population having tertiary qualifications the figure is nearly 50 per cent in London.

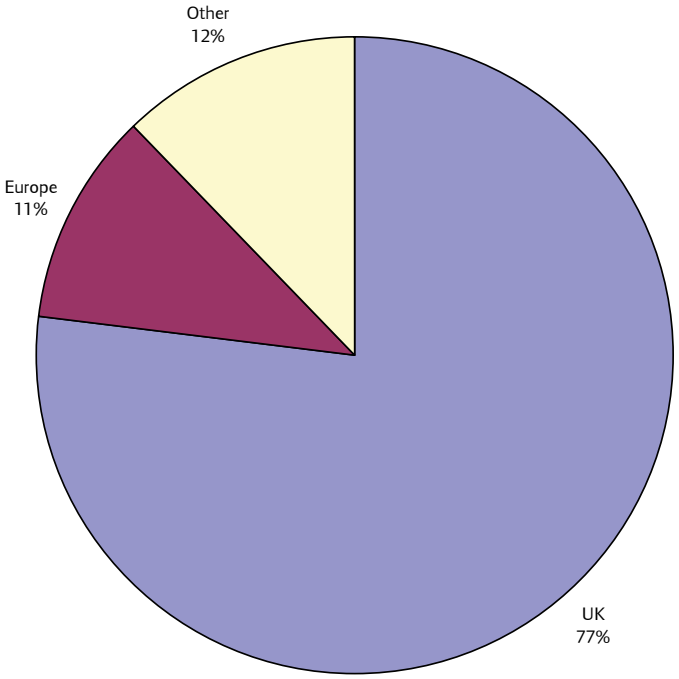
Figure 3.7: Per cent of the working population with tertiary education (urban areas and national averages), 2006



Source: OECD, 2006

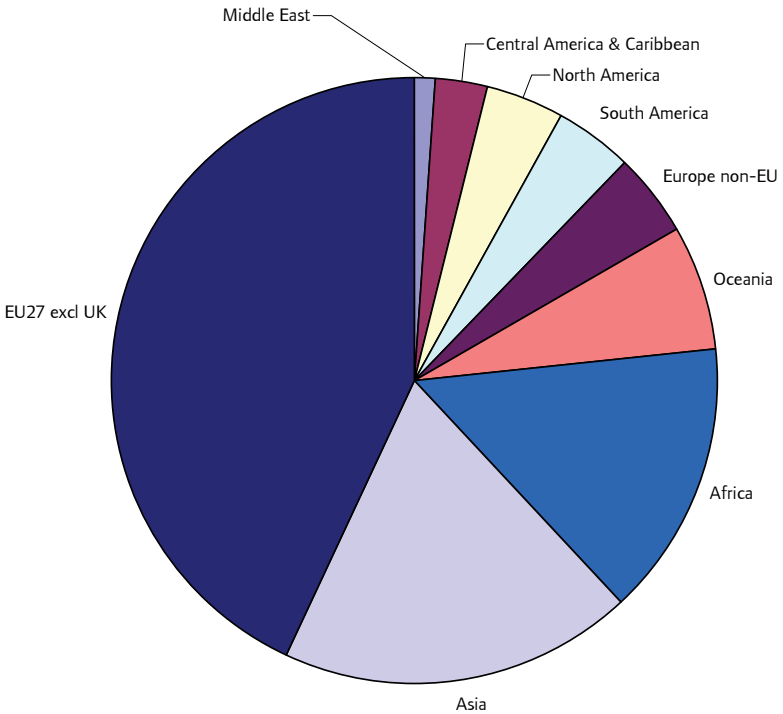
International migrants make up a significant proportion of London's workforce. Figure 3.8 shows that approximately 23 per cent of those employed in London are non-UK nationals. Figure 3.9 shows that 47 per cent of these non-UK nationals are from EU countries, while nationals of Asia, Africa and Oceania account for 19, 15, and 7 per cent of the migrant workforce respectively.

Figure 3.8: Percentage of employed London residents by nationality, 2008



Source: APS 2008 (ONS Crown Copyright)

Figure 3.9: Regions of origin for employed non-UK national residents, 2008



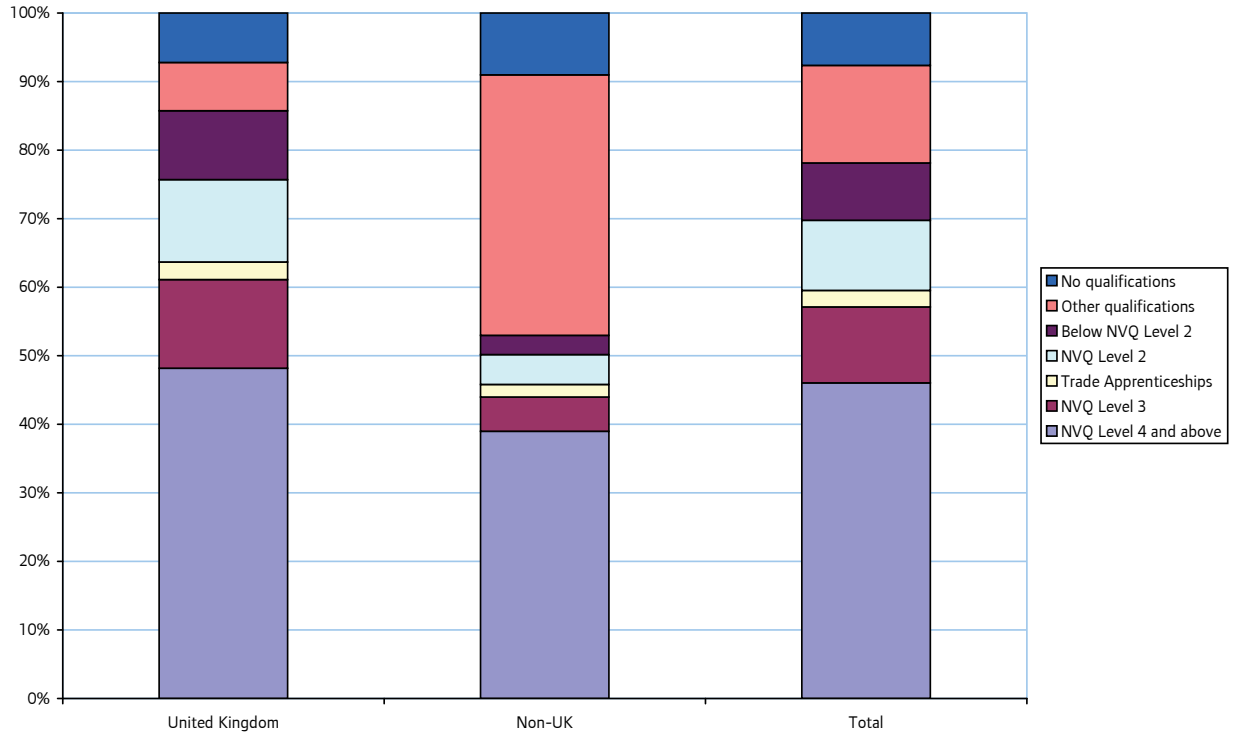
Source: APS 2008 (ONS Crown Copyright)

Figure 3.10 shows that many of these non-UK nationals are also highly skilled. However, the full extent of skills that non-UK nationals bring to the London workforce is somewhat hidden when UK national vocational qualification levels are used as the means of comparison. This is because many vocational qualifications obtained internationally do not translate easily into NVQ levels. This results in significant

proportions of non-UK nationals being classified as having 'other qualifications'. Approximately 40 per cent of non-UK nationals living and working in London are categorised as holding 'other qualifications'. This compares to just over 7 per cent of UK nationals.

However, 'other qualifications' should not be taken to mean low skills. When the LSE[19] compared migrants to the local population based on years of schooling, it found that migrants from both rich and poor countries had generally spent longer in education than UK-born London residents aged between 25 and 44.

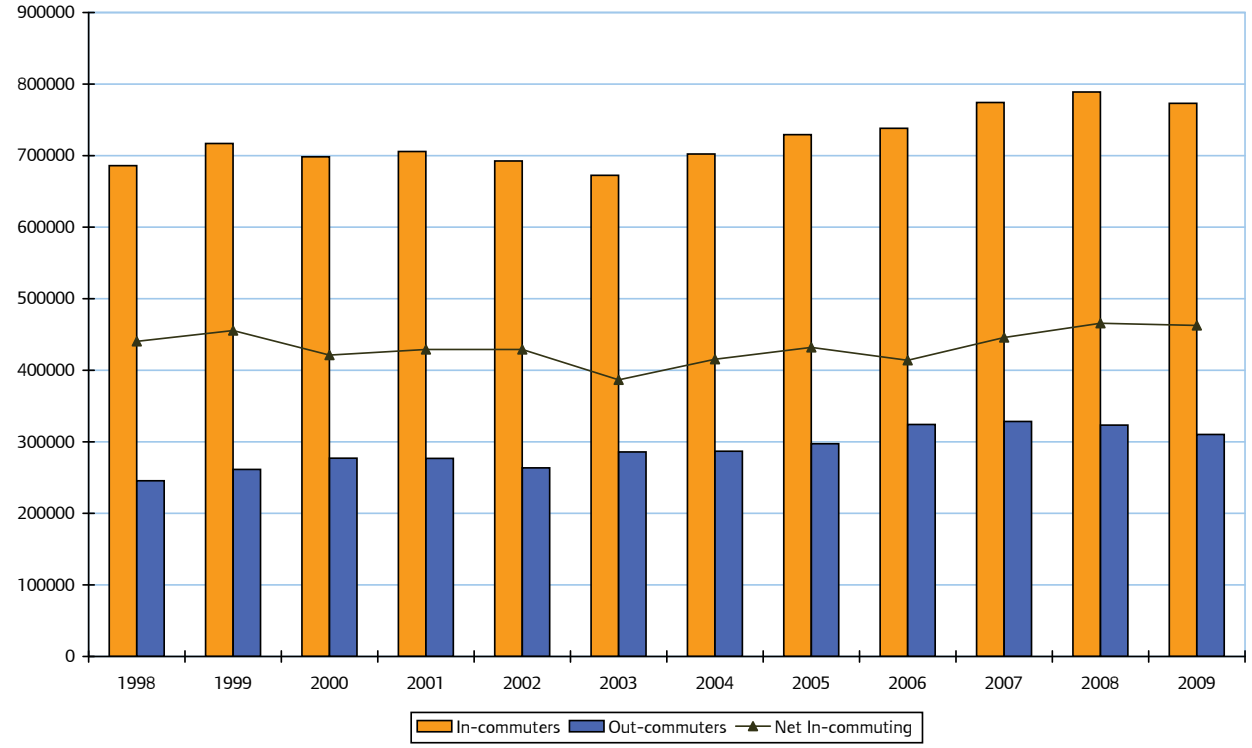
Figure 3.10: London residents in employment by nationality and qualification level, 2008



Source: APS 2008 (ONS Crown Copyright)

London's workforce is also boosted by a significant number of commuters into the city. Figure 3.11 shows that over the last decade or so there have generally been more than 700,000 workers that commute into London each day. However, around 300,000 London residents work in locations outside London's boundaries. As Figure 3.11 shows, net commuter numbers have remained broadly steady since 1998. Overall, inward commuters tend to have similar qualifications as employed London residents, but tend to be concentrated in some industries. For example, the financial services sector has the highest proportion of its jobs filled by commuters at close to 30 per cent.

Figure 3.11: Commuting levels into and out of London 1998-2009



Source: Labour Force Survey, Spring quarters

Higher education and research institutes

As well as a world class labour force London also offers business access to world class higher education and research facilities. Twenty-five per cent of all UK researchers are employed in London and the city has five of the UK's top ten research universities (Imperial, UCL, London School of Economics, King's College and St George's Hospital Medical School).

In 2009, The Times Higher Education Supplement ranked UCL 4th, Imperial 5th, King's College 23rd and the London School of Economics 67th in its list of the world's best universities. These ratings are supported by the Shanghai Index 2009, which ranked Imperial, UCL and King's College in their Top 100 universities.

After Tokyo, PwC[20] found that London has the second most universities in the top 500 universities and the highest share in the top 100 MBA universities. London is known globally for its business education, with the London Business School rated as the top business school in Europe by Business Week. Cass Business School the business school of City University London (Europe's largest finance school) is also a highly rated business school.

The UK is the world's second most popular destination for foreign students. According to Study London[21] there are more than 90,000 overseas students at London's 42 universities and higher education institutions, from over 200 different countries – more than any other city in the world.

International students not only add to the diversity and culture of London's universities, they provide additional highly skilled workers to London's workforce, and have a significant positive impact on the economy through their spending on UK goods and services.

In addition, students that go on to stay in London and move into the work force tend to generate a net benefit for the Exchequer as they generate more tax revenue than is required to pay for the public services they use[22].

London's business environment

Traditionally, London has provided businesses with an attractive, and internationally competitive, taxation and regulatory environment. This is supported by international surveys, such as the Global Financial Centres Index which rates London's business environment as the best of all international financial centres, and the Cushman and Wakefield survey in which London ranks towards the top (though not at the top) on the climate for doing business.

London's business environment is enhanced by the independence of the legal system, and stability of its political environment. This allows businesses to have confidence that their actions (for example in making investment decisions) will not be unfairly or unduly affected by the Government or other parties.

Further to this, London has a natural advantage over most other cities in Europe as a base for establishing an internationally oriented business due to the fact that English has established itself as the international language for doing business and is the first language of most of London's workforce.

Taxation

As shown in Table 3.3, to date, the UK has traditionally had an internationally competitive tax regime. Analysis by Owens[23] finds that the tax rates most important to business[24] have generally been below OECD and EU 15 averages in the UK. In relation to London's attractiveness to business, it is useful to consider the figures for the average effective tax rate (AETR) on corporations and the tax wedge. The AETR measures the wedge between the pre-tax rate of return on investment earned by a company and the post-tax rate of return[25]. This measure, as illustrated in Table 3.3, shows that the UK has traditionally provided a very competitive environment for firms to invest in (behind only Ireland and Sweden).

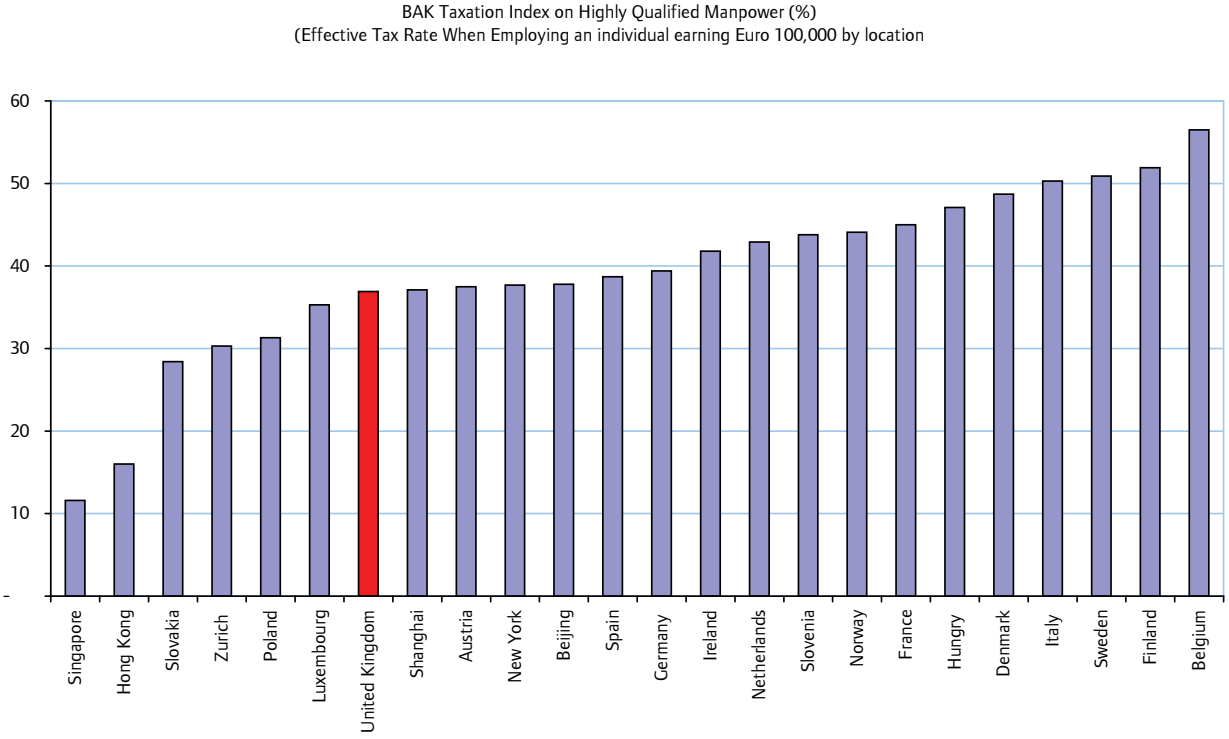
Table 3.3: Tax comparison for selected OECD countries

	Top Personal Income Tax Rate 2008	Top Corporate Income Tax Rate 2009	Average Effective (Corporate) Tax Rate 2005	Tax Wedge 2008	VAT 2009
Australia	46.5	30.0	26.2	26.9	10.0
Belgium	53.7	34.0	26.4	56.0	21.0
Canada	46.4	31.3	28.4	31.3	5.0
France	45.8	34.4	25.4	49.3	19.6
Germany	47.5	30.2	31.5	52.0	19.0
Ireland	41.0	12.5	10.9	22.9	21.5
Italy	44.9	27.5	26.0	46.5	20.0
Japan	50.0	39.5[26]	31.7	29.5	5.0
Luxembourg	38.9	28.6	..	35.9	15.0
Netherlands	52.0	25.5	25.1	45.0	19.0
Norway	40.0	28.0	24.2	37.7	25.0
Spain	43.0	30.0	26.1	37.8	16.0
Sweden	56.4	26.3	20.9	44.6	25.0
Switzerland	41.7	21.2	25.1	29.5	7.6
United Kingdom[27]	40.0	28.0	23.9	32.8	17.5[28]
United States	41.9	39.1	29.0	30.1	..
OECD Average	41.9	26.3	..	37.4	17.7
EU15	47.0	27.0	..	42.8	20.0

Source: Owens 2008, OECD Tax Database accessed February 2010

The tax wedge measures the difference between pre-tax and post tax earnings of the individual. It is an estimate of how much more the firm has to pay an individual employee (after all personal tax deductions and taxes on the employer) to provide the individual with 100 per cent of the average annual wage. The UK tax wedge of 32.8 per cent in 2008 was below the OECD and EU 15 averages. As shown in Figure 3.12, BAK Basel[29] also found that the UK's tax-wedge for high earners is also competitive by international standards. (An assessment of how the UK/London's tax competitiveness might change as a result of recent developments is considered in Chapter 6).

Figure 3.12: The tax wedge for high income earners, 2009



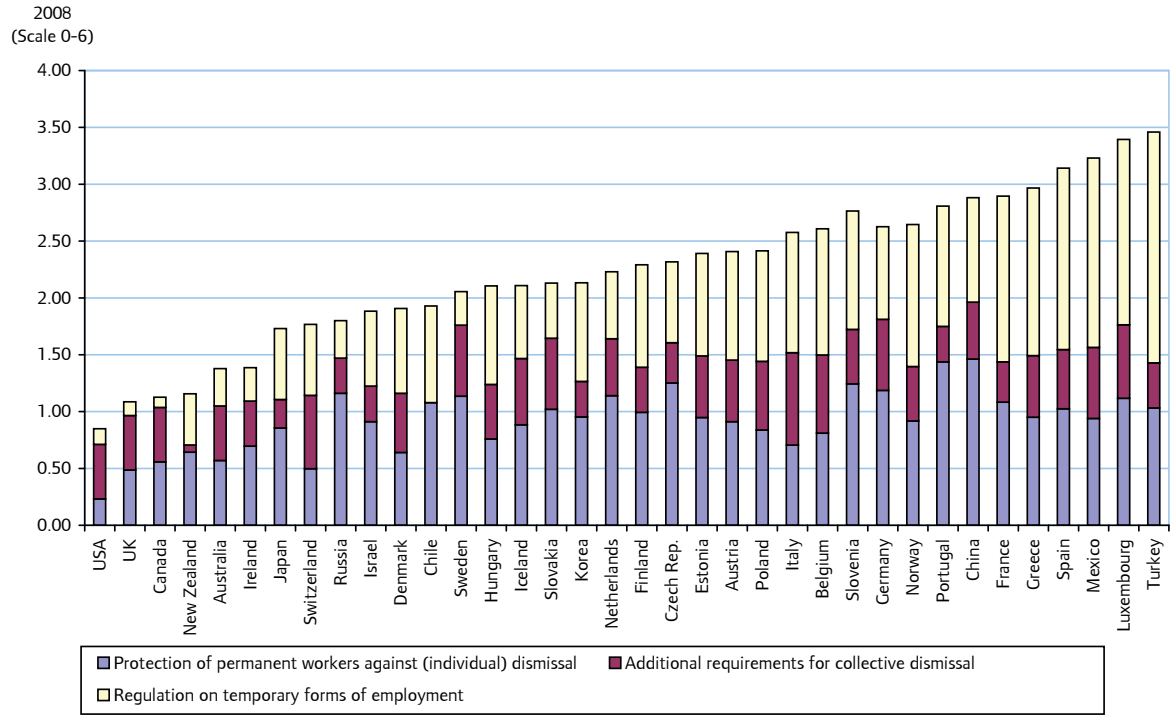
Source: ZEW/BAK Basel 2010

Based on OECD[30] analysis of taxation and FDI, it is possible that the UK's relatively low tax wedge might be an important factor in its success in attracting FDI to the country.

Regulation

London (and the UK more generally) provides businesses with a high degree of flexibility regarding employment decisions. An OECD[31] comparison found the UK's employment protection legislation to be the least stringent of any EU nation, rating the arrangements as less than half as strict as that faced by businesses employing people in Germany, France and Spain (see Figure 3.13). The perception of London and the UK as having a relatively straightforward regulation regime may have also helped the capital grow in the past[32].

Figure 3.13: Strictness of employment protection legislation, 2008



Source: OECD 2009

The OECD[33] also found that greater flexibility in relation to employment arrangements was associated with higher levels of employment and reduced levels of long-term unemployment on a permanent basis.

Access to markets

London is one of the largest cities in Europe[34]. London's large domestic population provides both a deep source of labour and demand for goods and services produced here. Further, 99 per cent of the world's business activity takes place in locations in time zones that overlap with London's working day (more than any other city in the world).

The Corporation of London estimates that London accounted for 54 per cent of 'city-type' activity in the European Union in 2003[35]. The depth of the markets and business activity in London is further supported by London's position as a leader or significant global player in many important financial services markets.

As previously noted, London has the greatest presence of international service sector firms of any other world city[36]. London is also the base for the headquarters of 73 of the world's 2000 largest firms (equal second with New York, but behind Tokyo)[37]. These strong linkages to the rest of the world mean that firms located in London have access to networks that can assist them in doing business in a range of international markets across various business sectors.

Transport networks

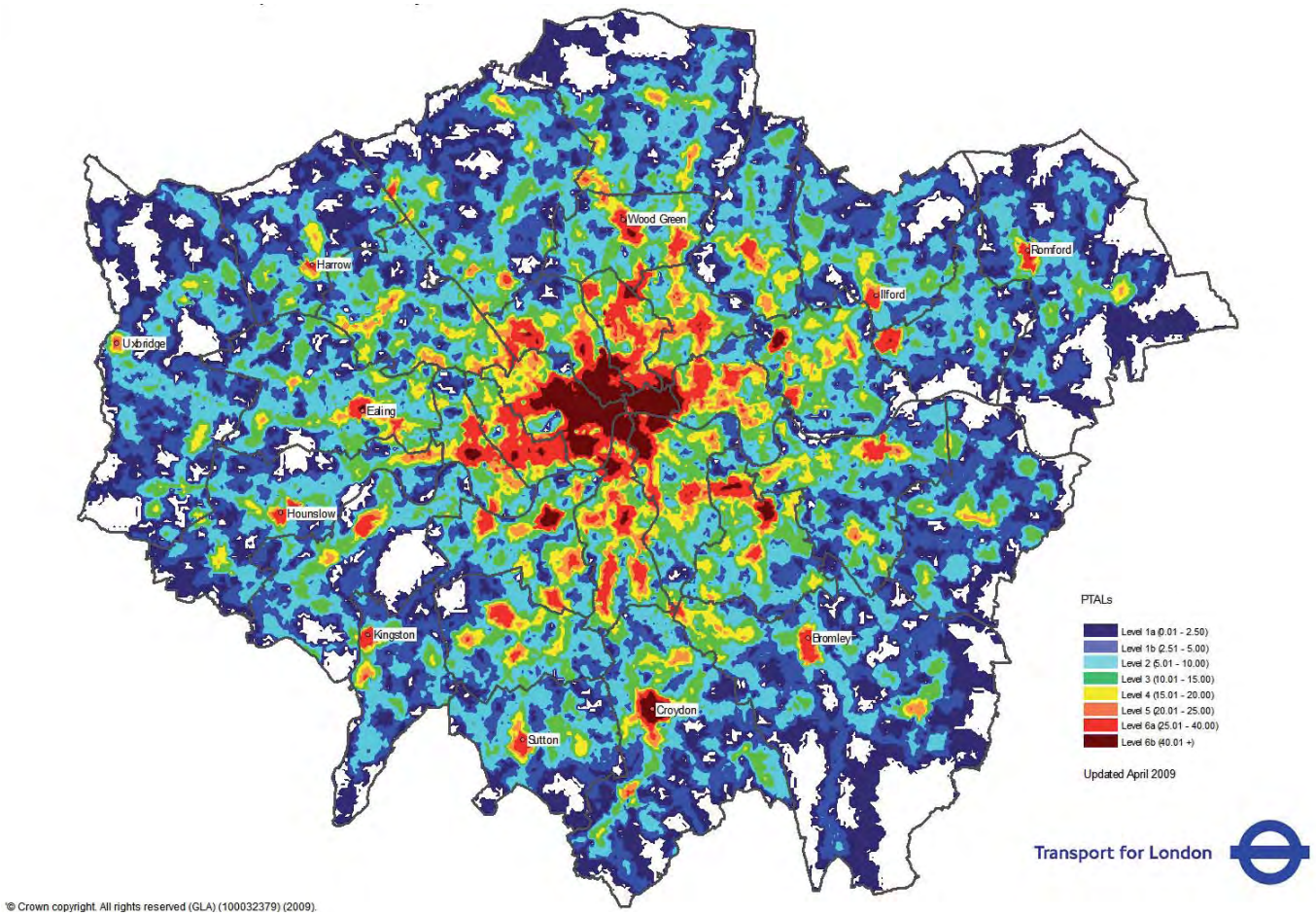
London offers businesses an extensive transport network for both domestic and international travel. International travel infrastructure increases the number of markets that can be easily accessed from London, while domestic transport links within and around the city increase the size of the labour pool businesses can gain access to.

London is served by five international airports, three of which are among the 25 most busy in Europe[38 39]. In 2008, the five airports catered for approximately 137 million passengers, of which Heathrow accounted for 49 per cent[40].

High speed rail services connect London to mainland Europe — in 2008 over 9 million passengers travelled to Europe by train[41]. As with air travel, this rail link opens up markets that can be accessed from Central London.

Within London, there is an extensive public transport system across the city. Figure 3.14 shows that almost all of Greater London is covered by some form of public transport. Public transport accessibility is greatest in Central London, which reflects the radial nature of the network. As seen in the previous chapter (Figure 2.4), the extensive network means that over 3 million people are within 45 minutes of much of the centre of London (using minimum journey time by public transport). Likewise, Londoners are within 45 minutes minimum public transport journey time of many jobs. As the funded transport capacity increases come on line over the next ten years, the number of jobs that residents can reach within 45 minutes will also increase. For example, Crossrail will increase the carrying capacity of the rail network by 10 per cent from 2017, and the Tube improvements are increasing its capacity by 30 per cent.

Figure 3.14: Accessibility to public transport in London (PTALs)



Source: TFL (2010), Travel in London.

Note: PTAL: Public Transport Accessibility Level

London's attractiveness to people

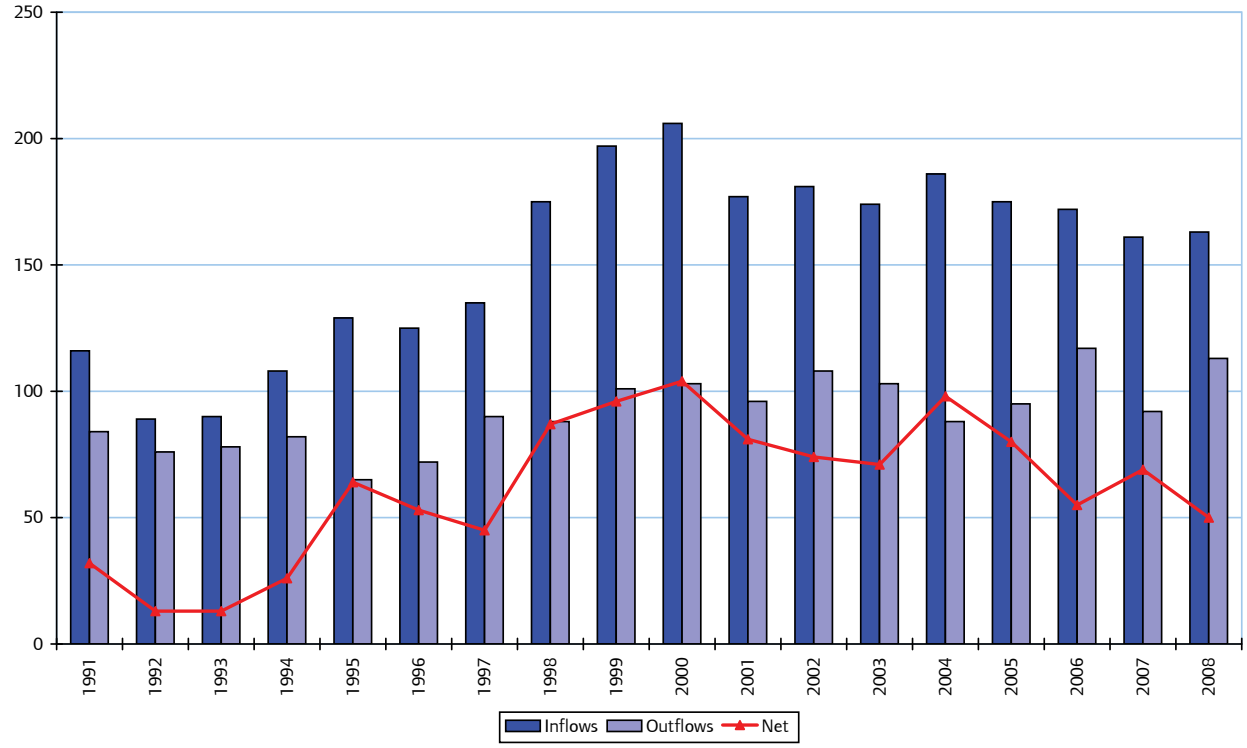
In a global image study[42] London ranked third overall when measuring people's perception of the image and reputation of 50 major cities worldwide. The index measures the individual's perception of each city, which influences their choices on where to live, work and travel to. Of the subcategories London ranked top for its 'Presence' which looks at people's knowledge of the city and perception of its global contribution and 'Potential' which measures people's perception of the city as a good place to do business, to find a job and to go to school.

The Booz and Co report[43] found that people are attracted to London because it is seen as a great place to live, it is open and attractive to international communities and it is home to world leading educational opportunities. London is found to be attractive to highly skilled people because it:

- Offers good career opportunities and high wages;
- Has one of the most diverse populations of any international city;
- Has a significant cultural and entertainment offer; and
- Is a relatively green city – in terms of access to green space.

London attracts highly skilled people from around the country and around the globe. As shown in Figure 3.15, more international migrants come to London than leave each year. On average, around 150,000 international migrants move to London each year. In 2007-08, London attracted around 37 per cent of all international migrants to the UK[44]. London is also attractive to young people starting their careers which is evident from the 2001 Census data illustrated in Appendix 2C (see chart 'Net domestic migration').

Figure 3.15: International migration into and out of London (thousands)



Source: Total International Migration Series, ONS

A City of London report[45] shows that over the last 10 years London's working age population showed rapid growth (of 68,000 p.a.) which was entirely due to the growth in foreign born population. By 2008 this group comprised 40 per cent of London's working age population.

Employment opportunities and wages

One of the main factors that attract highly skilled people to London is the vast array of employment opportunities. For example, London's financial and related business services companies employ around 7,950 to 10,000 graduates each year[46].

London is often referred to as an escalator city because it allows workers to develop their career. Workers in London are allowed to develop to their potential because they are often required to occupy jobs that are 'above what might be expected from their qualifications'[47].

In addition to offering more employment opportunities, Table 3.4 shows that London also offers significantly higher wages than the rest of the UK. This can be seen by comparing median wages across the regions. The median wage in London is 28 per cent higher than the median wage for the UK, and between 22 and 44 per cent higher when compared directly to other regions.

Table 3.4: Median gross weekly earnings by government office region in 2009 (full-time employees, £ per week)

	All full-time employees (£)	London mark-up
London	627.4	
United Kingdom	488.7	28%
North East	435.9	44%
North West	460	36%
Yorkshire and the Humber	450.8	39%
East Midlands	456.6	37%
West Midlands	456.4	37%
East	479.1	31%
South East	513.6	22%
South West	453.8	38%
Wales	440.8	42%
Scotland	473.6	32%
Northern Ireland	439.1	43%

Source: ONS (2009) 2009 Annual Survey of Hours and Earnings

Wages in London have historically been high by international standards. After allowing for taxes and other social security contributions, UBS's 2008 survey[48] found that wages in London were the 8th highest of the 71 cities it compared. In its 2009 survey, London's position had fallen to 18th as a result of the depreciation of Sterling[49]. With demand for highly skilled workers forecast to increase over the next 20 years, London should remain an attractive city for migrants seeking employment opportunities.

Cultural diversity

London is one of the most culturally diverse cities in the world. Based on both the mix of nationalities and the number of residents born overseas, London is rated as the 5th most diverse city, behind only New York, Toronto, Dubai and Los Angeles[50]. In fact, there are more than 30 nationalities for which the population of working aged residents exceeds 10,000 people and a further 20 nationalities with more than 5,000 working aged residents in London[51].

The resulting social networks that come from having a critical mass of people from different countries and cultures helps maintain London's attractiveness as a place for international migrants. These social networks can help newcomers to the city find work and accommodation. Some international studies have found that social networks can help new migrants find jobs better matched to their skills[52].

Culture and entertainment

London's cultural offerings and vibrant night life is an important factor in attracting people to London[53]. London's amenities – museums, libraries and archives – are some of the best in the world[54]. London offers its residents and visitors more cultural and entertainment offerings than most other leading international cities (see Table 3.5).

Table 3.5: London's cultural and entertainment offering

Indicator	London	New York	Paris	Shanghai	Tokyo
Number of museums	184	101	157	106	79
Number of public libraries	395	255	303	248	369
Number of UNESCO world heritage sites	4	1	2	0	0
Number of major theatres	55	39	N/A	19	N/A
Number of performances at major theatres per year	17,285	12,045	15,598	3,117	8,281
Number of music performances per year	32,292	22,204	3,612	11,736	7,419
Number of art galleries	92	N/A	59	6	40
Number of film festivals	62	128	43	1	27
Number of night clubs, discos and dance halls	306	279	277	N/A	N/A
Number of bars per 1,000 population	0.41	0.22	1.22	0.17	0.75
Number of festivals	200	81	40	22	N/A
(1) Figures for New York calculated for the New York Metropolitan Area.					

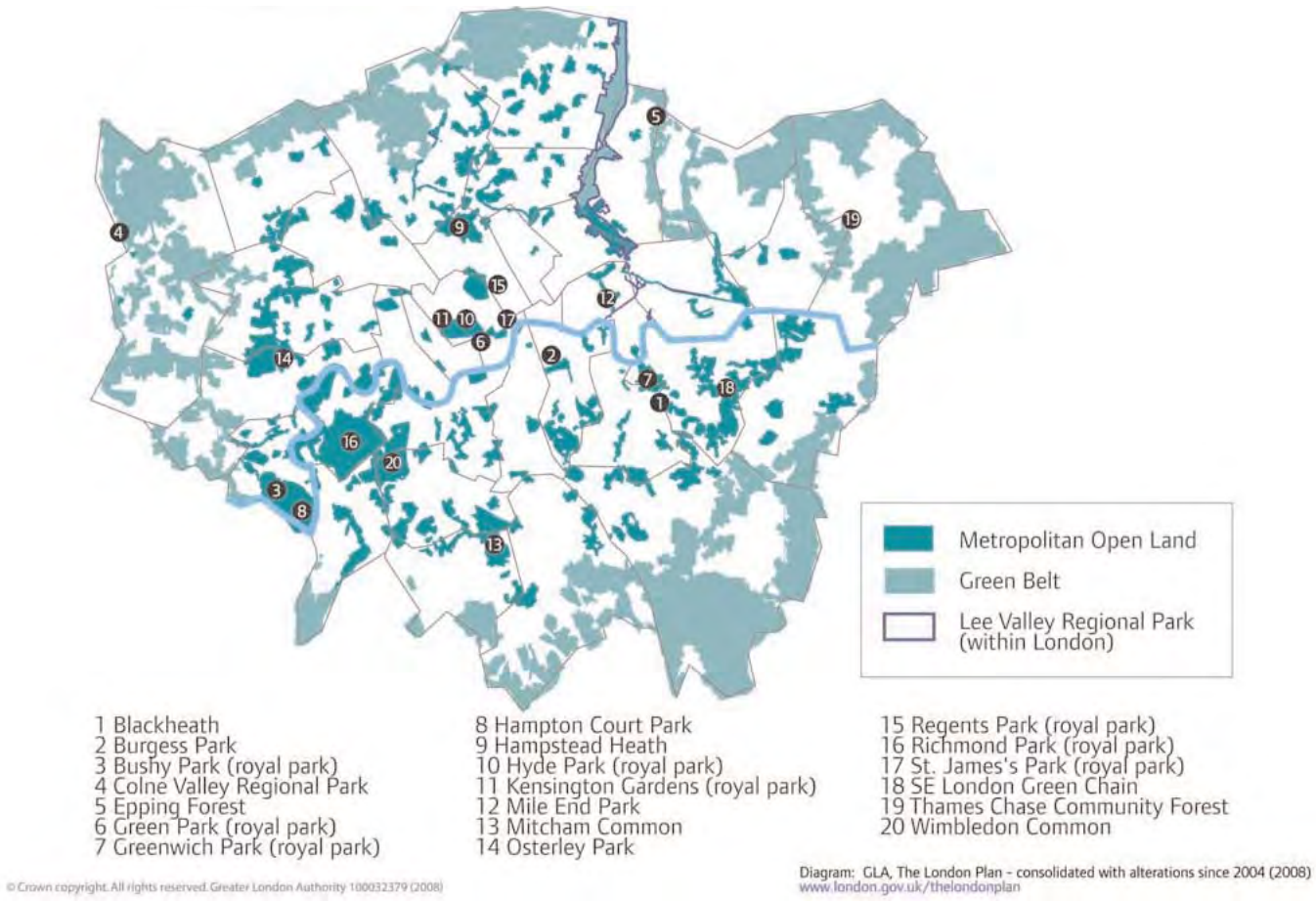
Source: LDA (2008) London a cultural audit

In addition to the local offerings, as shown earlier, London's transport links mean it is an excellent base for accessing other locations around Europe and the rest of the world. There are direct flights from London to around 486 worldwide destinations.

Green space and local amenities

Parks and gardens, when combined with the capital's rivers and other green spaces – woodlands, meadows, grasslands, golf courses, sports pitches etc. – account for 66 per cent of Greater London's land mass[55].

Figure 3.16: Green space in London



Source: GLA, The London Plan 2008

London is continually investing to enhance the liveability of the city. For example, between 2004 and 2010 almost £1 billion was allocated to London boroughs, including locally oriented transport schemes to improve the safety, appearance and accessibility of town centres and residential streets; walking and cycling programmes; road maintenance works and bus priority measures[56]. £150 million will be allocated to London boroughs in 2011/12, including £87m for corridors, neighbourhoods and smarter travel. TfL is also investing over £100m in cycling in 2011[57].

In addition, London is investing heavily in its sporting infrastructure and improving public spaces around the city as part of London 2012. A significant factor contributing to London winning the 2012 Olympic Games was due to the investment that the Government would make in improving and regenerating large areas of London and its commitment to increasing the ease with which its residents could gain access to sporting groups and facilities.

Chapter 4: The outlook for economic growth

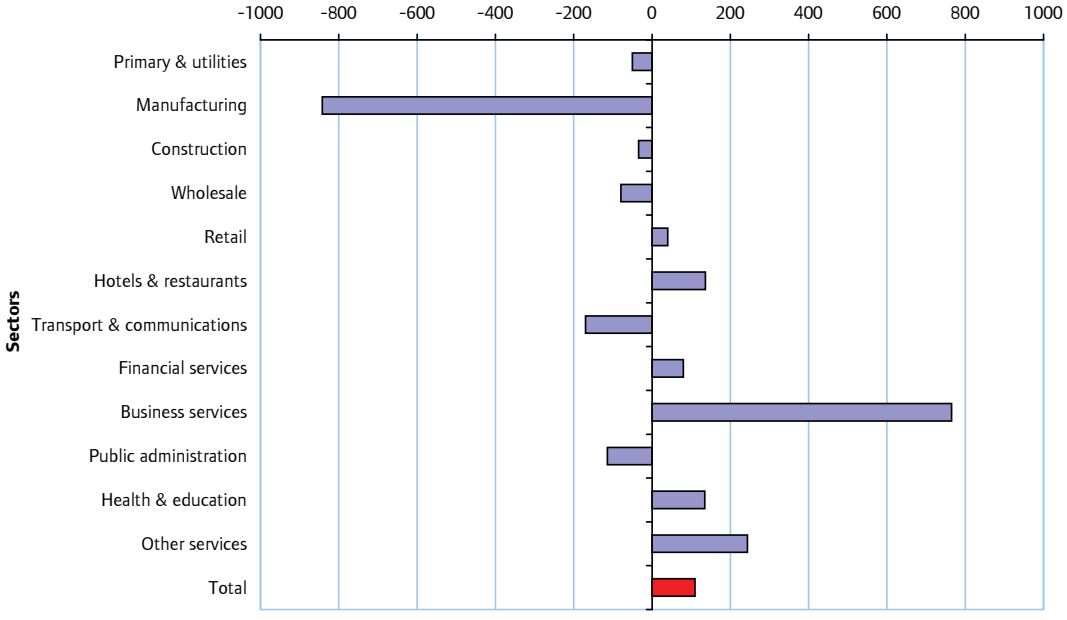
London has seen a significant shift in its industrial structure away from manufacturing towards services over the past three decades or so. The recent difficulties in the financial services sector will continue to impact other sectors of London's economy given the linkages that exist between these sectors. The current economic downturn, although relenting, has been severe with many forecasters expecting that it will take until 2011 for meaningful growth to be entrenched. However, growth is expected to rebound and in the longer term employment levels in London are projected to surpass the levels seen before the recession. This chapter considers how recent macroeconomic events – particularly the crisis in the financial services sector – might impact on London along with a brief economic history and a survey of other sources of economic strength in London. It concludes with long-term projections of employment for London.

The nature of London's economy

London has since the medieval period transformed itself from a small capital city into "one of the key metropolitan centres of the twenty-first century"[1]. This situation developed over the course of hundreds of years with Poll Tax records in 1377 already recording that London had more tax payers compared to York and Bristol. Similarly the service sector developed quicker in the capital than elsewhere in the country so that "the profession of 'shopkeeper' was only found in London"[2] in the 12th century. By 1700 London had become Europe's largest city with re-exports accounting for nearly two-fifths of London's overseas trade, the period also saw continued development in the service sector which continued to grow up to and throughout the 19th century with London emerging as a 'world city' in the 19th century. London manufacturing also remained important into the industrial revolution with it retaining its status as the nation's largest manufacturing city "even as late as 1851"[3], although the factory system dominant elsewhere did not really take off in the capital. Manufacturing continued to evolve in the interwar years with the second industrial revolution seeing industry shunning expensive central city production sites, with headquarters located in and around the City of London. Finally into the post war period financial services in the City continued to develop with the rise of the Eurodollar market and the Big Bang of 1986. It can thus be argued that throughout its history London has benefited from a location advantage, its involvement in trade, its scale and diversity and its flexibility, advantages that continue on into the current period of an increasingly globalising world.

As noted in previous chapters and above, the dynamic impact of agglomeration effects and the deepening globalisation of trade, amongst other factors, have led to London currently focusing on service activities, particularly financial, business and cultural services. As shown in Figure 4.1, analysis of Experian Economics (previously Experian Business Strategies) data shows that between 1971 and 2007 the London economy saw a shift in its industrial structure away from manufacturing towards services. Over the period, employment in both business services and other services, which includes London's media sector and recreation and leisure, more than doubled. Employment in business services now accounts for over one-quarter of all jobs in London (up from 10 per cent in 1971). At the same time employment in manufacturing is now less than a quarter of its level in 1971 – falling by over 800,000 from 23 per cent of employment in 1971 to 5 per cent in 2007.

Figure 4.1: Net change in London's employment 1971-2007 ('000s)



Source: Experian Economics

Research by the London School of Economics on behalf of the City of London[4] also confirms the evidence in Chapter 1 that although financial services is an important employer in London, with the sectoral share in London when compared to the rest of the UK being significantly elevated, it is far from being the only source of employment in London. The research additionally highlights the higher proportion of managerial and professional jobs that London enjoys compared to the national average (see Table 4.1).

Table 4.1: London and national occupational structures compared, 2009

Occupational Group	Workers in London (full-time employees (FTE), 1000s)	Occupational share of London total	Occupational share in area as ratio of that for UK		
			London	Other conurbations	Rest of GSE
Higher managerial and professional	904.9	24.00%	1.52	0.91	1.03
Lower managerial and professional	1259.0	33.40%	1.17	0.99	1.00
Intermediate occupations	407.9	10.80%	1.00	1.16	0.95
Small employers and own-account workers	336.7	8.90%	0.90	0.79	1.07
Lower supervisory and technical	234.1	6.20%	0.61	1.04	0.99
Semi-routine occupations	313.0	8.30%	0.68	1.09	0.96
Routine occupations	206.3	5.50%	0.59	1.10	0.94
Unclassified	103.5	2.70%	0.95	0.88	1.10
Total	3765.5	100%	1.00	1.00	1.00

Source: Labour Force Survey, first quarter 2009, in The London School of Economics, 'London's Place in the UK Economy, 2009-10' report for the City of London, October 2009.

Note: A number above 1 indicates an occupational share greater than the UK average and below 1 indicates an occupational share below the UK average.

The financial services sector in the context of London's economy

Whilst employment in financial services has grown more modestly over the past three decades or so when compared to other parts of London's economy, as noted in Chapter 1, London has an international specialisation in financial services. London is home to one third of the UK's financial services jobs[5], with the UK industry contributing around 8 per cent to national output (comparable to the USA and other EU economies) and nearly 14 per cent to the tax collected. HM Treasury has found that workers in financial services are typically more productive than workers in other sectors[6]. The financial services sector is thus important to London's economy with the UK standing as a world leader in a number of financial sectors (see Table 4.2) and the European leader in most others. Furthermore a report by the IFSL in 2009[7] showed that in those sectors where it is the market leader (cross-border banking, foreign exchange, over the counter derivatives and marine insurance), the UK had either generally maintained or increased its share of the world market over the past 10 to 15 years. Between 2001 and 2008 the value of each of these financial markets in the UK also increased significantly[8].

The dominance of the UK in the financial services sector has been partly attributed to the clustering of a full range of expertise in a number of key sectors in the UK (the agglomeration benefits set out in Chapter 2) and London, and the UK being "home to a globally leading professional and business service sector"[9]. Thus

although not the only sector of importance to the economy, financial services are therefore a significant direct net contributor to the UK's economy and as shown earlier these sectors are all areas in which London has a particular specialisation and are therefore significant contributors to London's economy.

Table 4.2: International financial markets in the UK (percentage shares)

	UK	US	Japan	France	Germany	Singapore	Hong Kong	Others
Cross-border bank lending (Mar 2009)	19	9	8	8	11	2	3	40
Foreign equities turnover (Jan-Sep 2009)	19	69	-	-	7	-	-	5
Foreign exchange turnover (Apr 2009)	36	14	7	-	-	6	-	37
Exchange-traded derivatives turnover (2008)	6	39	2	1	12	-	1	39
Over-the-counter derivatives turnover (Apr 2007)	43	24	4	7	4	3	1	14
Marine insurance net premium income (2008)	17	10	12	6	7	1	1	46
International bonds - secondary market (2008)	70	...	...	...	...	...	...	...
Fund management (as a source of funds, end-2008)	9	50	6	6	3	-	1	25
Hedge funds assets (end-2008)	18	69	2	1	-	1	2	7
Private equity - investment value (2008)	17	25	-	1	1	1	-	55
IPOs (2008)	8	4	-	-	-	4	3	81
Securitisation - issuance (2008)	14	55	2	-	3	...	...	26

Sources: IFSL calculations and estimates based on data published by Bank for International Settlements, London Stock Exchange, Bank of England, Futures Industry Association, International Securities Market Association, World Federation of Exchanges, EuroHedge, International Union of Marine Underwriters, SIFMA, European Securitisation Forum, Fitch Ratings, EVCA/Thomson Financial/PwC in IFSL Research, 'International Financial Markets in the UK', November 2009.

In trying to understand the effect of the recent difficulties in financial markets on London's economy, a report by Experian Economics for the LDA[10] found significant linkages between the financial services sector and other sectors of London's economy. Sales of 'professional services' to London businesses were worth an estimated £14.3 billion in 2006 (this accounts for 47 per cent of total sales, with other sales including sales to businesses outside of London and sales to consumers and sales to the public sector), with 37 per cent of the London business-to-business sales of professional services going to the financial services sector. A similar pattern was seen in the creative industries with sales to London businesses estimated at around £12.5 billion (or 36 per cent of total sales) with 36 per cent of the London business-to-business sales being with the financial services sector. Furthermore 58 per cent of the London business-to-business Information and Communication Technology (ICT) sales were to the financial services sector. Other sectors also had significant sales to the financial services sector. Thus, as well as having a large direct contribution to London's economy, financial services also impact on many other sectors of the economy through their trade linkages.

As a result of the financial crisis and the likely measures, which are currently being proposed, that will be implemented to mitigate the impact of any future crises, the financial services sector is likely to face a period of readjustment and structural change. The recent crisis was triggered by a number of factors

including global macroeconomic imbalances and financial innovation such as the growth of the securitised credit market, which was expected to reduce banking system risk but which ultimately proved not to[11]. The crisis has therefore heavily impacted the banking sector, amongst others. A failure of financial market regulation has been partly blamed for the crisis; in response the Financial Services Authority (FSA) plans, and has begun to introduce, a more invasive, judgment-based form of regulation compared to the 'light touch' form of regulation it previously employed. Other regulatory responses at both the national and international level are also likely and are currently being proposed. It is further probable that there will be less appetite for high-risk financial services products and operations in the economy for the foreseeable future. And it is anticipated that employment in the securitisation sector will decline as this sector is reorganised in light of the problems caused by the securitisation of sub prime mortgages amongst other things. Given the UK's (and hence London's) leading role in a number of financial sectors (see Table 4.2) all this could impact negatively on London's economy.

However, the scale of any impact on London's economy can be overstated. Whilst the financial turmoil particularly impacted on the banking sector, other areas of the financial services sector such as those dealing with marine insurance, equities or exchange rates for example have been less directly impacted. So although some structural change is likely in financial services, especially in banking, many sectors are unlikely to be directly affected and are likely to continue in a similar form as present. Indeed, even those sectors that are more directly affected – like securitisation for instance – are likely to continue in some form, albeit in a likely reduced and more tightly regulated form. Nevertheless, opportunities for rapid growth in the financial services sector might well be curtailed in the future and this is likely to indirectly impact other sectors of the economy through the trade linkages highlighted earlier.

Other aspects of London's economy

It should also be remembered as set out in Chapter 3 and as observed in research undertaken by Booz & Co[12] that London enjoys a number of factors that has allowed it to establish "a powerful position as a world capital of business". This is due to London being a "world leading financial centre", which has a "dominant services cluster" and is a "centre for global and European HQs". London has built on its "inherent advantages" including "time zone, (the) pre-eminence of the English language, increasingly widespread use of English law, (the) UK's status as a trading nation and historic strength of British Empire, (and its) position as the UK's main port and capital". These factors will remain although the report notes that London's position could be undermined by both UK national government and EU policy. It further remarks that there exists a number of sectors other than just financial services in which London is a leader including higher and business education, tourism, creative industries, legal services and that it "possesses a competitive ICT environment". This has led, as highlighted in Chapter 1, to London exporting far more than just financial services.

London remains more productive than the rest of the UK with a report for the City of London observing that output per worker was not only above the UK average "but also clearly ahead of every other major city-region. Indeed in terms of GVA per FTE worker, it is notable that its nearest challenger is actually the rest of the GSE (within London's extended economic region), rather than any other conurbation"[13]. The same report observes the strength of London in the Business Services, Tourism and the Creative Sectors. London's strengths are further elaborated on in a report by Europe Economics for the LDA[14] that found in terms of output and employment London was a global leader in not only financial services "and in particular banking", but also in management consultancy, accountancy and publishing. London is also a global leader in the trade in legal services, banking and securities and broking, and it has demonstrated global corporate leadership in securities and broking and legal activities. Sectors in which London nearly has global leadership were highlighted as well. Thus although financial services play an important role in the London economy the global importance of other sectors of the London economy should not be forgotten.

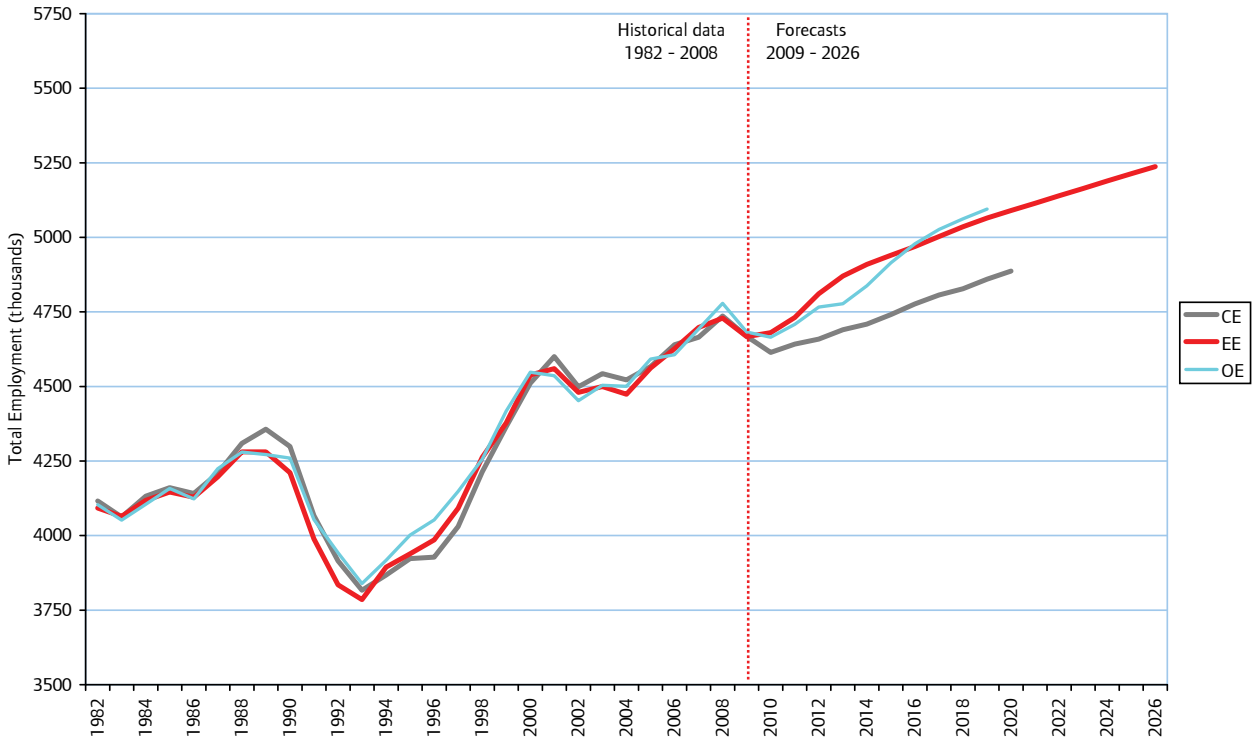
Forecasts for London's economy

Preliminary estimates from Experian Economics indicate the severity of the recession in London, with London's GVA estimated to have declined by almost 6 per cent through the course of the recession[15]. Still given the size of this downturn the concurrent drop in employment in both London and the UK as a whole has been moderate and less than expected by many forecasters especially in light of the employment drops seen in the recessions of the early 1980s and 1990s. This could mean that any recovery in employment after the recession may be more muted than expected as employers utilise the spare productive capacity implied by these figures. A further concern would be if the downturn had led to a permanent loss in potential output as this could lead to a slower than expected rebound of the economy.

In the medium term it is expected that London's economy will recover from the current recession. Most forecasters, and GLA Economics, expect that GVA growth will again be positive by 2011 although the total level of GVA is still likely to be below that seen in 2008. Employment is likely to remain weak in all sectors of the economy in 2010[16]. Being a trailing factor to output it is probable that unemployment will continue to increase or at least remain elevated for a time after output again begins to rise. Still although the current cyclical downturn has been severe it is likely that most reductions in output and employment will be cyclical and not structural. Further, provided an anaemic global recovery is avoided, at some point sustained economic growth will resume. With a bottoming out, and recovery in global corporate activity, opportunities for the financial services and business services sector will again arise. Following trends seen in previous downturns, both commercial and residential real estate will also eventually bottom out, which will encourage an increase in activity within this sector. Further with a reduction in personal debt levels, a stabilisation in the labour market and increases in consumer confidence as the recession ends, consumer-focused industries will again be able to grow.

Thus following a contraction in employment due to the current recession, forecasters expect London's employment level to continue to grow over the longer term (see Figure 4.2). All forecasts assume that by 2015, at the latest, employment will have recovered to the level observed before the recession (2008).

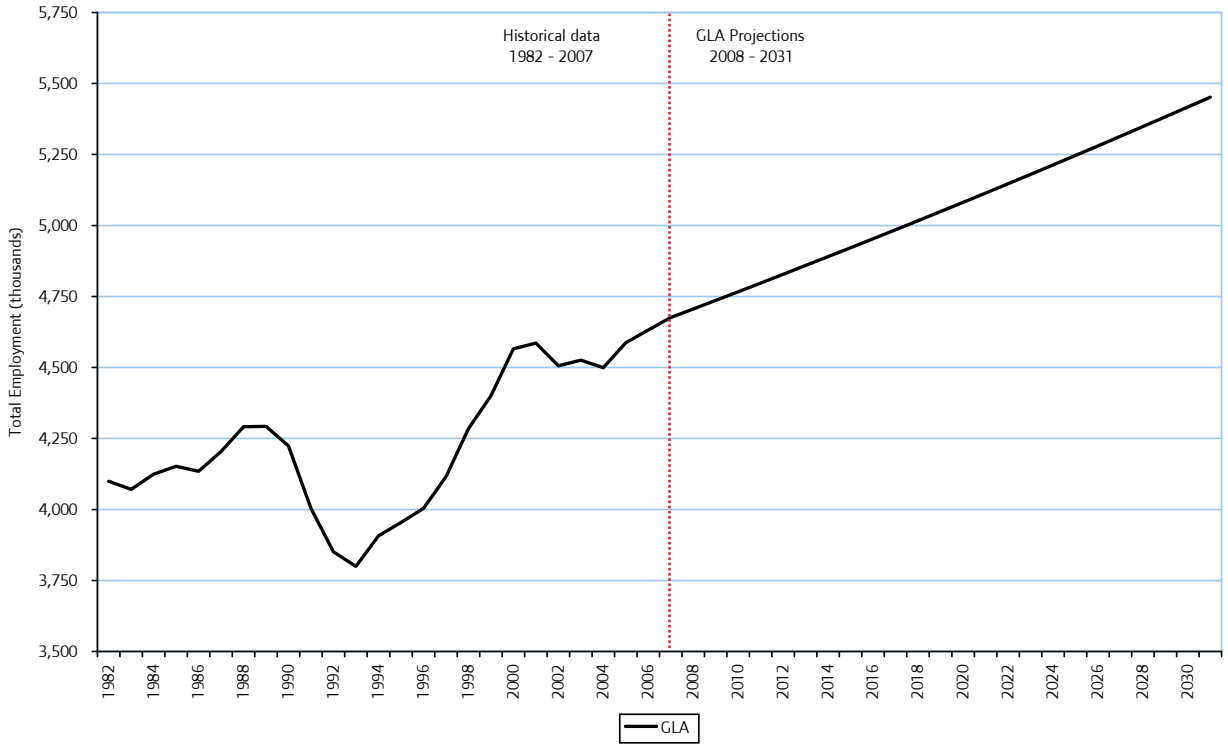
Figure 4.2: Employment forecasts for London by various forecasters to 2026



Source: Cambridge Econometrics, Experian Economics, Oxford Economics

Figure 4.3 shows the GLA's long-run employment projection. This long-run projection which is used for planning purposes by the GLA Group, abstracts from short-term fluctuations (and so is different to the independent forecasts included in Figure 4.2 in that it does not forecast for short-term fluctuations in the macroeconomy) and sees employment in London growing to 5.45 million by 2031, an increase of about ¾ million from 2007 levels[17].

Figure 4.3 The GLA's long-run employment projection to 2031



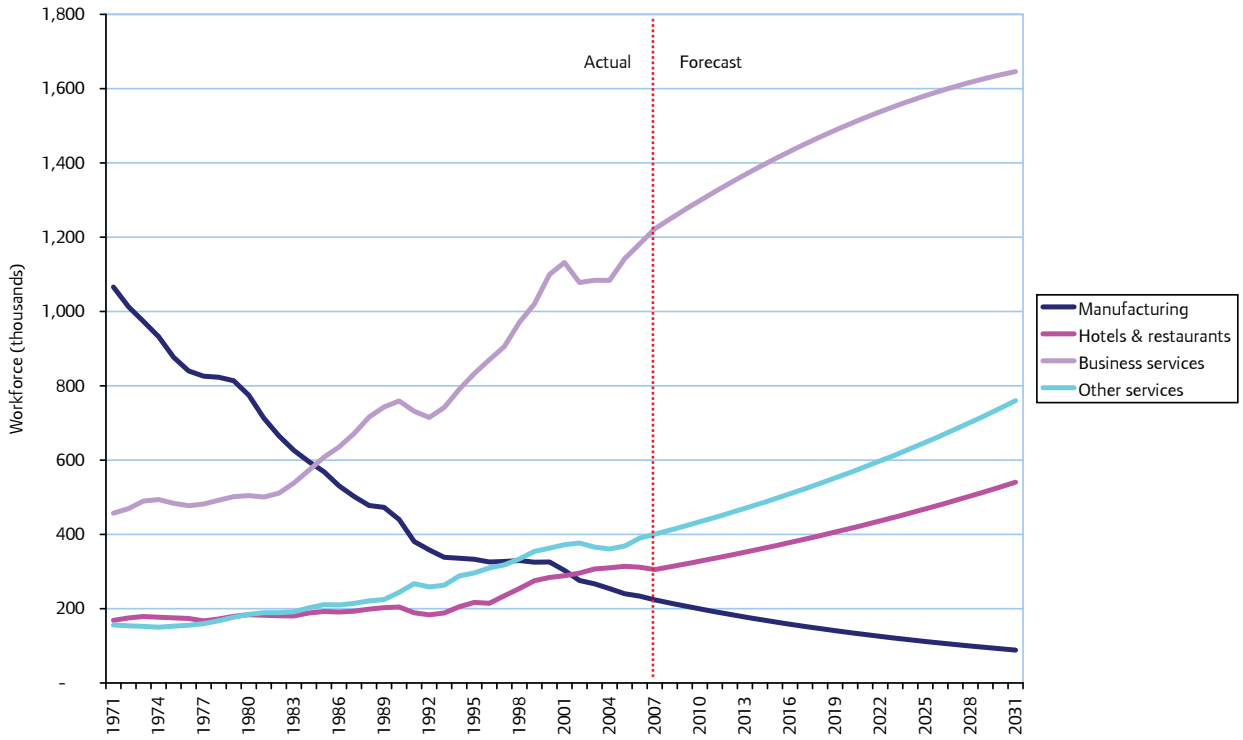
Source: GLA Economics Working Paper 38

This employment growth is projected to be driven primarily by the business services sector. Other sectors projected to experience significant growth over the next two decades or so are other services (which includes areas such as media, recreation and leisure for example) and hotels and restaurants. More modest employment growth is projected to be experienced by financial services, retail, and health and education. All other sectors are forecast to lose employment with particularly significant falls in employment in manufacturing. These projections are shown in Figures 4.4 through to 4.6.

Still as noted in London's Place in the UK Economy, 2009-10[18] a number of post recession scenarios could hinder an economic recovery in London. These scenarios include "a radical tightening of financial services regulation", "a retreat from globalisation", "pursuit of a more sustainable national economy", "a more critical national view of London's role in the UK economy", and "pursuit of a more diversified economic base for the London economy". All these scenarios would impact on London's long-term competitive and structural factors and hence impact on its recovery and employment growth, although it should be noted that these scenarios remain for the moment hypothetical.

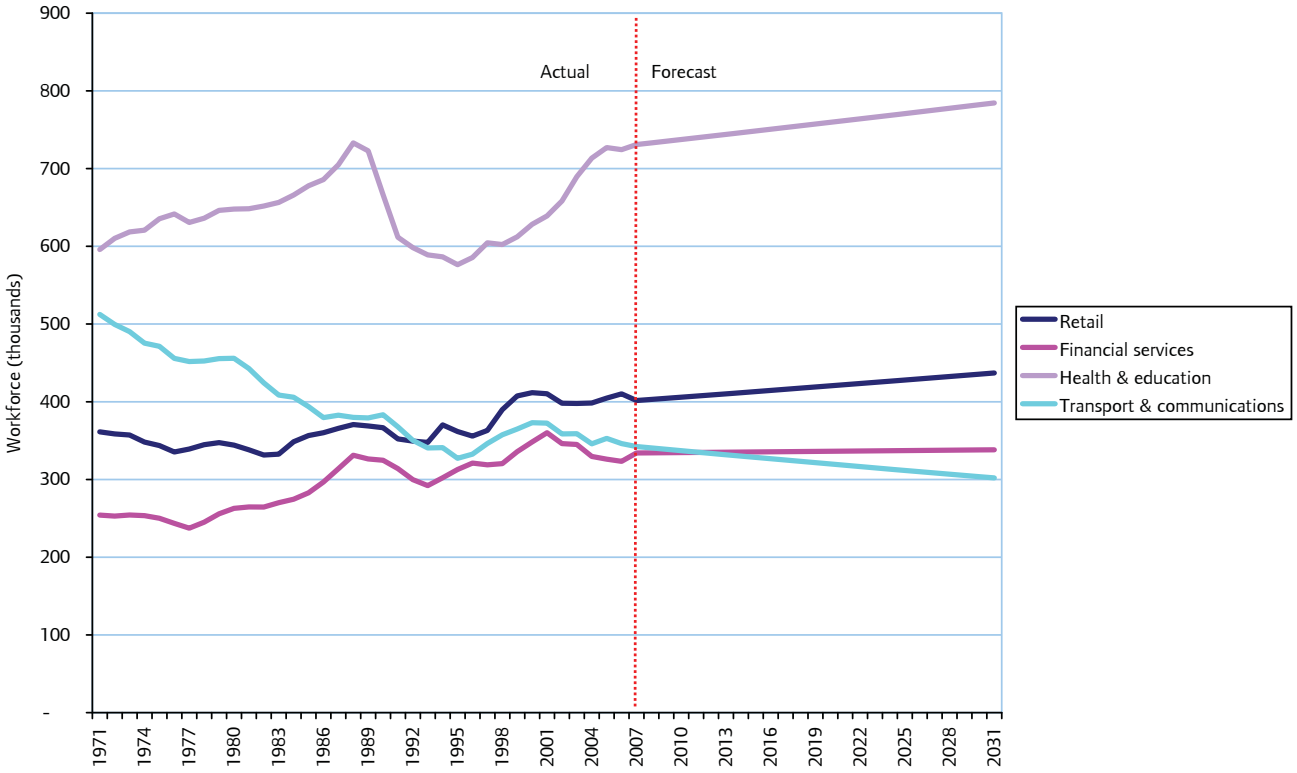
London's population, like its employment, is expected to grow substantially between 2007 and 2031. Table 4.3 shows the projected changes, split between CAZ, the rest of Inner London and Outer London. Detailed employment projections by sector and borough, alongside the GLA's population projections, are set out in Appendix 2D.

Figure 4.4: Employment projections for London by sector to 2031



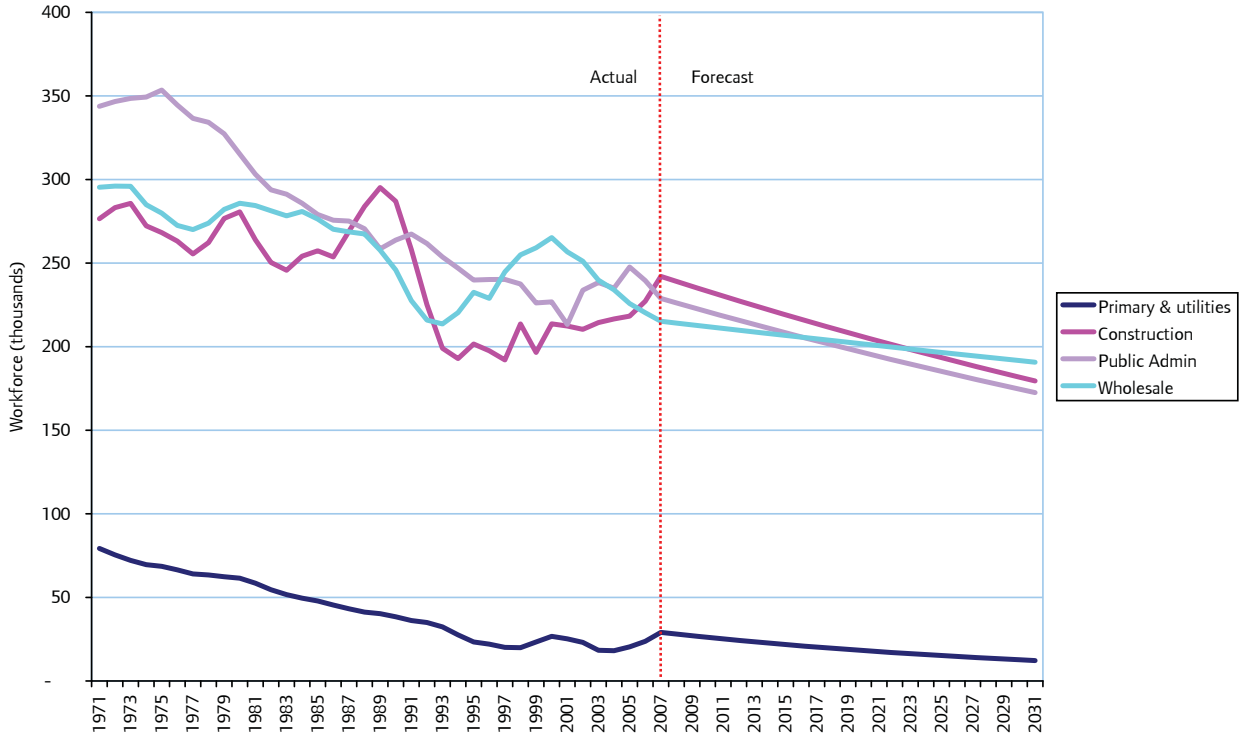
Source: GLA Economics

Figure 4.5: Employment projections for London by sector to 2031



Source: GLA Economics

Figure 4.6: Employment projections for London by sector to 2031



Source: GLA Economics

Table 4.3: CAZ, Inner (excluding CAZ) and Outer London employment and population figures

		Numbers ('000s)		% of Total	
		2007	2031	2007	2031
Employment	CAZ	1,198	1,378	26	25
	Rest of Inner London excluding CAZ	1,513	1,911	32	35
	Outer London	1,966	2,163	42	40
	Total	4,676	5,452	100	100
Population	CAZ	275	339	4	4
	Rest of Inner London excluding CAZ	2,731	3,383	36	38
	Outer London	4,565	5,097	60	58
	Total	7,571	8,818	100	100

Source: GLA

Note: This table shows population and employment figures in 2007 and 2031 for different geographic areas of London. These figures have been constructed using the information set out in GLA Economics Working Paper 39 and DMAG Update 08-2010, April 2010.

Chapter 5: Risks and opportunities from climate change

Climate change represents a significant market failure – greenhouse gas emissions have been higher than would have been socially optimal. As a result, some level of climate change is now inevitable. Unless greenhouse gas emissions are reduced significantly from their current levels further more dramatic changes to our climate may become unavoidable with considerable economic and social impacts.

If the full social costs of carbon – one of the main greenhouse gas emissions – could be reflected in prices then the market would create the right incentives for a socially optimal solution on the curbing of carbon emissions[1]. However, resolving this market failure will require difficult international agreements. Nevertheless, over time, economic activity will need to become much more carbon efficient and planning for this can provide London with new economic opportunities.

As well as mitigating the effects of climate change, London needs to adapt to the change in the climate that is already occurring.

This chapter looks at a significant risk to London's future economic prosperity: climate change. It starts by considering how and why climate change has resulted and what actions need to be taken to limit the extent of future climate change. The most economically efficient way to reduce the city's greenhouse gas emissions and the economic opportunities for London that might result from such actions will be examined. The chapter then moves on to consider the need for London to adapt to the level of climate change already likely to occur.

Climate change as market failure

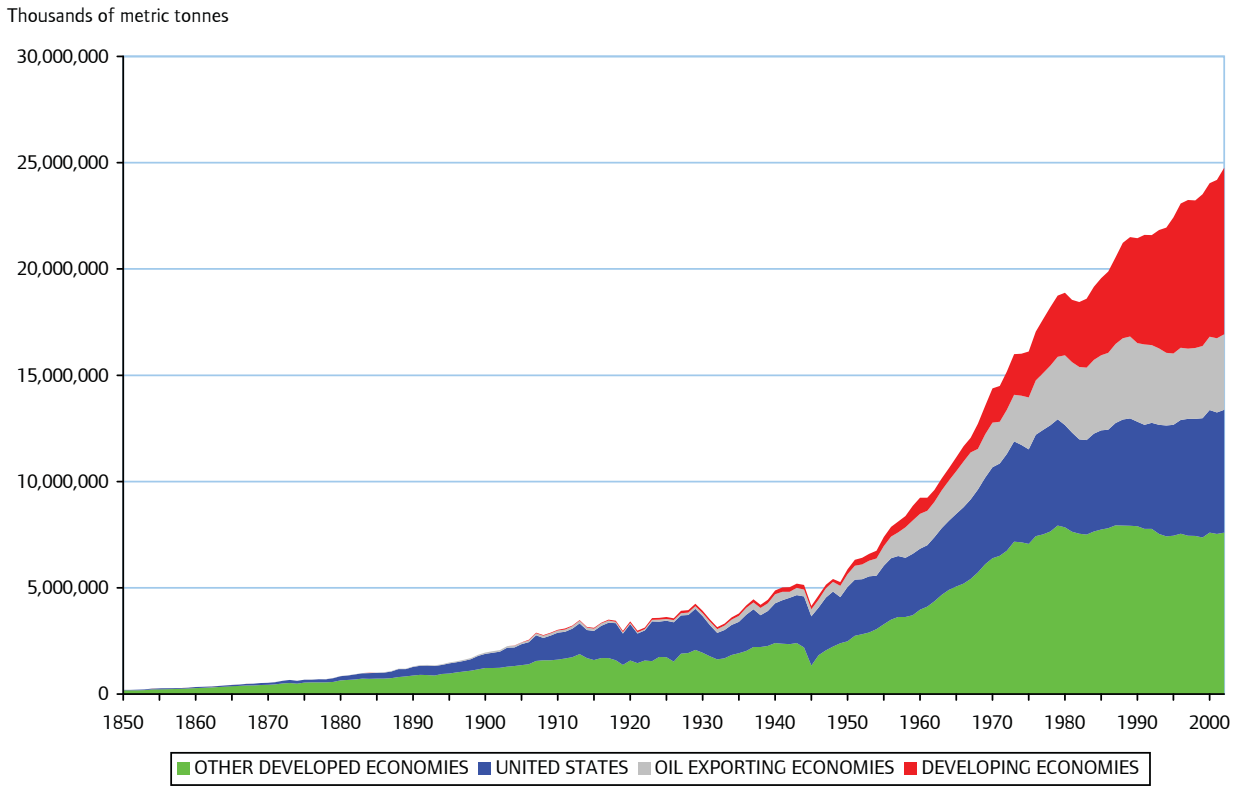
According to scientific authorities, unless significant action is taken, atmospheric levels of greenhouse gases will continue to escalate, causing potentially catastrophic changes in the Earth's climate. In October 2006, the Government released the Stern Review on the economics of climate change. This report argued that, under what was considered a worst case scenario, doing nothing could cost the global economy a fifth of its GDP. In addition, Rajendra Pachauri, the Head of the Intergovernmental Panel on Climate Change, has argued, that the effects of our actions on future changes in the climate have long lead times and this implies that it may already be too late to have a significant impact on the climate of the next 50 years. This suggests that adapting to the level of climate change already likely to occur will be important. Nevertheless, what we do in the next 10 or 20 years with respect to greenhouse gas emissions could still have a significant effect on the climate in the second half of this century and in the next century. The Stern Review suggests that the costs of mitigation – which might be around 2 per cent of GDP per annum[2] – are small relative to the costs and risks of climate change that will be avoided.

The fact that carbon emissions have been higher than would have been socially optimal is a result of the price of carbon being too low or not being included in the production of goods and services in the past. This is the market failure: the social costs of carbon emissions have not been accounted for in the price of carbon and so too much carbon has been (and is being) used in past (and current) economic activity. If the full social costs of carbon were to be incorporated in the production process then prices would adjust to reflect the new, full, costs of carbon and the market would direct businesses and individuals to the most effective use of resources. The problem, therefore, is that there are currently insufficient financial incentives (by way of prices charged for goods and services) for businesses and individuals to take the kinds of action necessary to cut carbon emissions on the scale that is required. Therefore, establishing a price for carbon that captures the full social cost of the production and consumption of carbon, which in turn will motivate individuals and businesses to switch away from high carbon products and services to low carbon alternatives is important.

This means that the most pressing issue is for the international community to set a firm, internationally binding, target to limit the global average temperature rise resulting from climate change to 2°C and so prevent further climate change from this point. With such a limit set, actions to reduce greenhouse gas emissions through establishing a price for carbon through carbon trading markets, raising taxes on carbon emitting products/services or regulating carbon emissions for example should become much easier to implement. However, the difficulties surrounding setting international targets have been highlighted by the Copenhagen Summit in December 2009.

There are a number of serious problems associated with internalising the cost of climate change within the price mechanism in the manner briefly described. For instance, any international agreement needs to account for all countries and also future generations. Climate change does not just affect one or two individuals; it affects everyone on the planet including people who have not yet been born. It is hard to judge how those people will assess the costs of climate change. In addition, there are significant distributional impacts from the mitigation of climate change which can create additional problems in reaching the necessary international agreements. For instance, the likely sources of raised levels of global emissions in the future will be dominated by China (earlier), India (later) and other rapidly growing economies such as Indonesia and Nigeria. Such countries have not benefited as much as other countries from the economic growth derived from past greenhouse gas emissions but are expected to play their part in limiting future emissions. This is shown in Figure 5.1 where the emissions of the developing world are shown in red.

Figure 5.1: CO_2 – total emissions (United States, other developed economies, oil-exporting countries and other developing economies)



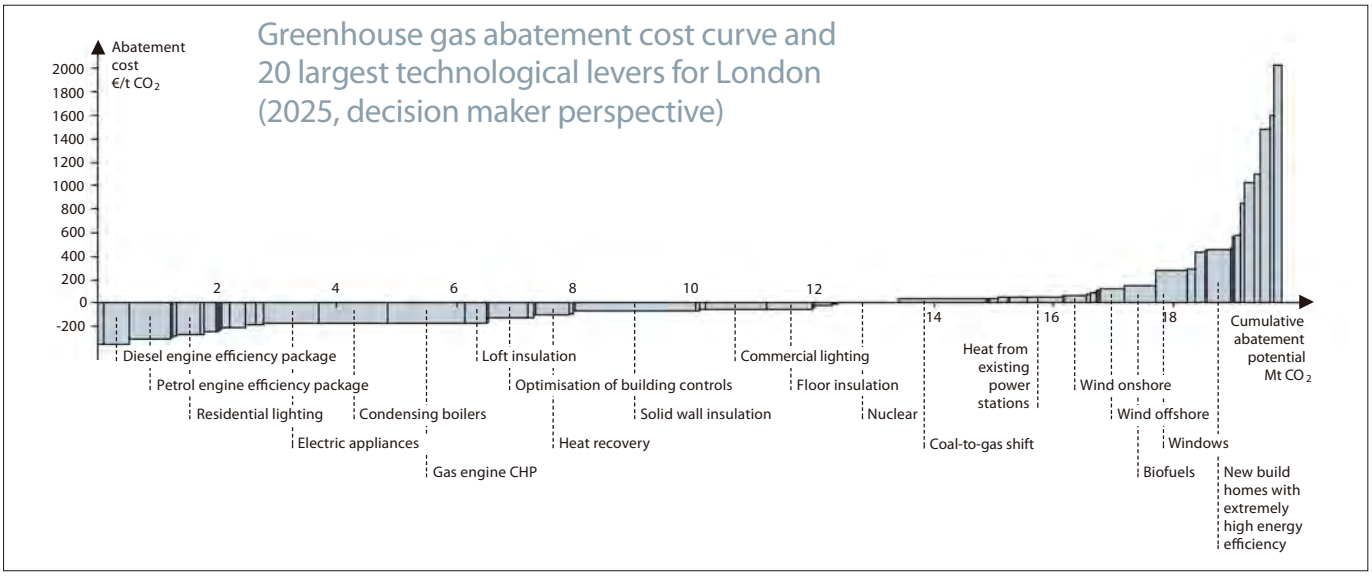
Source: World Resources Institute, Earth Trends, GLA Economics

Note that 'oil exporting economies' here is defined as OPEC members plus Russia, Kazakhstan and Mexico.

In spite of the difficulties in reaching international agreements, it is now widely accepted that carbon – and therefore energy – prices in the future will be higher. This is likely to reflect two things: a decreased supply of energy whilst demand is still rising and including the cost of carbon in the price mechanism. As a result, goods and services – especially those involving a lot of energy – will be more expensive, all other things being equal.

Economic activity needs, therefore, to become more carbon efficient and there are likely to be economic opportunities in this transition. Indeed some options for reducing carbon emissions – such as energy efficient light bulbs and better insulation of buildings – actually save money in the very short term. Such cost-saving measures lie to the left end of the cost abatement curve shown in Figure 5.2 which shows the relative cost of different measures aimed at reducing carbon emissions in a specific London context as well as how much of a carbon reduction each lever might achieve.

Figure 5.2: Greenhouse gases abatement cost curve for London – 2025 decision-maker perspective on 20 largest technological levers.



Source: McKinsey & Co. (2008[3])

London's carbon reduction target and the most economically efficient way of achieving it

London's Climate Change Action Plan[4] sets a target of reducing the capital's emissions of greenhouse gases by 60 per cent on 1990 levels by 2025. This is a far more stringent target than anything set nationally or internationally. For example, the UK's Carbon Budget for the 2018-2022 period aims for a 34 per cent reduction on 1990 levels[5] and the EU's target for 2020 is now a 30 per cent reduction[6]. London's target is in a different league to others though the capital has always been clear that it cannot achieve its ambitions without help from national policy.

In reducing carbon, it makes sense to do things that save money first. The consultancy, McKinsey[7], has identified a range of levers to cut emissions of carbon dioxide that pay back on their initial, up front investment by 2025. This means that, according to this research, almost half of the London reduction target can be achieved at no cost to the economy at all – in fact with a net benefit to the economy. Furthermore, it can be achieved using existing technologies which have the additional benefit that agents do not postpone making a switch simply on the grounds that they are concerned that the technology may not work effectively.

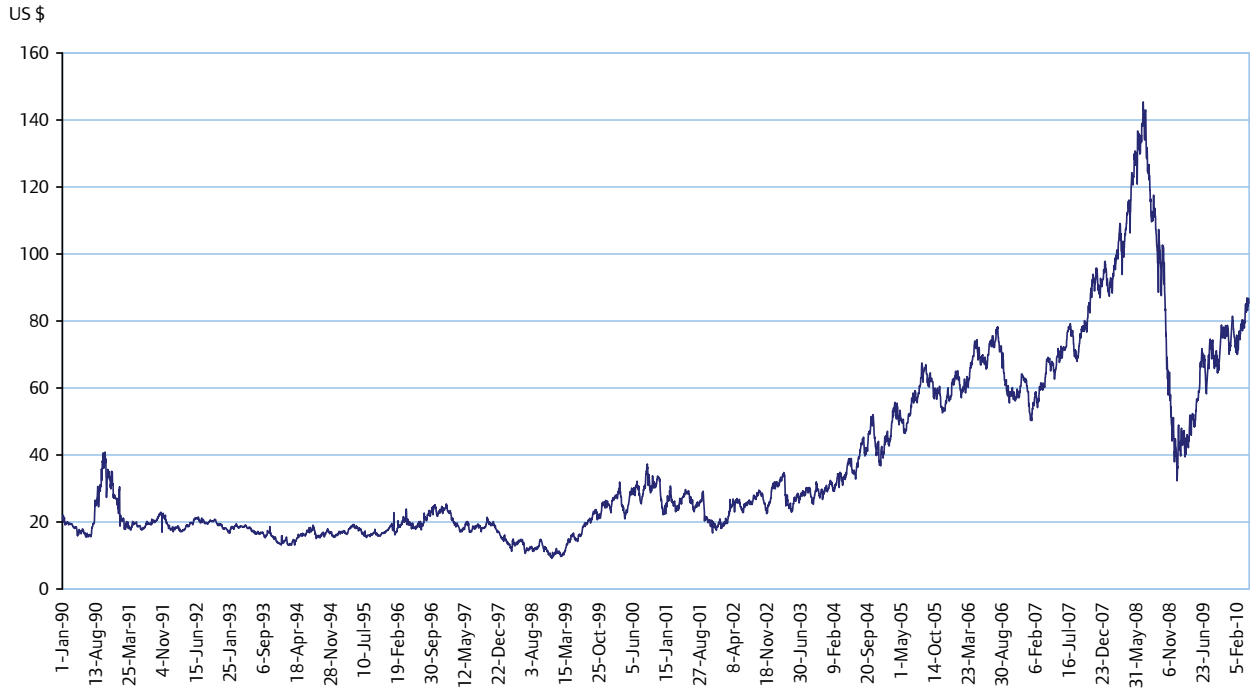
Using all the technological levers outlined in the McKinsey report, London could deliver a 43.7 per cent cut in carbon emissions – equivalent to around 21 Mt CO_2 – which, though significant, is still less than the tough 60 per cent target it has set itself which calls for a reduction of 29 Mt pr annum. As noted above, a good proportion of the reduction identified by McKinsey (around 12 Mt) can be met by making net savings over the time period in question (out to 2025) though there are motivational and institutional obstacles to making these reductions. Furthermore, where additional investment is required without recouping over the period to 2025 (so measures that would be at a net cost to the economy at least by 2025), the amounts of capital expenditure required tend to rise quite steeply. Such levers can be seen at the right hand end of Figure 5.2 (with the width of each column indicating the amount of carbon dioxide that could be abated by that lever). So, it can also be seen that some of the levers that require large amounts of additional investment actually do not abate huge quantities of carbon.

If all the levers identified in the McKinsey report were to be implemented then their analysis suggests that total investment would have to be around €41.5 billion – slightly less than 1 per cent of Gross Value Added of the Greater London economy until 2025.

As noted earlier, using all the technological levers outlined in the McKinsey report would result in London delivering a 43.7 per cent cut in carbon emissions. Going beyond this would require a combination of regulation, behavioural and lifestyle changes. For example, additional taxes on high-carbon goods and services could accelerate reductions in carbon emissions.

It is important to realise that any abatement cost modelling exercise has to incorporate a range of assumptions. In this case there is one particular assumption that requires some further consideration. McKinsey has assumed a relatively stable price of oil based on a barrel of oil being around $60 between 2005 and 2025. Since the report was published oil prices have been very volatile but have tended to be above that level as shown in Figure 5.3. Sustained and long-term higher energy prices would reduce abatement costs but they would not change the carbon abatement potential of the various levers. There are also other effects of high oil prices. Higher fossil fuel prices would encourage people to be thriftier with energy consumption as well as facilitate a potential shift to renewables – something which would help to reduce emissions. However, at the same time, it would also make the extraction of a quantity of the large remaining fossil fuel reserves more economically viable than with a lower price.

Figure 5.3: Brent crude oil barrel price – historic time series



Source: Financial Times / GLA Economics

The McKinsey report provides more detail on the various levers that could be used to reduce London's carbon emissions. Some of those relating to buildings, transport and energy supply are set out in Appendix 2E to this report for more information.

The bigger prize from the low carbon economy for London

Potential opportunities in London from reducing the carbon intensity of economic activity also extend to potentially increased Gross Value Added (GVA) and job creation. Unlocking the low carbon economy in London could drive growth in the market worth £3.8 billion per annum according to work by consultants, Ernst and Young, for the London Development Agency[8].

According to the Ernst & Young report, London is uniquely positioned to reap the full benefits of the transformation to a low carbon economy due to a combination of five drivers:

- Scale: London's size and economic complexity mean that it can deliver low carbon programmes such as Energy from Waste and a decentralised energy network at scale.

- Finance: London is the world's leading financial centre on the Global Financial Centres Index (which is produced by the City of London) and also has a leading position in the provision of finance for clean technologies, particularly through the Alternative Investment Market (AIM).

- Research & development: London has world-class research and development at UCL, King's College, Imperial and the LSE. However, the wider metropolitan area also contains Oxford and Cambridge.

- High-order business services: Law and specialised consultancies are economic specialisations of the capital's economy.

- Trading: London has established itself as the leading centre for carbon trading globally. Although the financial sector as a whole is forecast by many analysts to experience a short-term downturn, the market is still expected to grow over the longer term.

The Mayor's carbon mitigation programme around retrofitting, converting waste to energy and decentralised energy (which also has impacts both on energy security and landfill) is relatively small in the scope of the potential economic prize but could act as a stepping stone in London's journey towards mitigation of climate change. 'Bottom up' research on the Mayor's carbon abatement programme has identified that, under the 'most likely' scenario, 14,000 potential low carbon jobs are required per annum to 2025 for implementation[9].

To this point this chapter has mainly focused on mitigating future climate change. However, as noted earlier some degree of climate change is inevitable. As a result, actions are also required in order to adapt to the changes in climate already embedded in the system.

The climate for the southeast of England is projected to become increasingly warm and wet in winter, and hot and dry in summer throughout the century. This trend will be accompanied by an increase in the frequency and intensity of extreme weather events such as heatwaves, tidal surges, windstorms and heavy rainfall events. Some of this future climate change could be beneficial to London. For instance, whilst London's summers are forecast to become increasingly hot, they may still seem 'pleasant' when compared to the extreme heat of the Mediterranean basin area possibly increasing tourism to London. Additionally, increasing temperatures may on balance be beneficial to Londoners' health. Warmer winters should reduce the number of people dying of winter related illnesses, though more frequent heatwaves will affect the health of people through more poor air quality episodes (mostly affecting those with respiratory problems) and increased cases of food poisoning.

Moreover, unlike cities such as Tokyo and San Francisco, London is unlikely to suffer a major earthquake. Nevertheless, London does face risks from climate change from the following:

- Flooding;
- Overheating; and,
- Drought.

As a result, London ranks ninth in the 'mega-city' exposure rankings undertaken by Munich Re[10] - shown in Table 5.1.

Table 5.1: Exposure of mega-cities to natural risks

Rank	City	Country	City GDP as % of country's GDP (1)	Risk index (2)	Natural Hazards (3)							
					Earthquake	Volcanic eruption	Tropical storm	Winter storm	T'storm/ hail/tornado	Flood	Tsunami	Storm surge
1	Tokyo	Japan	40	710								
2	San Fransisco Bay	USA	<5	167								
3	Los Angeles	USA	<10	100								
4	Osaka, Kobe, Kyoto	Japan	20	92								
5	Miami	USA	<5	45								
6	New York	USA	<10	42								
7	Hong Kong	China	10	41								
8	Manila, Quezon	Philippines	30	31								
9	**London**	**UK**	**15[a]**	**30[a]**								
10	Paris	France	30	25								

Risk Key :
High, Medium, Low, None

Sources:
1 Statistical authorities, various websites
2 Munich Re, 2004
3 Munich Re, Topics 2002
[a] GLA DMAG estimates

Source: Munich Re (2004) cited in London Climate Change Adaptation Strategy (GLA, 2008)

Flooding

Nearly 15 per cent of London is at risk of flooding and this includes many parts of Central London near the Thames and its tributaries. Indeed, 481,000 properties in London are within the potential flood zone including 100,000 which fail to meet criteria for insurance against floods. At present London does benefit from a strong system of flood defences but the risks are increasing on account of construction in the Thames Gateway and the loss of green space in the capital and upstream in the Thames Valley. The Environment Agency estimates that the Thames Tidal Defences protect some 1.25 million people and over £80 billion of property, 35 Underground stations, 51 railway stations, 400 schools, 16 hospitals and 8 power stations.

Flooding on the TfL network as a result of poor drainage, particularly where drains are badly maintained, can lead to congestion, disruption and damage to infrastructure. It is predicted that both the frequency and magnitude of flooding will increase due to climate change. TfL's main objective in this area is to target investment to reduce flood risk sites.

Overheating

Overheating refers to the point where temperatures rise so much that they affect the health and comfort of Londoners. Prolonged high temperatures can cause an increase in heat-related discomfort, illness and death (though, as noted earlier, this is off-set to an extent by a decrease in the number of people dying from winter related illnesses), an increase in demand for cooling (leading to more demand for power), an increased demand for limited water resources (increasing the risk of drought – see below) and damage to temperature-sensitive infrastructure (such as electrical equipment and transport networks).

This impact is accentuated in urban areas due to the "Urban Heat Island" effect[11]. The urban heat island is caused by the ability of urban materials that make up the buildings, roads and pavements to absorb heat

from the sun, which is then radiated at night, preventing the city from cooling off as quickly as rural areas. During hot weather this can make the centre of London significantly hotter at night than the countryside.

Climate change is projected to increase average summer temperatures by the middle of the century, when two out of three summers may be as hot as the 2003 heatwave. The urban heat island effect will also intensify as a result of future climate change. For instance, there are feedback loops from air conditioning systems to the urban heat island effect: the hotter it gets, the more air conditioning is used and the more heat is expelled into the outside environment. Continued Central London agglomeration will also exacerbate the urban heat island effect.

Public transport infrastructure will not just become more unpleasant to travel on as a result of overheating but many of its operating systems will be affected. With the planned London Underground capacity improvements, more trains will mean more heat and parts of the Tube will become even hotter. On the sub-surface lines, like the District and Circle, TfL is introducing air conditioning, with new trains arriving from 2010 onwards delivering significant benefits. However, on the deeper lines, TfL cannot introduce conventional air conditioning because there are not enough air passages to the surface to allow warm air to escape. As a result, TfL is investigating more innovative solutions[12].

Drought

Just because London is at risk of flooding in the future does not mean that the city is not at risk from drought as well. The large population living in the south east of England, combined with the relatively low rainfall means that the Thames region has less water per person than many hotter, drier countries such as Morocco.

Climate change will result in wetter winters with a greater proportion of rain running off into the rivers, rather than being absorbed into the ground where it can contribute to future years' supplies. Hotter summers will increase the amount of water lost to evaporation. Hotter, drier summers will see demand for water increase from people and wildlife, while warmer winters may mean a longer growing season, increasing demand from plants and so reducing the winter recharge period for groundwaters.

Chapter 6: Risks to London's attractiveness to business and people

London faces a number of challenges if it is to maintain its position as a leading global centre over the next 20 years. To some extent, these challenges are the result of London's success in attracting both businesses and people. For example, more people and businesses in the city tend to place a strain on public amenities and lead to higher demand and congestion which tends to drive up prices for goods and services.

The challenges London faces, like congestion and higher costs for example, are common to all global cities. However, it is important that factors that could reduce the attractiveness of London to businesses and people, such as changes to tax or regulatory policy or reductions in the quality of life for example, are managed as effectively as possible.

In this chapter the risks to London's business environment, including some of the implications of the recent financial crisis and the corresponding assistance package provided to the financial sector in the UK are considered. Other risks to the competitiveness of London's business environment including the risks of not maintaining sufficient skilled migration and not maintaining a good quality transport network are then considered. Finally, the chapter considers a number of factors that could potentially impact on the quality of life people experience when living in London, and so impact on the attractiveness of London to people.

Risks to London's business environment

A number of recent reviews of both London and the UK business environment have noted concerns about trends in tax policy and regulation, and the implications for the international competitiveness of London's business environment[1]. The primary concern is that greater uncertainty surrounding changes to taxation arrangements in the UK as well as the introduction of more regulation on businesses reduces the attractiveness of London relative to other cities.

Concerns about London's international competitiveness have been increased by the recent global financial crisis (see Box 6.1). In particular, the cost of the financial assistance package to the banking sector, combined with the impact of higher welfare payments and lower tax revenues that occur during a recession, will place a considerable strain on the UK's capacity to maintain an internationally competitive taxation environment for businesses, and additionally limit the UK's capacity to invest in public infrastructure.

Box 6.1: The global financial crisis 2007-2009

Over the past decade, low interest rates had two significant consequences, they helped drive rapid growth in credit-based consumption — particularly property market speculation — and drove investors to seek out products which could provide higher yields. At the same time, the financial sector introduced innovative products based on 'slicing and dicing' securitised credit. This explosion in the use of these complex debt products drove big increases in the leverage (debt levels) of major financial institutions around the world, but particularly in the US and UK.

As interest rates in the United States began to rise, the returns on some of these complex debt products began to falter, and by mid 2007, investors started to lose confidence in the value of securitised debt products. Initially, few appreciated the extent to which international financial institutions had exposed their balance sheets to these products, nor how 'toxic' some of the assets were. However, as financial institutions in the US began to struggle and collapse, it became evident that many financial institutions around the world were at risk of collapse in mid to late 2008.

To prevent the significant economic and social consequences that would result from the collapse of their financial sectors, governments commenced implementing financial support packages intended to stabilise their banking sectors.

In the UK, the Government's total investment in the banking sector will be substantial. The Government has effectively nationalised three banks through providing loans and taking equity. In addition, there is the cost of protecting bank deposits and the potential significant cost from the Asset Protection Scheme[2].

In a comprehensive review of the UK financial market regulation[3], Lord Turner, chairman of the Financial Services Authority, has recommended a range of measures which will:

- ensure greater regulation and supervision of system-wide "macro-prudential" issues rather than a sole focus on specific firms;
- tighten controls and oversight of banking and 'shadow banking' activities; and
- provide greater monitoring and oversight of cross-border banking arrangements in Europe.

Source: GLA Economics based on information from FSA and HM Treasury

Financial market regulation

The UK's 'light touch', risk-based approach to financial market regulation has been cited as an important driver of London's position as a global financial centre. However, this approach has ultimately proved ineffective and permitted excessive growth in the level of risk within the sector, resulting in the near collapse of the banking sector recently[4]. There is a risk that, as a result, financial market regulation becomes disproportionate, which could potentially diminish the attractiveness of London as a location for financial services firms.

It is difficult to determine the extent to which increased financial market regulation might impact on the growth of London's financial sector. It is possible that stricter regulatory oversight could lead some firms to consider moving some of their operations to other countries, particularly as some countries are trying to increase their global market share of financial services. For example, Switzerland is trying to attract an increased share of the hedge funds and private wealth management markets.

However, there are a number of factors that mitigate the risk that London could lose a significant share of its financial services market due solely to stricter oversight of the sector. As described in Chapter 3, regulation is only one of the many reasons why firms choose to locate in London. All other things being equal, London will continue to provide companies with a highly skilled labour force, access to markets, excellent auxiliary services (such as access to world class legal firms) and many of the other factors set out in Chapter 3. Moreover, many of the reforms put forward by Lord Turner, for instance, require international agreements; this should minimise the likelihood that UK regulations will become more onerous than those elsewhere. Finally, there could be branding benefits for firms if they are viewed as submitting themselves to strict regulatory standards.

Initial evidence from the GFCI[5] suggests that although the financial crisis has had a negative impact on both London and New York as financial centres, both centres maintain an advantage over other locations. This could be because firms see the greater size and depth of these markets as providing greater security. Indeed, smaller centres, such as Dubai and Dublin have, at least in the short term, suffered greater falls in their perceived attractiveness.

Reduced economic competitiveness

In general, the factors that make London's business environment attractive to financial sector firms have also allowed firms in other sectors to flourish in London. In particular, competitive corporate and labour tax rates and business friendly regulations have benefited all firms that locate in London.

As noted in Chapter 3, London (and the UK) has traditionally provided businesses with a competitive tax environment. In particular the tax wedge and average effective corporate tax rate have been lower in the UK than in most other OECD and similar sized EU countries. Offering competitive tax rates has potentially provided firms with an offset to some of the other business costs (wages, rents and other inputs) which are higher in London compared to other cities.

In recent years, some of London's tax competitiveness has been eroded as other countries have endeavoured to reduce their tax burdens. Jeffery Owens (OECD, Director, Centre for Tax Policy Administration)[6] contends that there was little need for the UK to cut existing tax rates to remain internationally competitive. However, this analysis was conducted prior to the 2009 Budget. In the subsequent Budgets (and Pre-Budget), the top rate for personal income tax has been increased to 50 per cent from April 2010. In addition, the level of tax relief on pension contributions for those earning over £100,000 has been reduced and a one-off payroll tax to discretionary bonuses of more than £25,000 on bank's bonus pools has been introduced. A global tax on bank transactions has also been proposed. As a result, the UK's tax competitiveness has reduced with the overall tax burden increasing and the main corporate tax rate being less competitive than it once was[7].

A significant concern that businesses have with taxes in the UK concerns the changes in the approach to tax design and enforcement in recent years. A CRA International[8] report for the City of London Corporation notes that, in general UK tax rates were not stifling business investment decisions in the financial sector (although there could be some negative impacts at the margin). However, businesses were concerned about the manner in which tax reforms were being implemented, particularly the lack of consultation. In addition, businesses felt that the HM Customs and Revenue Office often adopted a combative approach to settling disputes.

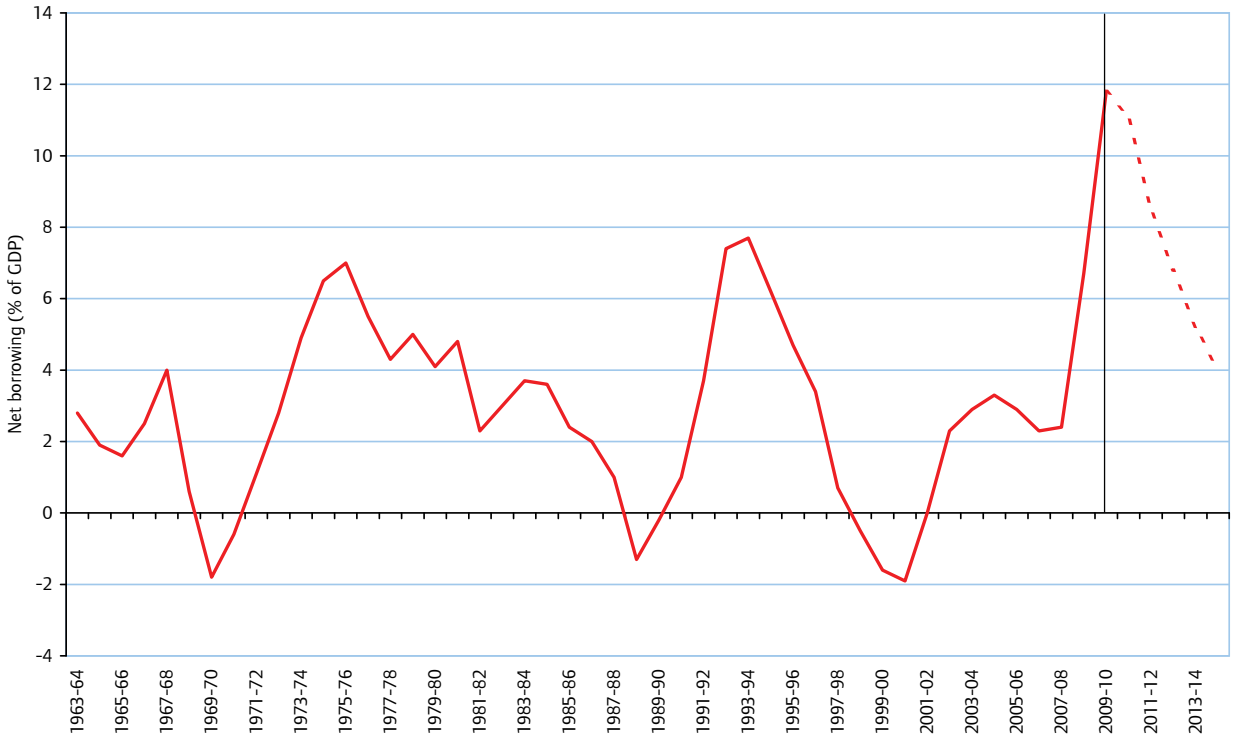
However, according to Cushman and Wakefield[9] when surveying 500 companies only one in ten UK based companies considered national tax policy as an 'absolute essential' factor that influenced their decision when choosing a location for their business. Nevertheless, a number of high profile multinationals have moved their headquarters from the UK to overseas over the last 2-3 years due to increases in tax demands. These

include WPP to Ireland, McDonald's to Switzerland, Cisco to Belgium and Microsoft to Luxembourg. Cushman and Wakefield reported that a further 18 hedge funds are currently contemplating relocating from the UK to overseas locations.

The impact on public finances from the current economic downturn and the assistance package to the UK financial sector could also have a detrimental impact on the international competitiveness of the UK's tax position.

As noted in Box 6.1, the costs to the Government of stabilising the banking sector will be substantial. The decline in tax revenues and increases in public expenditure requirements (e.g. unemployment benefits) as a result of the economic downturn are impacting significantly on the UK's budget deficit. Figure 6.1 shows that the level of public sector net borrowing is currently projected to increase to 11.8 per cent of GDP in 2009-10 and 11.1 per cent of GDP in 2010-11. This level of deficit exceeds – by some margin - the previous post WWII highs of 7.7 per cent set in the mid 1990s, with research undertaken by the European Commission showing that in 2009 the UK had a "sustainability gap" in its budget that would require adjustment[10]. Further, research undertaken by the Institute for Fiscal Studies indicates that in order to return public finances to balance by 2016-17 the government will need to raise their fiscal tightening to 4.8 per cent of national income (£67 billion), with 30 per cent of this tightening having yet to be announced[11].

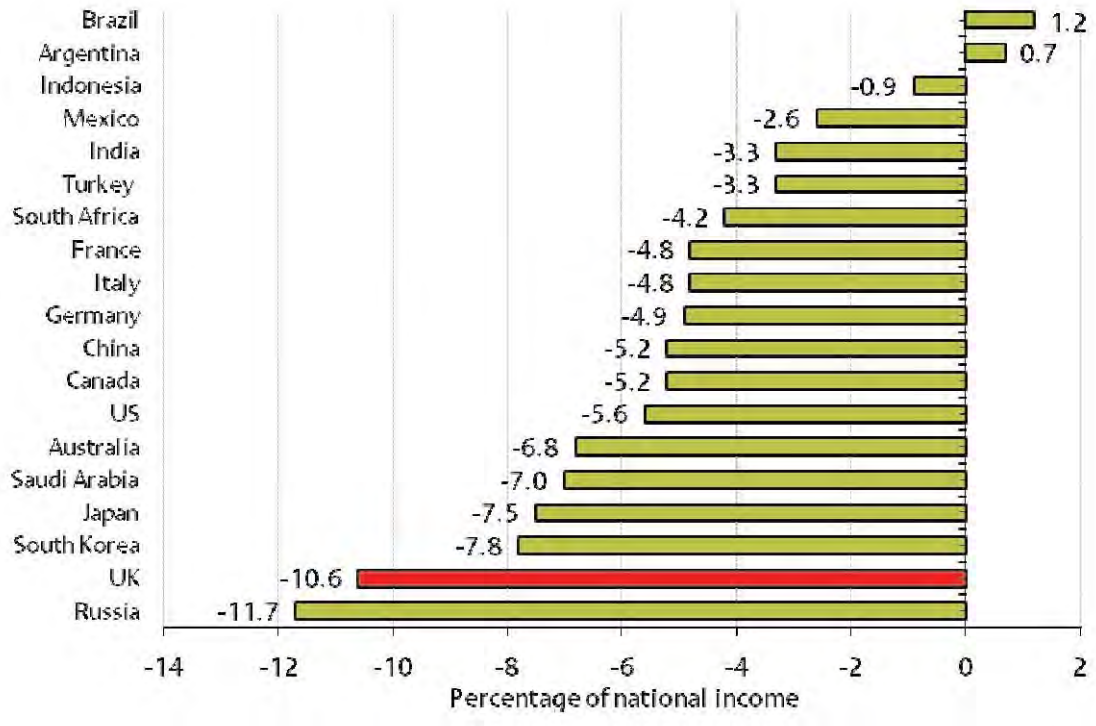
Figure 6.1: UK Public Sector Borrowing Requirement over time



Source: GLA Economics based on data in the 2010 Budget Report

The IMF expects the UK to record the second biggest overall increase compared to the other G20 countries in government borrowing from pre-crisis levels after Russia[12].

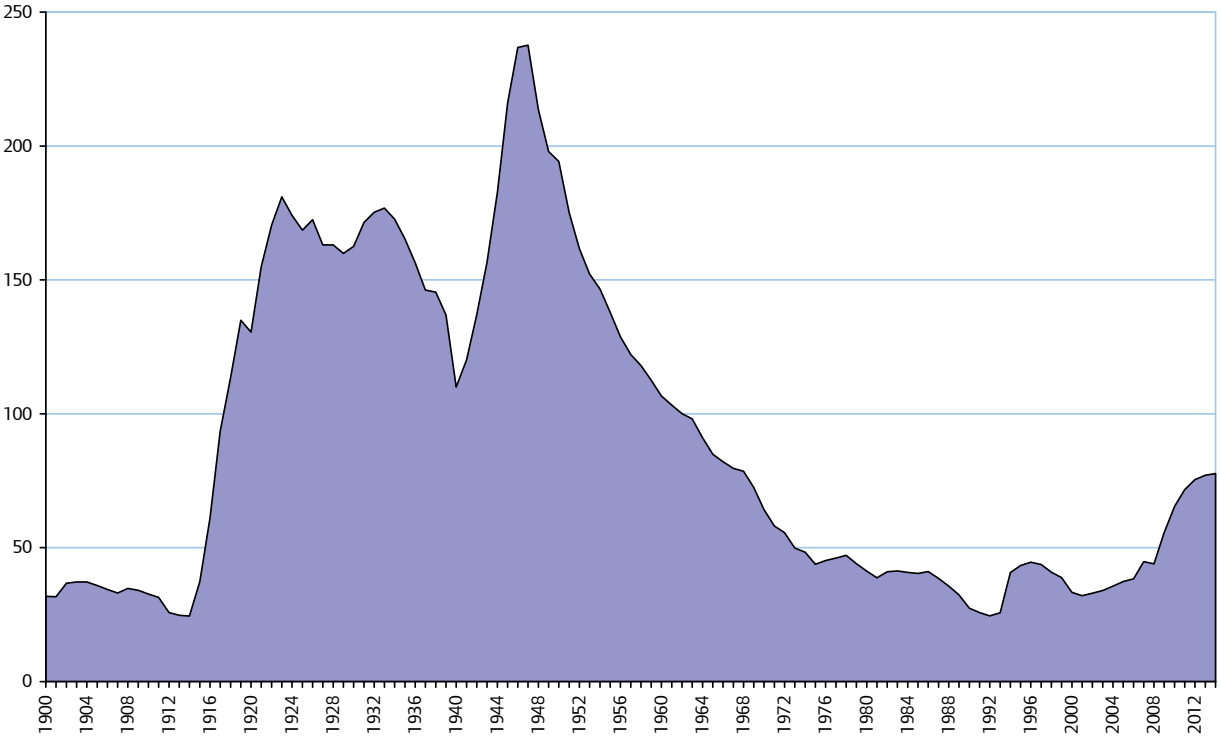
Figure 6.2: Change in overall budget balance: 2007 to 2010



Source: Appendix Table 2, Page 30 of M. Horton, M. Kumar, and P. Mauro, The State of Public Finances: A Cross-Country Fiscal Monitor, July 30th 2009, Washington: International Monetary Fund (www.imf.org/external/pubs/ft/spn/2009/spn0921.pdf).

As a result of these deficits, the level of public sector net debt as a proportion of GDP will almost double as shown in Figure 6.3[13].

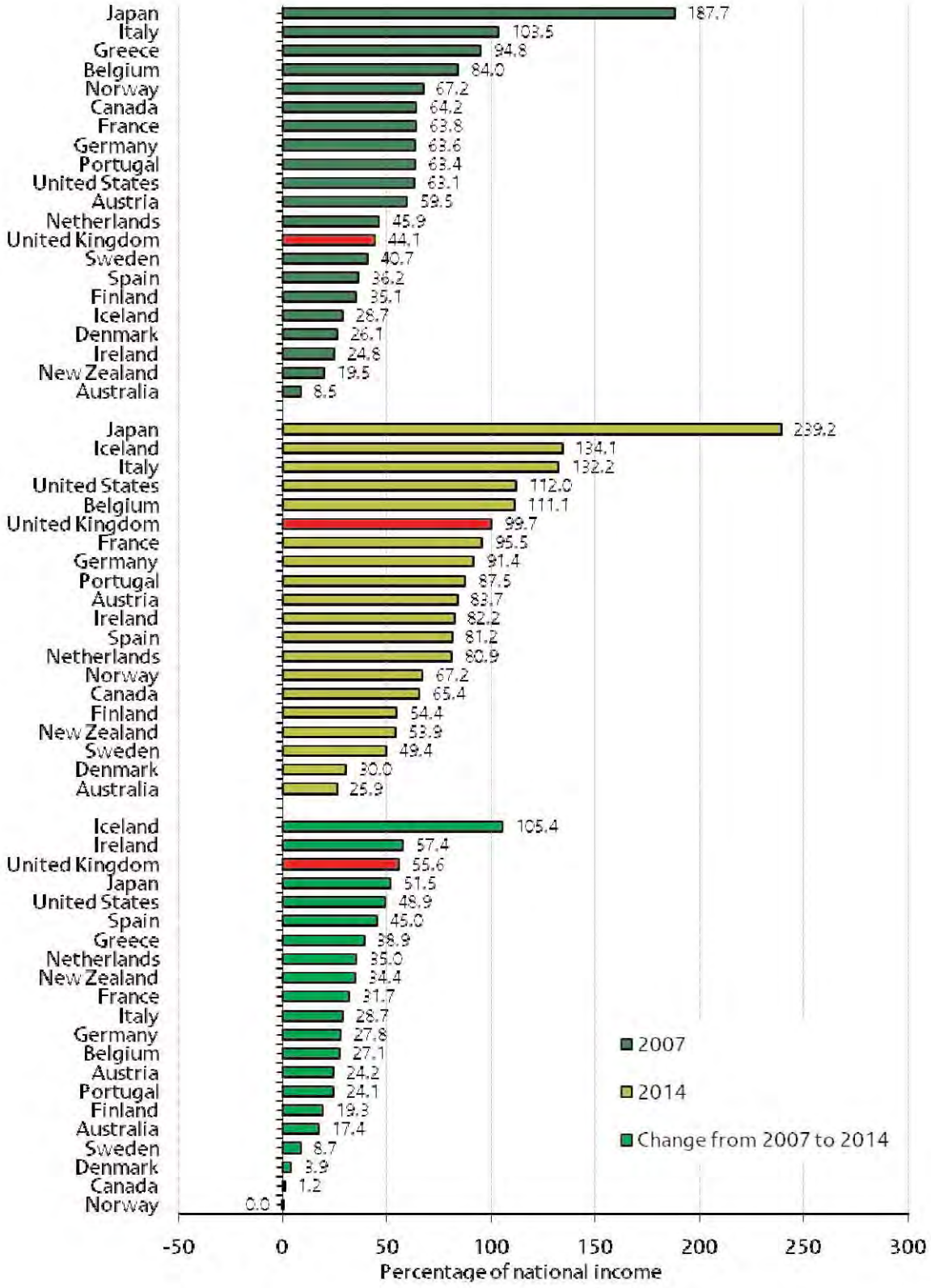
Figure 6.3: Public Sector Net Debt in the UK (% of GDP)



Source: UKPublicSpending.co.uk (PESA data) and Budget 2010

Figure 6.4 illustrates that the UK's fiscal position is expected to worsen to a greater degree than any other G20 country between 2007 and 2014 putting the UK and London in a relatively worse position with regard to its tax competitiveness in the future[14].

Figure 6.4: IMF forecasts for general government debt among industrial countries



Source: International Monetary Fund, World Economic Outlook database (April 2009), and M. Horton, M. Kumar, and P. Mauro, The State of Public Finances: A Cross-Country Fiscal Monitor, July 30th 2009, Washington: International Monetary Fund

This rapid deterioration in public finances strongly suggests that a mix of tax increases and spending/investment cuts will be necessary to, at least, stabilise the level of public debt (as a proportion of GDP). This will also be necessary if the UK is to avoid a deterioration in the standing of its public debt in the international financial markets. Without a clear plan for addressing the fiscal problems currently faced, financial markets may become concerned about the UK's ability to service its debt. Such concerns could manifest themselves in a downgrading of UK debt which would put upward pressure on the UK's long-term interest rates – putting a further strain on public finances and acting to subdue economic activity in the rest of the economy.

As discussed in Chapter 3, it will be important that consideration is given to the likely implications for business and investment in the UK of raising different taxes. The OECD[15] found that increasing taxes on both profits and wages (such as income taxes and NI contributions) can have a significant negative impact on foreign investment decisions[16].

As a result, the UK (and therefore London) will find it difficult to maintain its international tax competitiveness position relative to other countries over the coming years. The UK is fortunate to have some scope to increase taxes before they reach similar levels to those faced in other similar sized European countries. Net debt of around 75 per cent of GDP is in line with many other large European countries, such as France and Germany (who themselves are experiencing significant strains on public finances as a result of the economic downturn and financial crisis, which will increase their net debt figures further). Nevertheless, the evidence at the moment would seem to suggest that the UK's public finances are set to worsen to a greater extent than most other developed countries in the next few years, therefore putting a strain on the UK's relative international tax position[17].

Public spending and investment

The UK's ability to spend on services and invest in capital projects is also likely to diminish in the coming years as a result of the deterioration in public finances. Spending on education, healthcare, public transport, housing, public security and various other services help underpin the business environment. In particular, health, education and transport spending are important to business because they improve the quality and quantity of London's labour force.

The Budget 2010 Report states that from 2011-12 to 2014-15, public spending is forecast to grow at 0.8 per cent in real terms. This compares to growth of 3.3 per cent per year in real terms for the ten years between 1997-98 and 2007-08. In addition, the Budget Report also reduced the level of future public investment, with investment expected to fall by an average of nearly 15 per cent per year in real terms over 2011-12 to 2014-15[18]. This is significant because large-scale public investment can often be important for increasing the productive capacity of the city (through transport improvements for example).

Higher costs of doing business

Although higher wages make London an attractive place for highly skilled workers, higher staffing costs can be a deterrent for businesses considering where to locate or expand their operations. As previously noted, wages in London are amongst the highest in the world[19]. Similarly, Cushman and Wakefield[20] consistently rank London's staffing costs as amongst the highest of the European cities it compares.

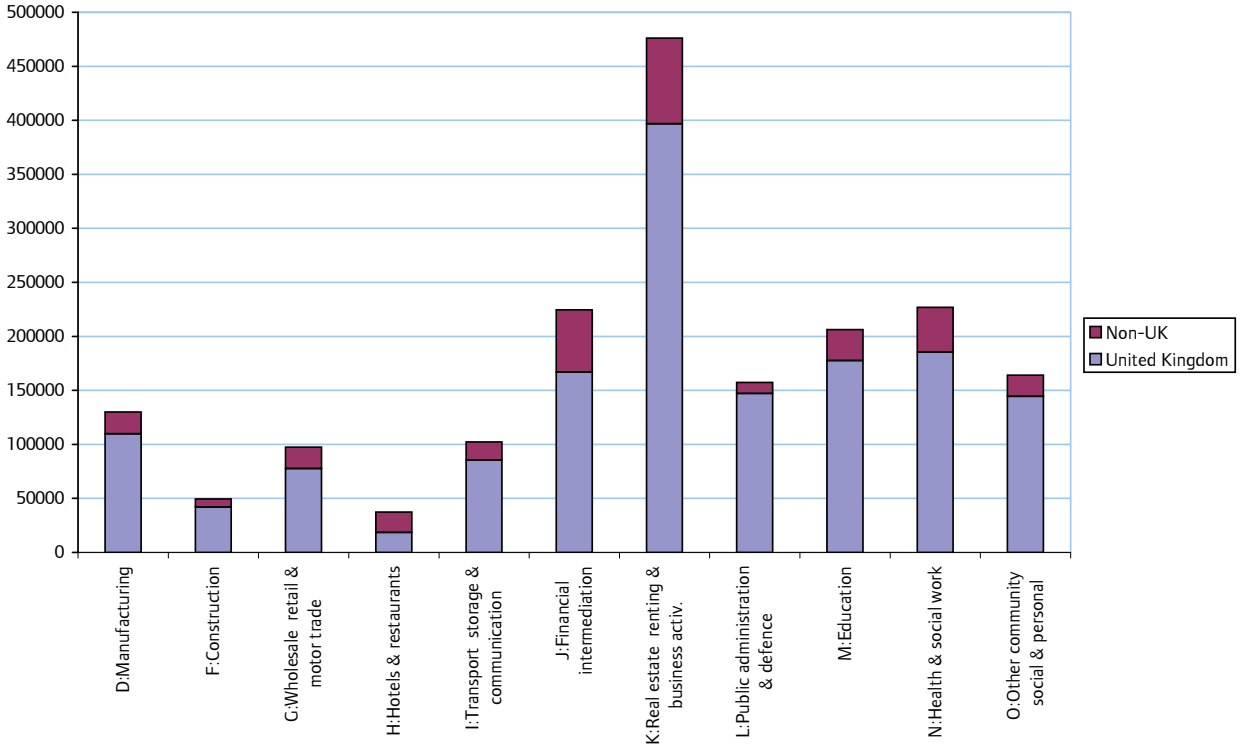
Renting office space is also a significant cost for businesses. London has traditionally been one of the most expensive cities in the world for renting office space. Despite the recent economic downturn, office space in London's West End is still the second most expensive office space in the world[21]. Office rents in other parts of Central London, although significantly below the rates for the West End, are ranked as the fourth highest in Europe (behind the Central Business Districts (CBDs) of Moscow and Paris)[22].

In the short term, the fall in the pound relative to other currencies could reduce the costs of doing business in London for some multinational firms. However, it is less clear that in the medium to long term London will become a cheaper place to do business compared to other global cities.

Reduction in international migration?

One of London's most attractive features for business is the depth of its highly skilled labour market. Currently, around 46 per cent of those working in London hold a degree level qualification, and the demand for people with such skills is forecast to increase. The financial and business service sectors (financial intermediation, and real estate and renting) account for most of the employment of workers with degree level qualifications or higher. These sectors, along with the health and social work sectors also account for much of the employment of foreign nationals in London (see Figure 6.5).

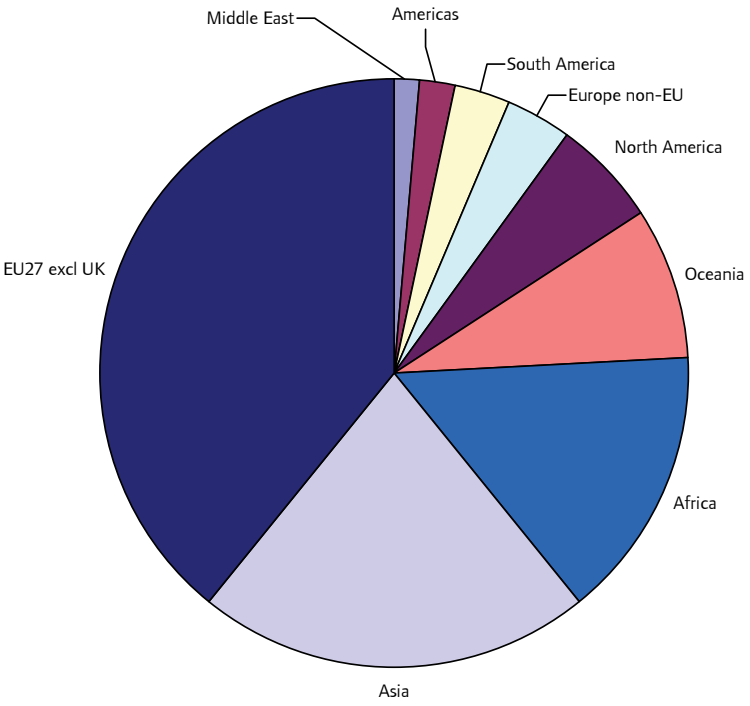
Figure 6.5: Level 4+ London workers by industry and nationality 2008



Source: APS, 2008 (ONS Crown copyright)

In London, 80 per cent of employed workers with a degree are UK nationals. Of the remaining 20 per cent of degree holders employed in London, almost two-thirds are non EU nationals (see Figure 6.6). The majority of these workers come from India, Australia, South Africa, Nigeria and the USA.

Figure 6.6: London's non-UK national workers with NVQ level 4 or above qualifications, 2008



Source: APS, 2008 (ONS Crown copyright)

The UK has traditionally maintained a relatively open door policy towards international migrant workers, particularly in comparison to other EU countries. For example, the UK was one of the few EU-15 countries that permitted free entry of EU Accession country workers in 2004.

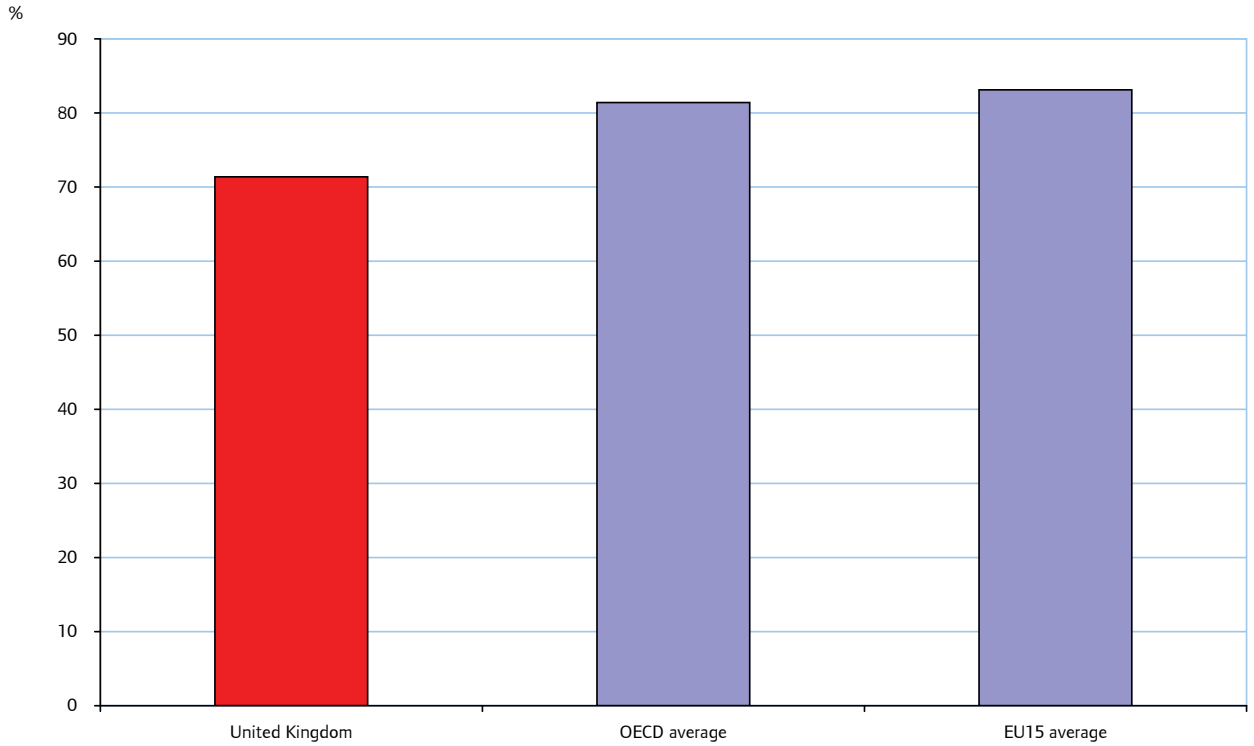
More recently, the UK has introduced a points based system for those wishing to emigrate from non-EU member states. This was viewed as a method of simplifying the immigration system as well as giving greater capacity to target the types of skills that the country needs. The UK also decided to toughen up the existing resident labour market test for employers and tighten the criteria for highly skilled migrants by raising the qualifications and salary level needed to enter the UK.

In addition, the UK has also changed tax arrangements for the treatment of resident non-domiciles[23]. At the same time, personal income tax rates for high income earners are increasing, and the international competitiveness of wages is falling due to the fall in the pound.

These changes appear to fall on a small but significant proportion of London's highly skilled workforce. The impact of these changes is difficult to measure. This is because London is likely to continue to attract migrants (both skilled and unskilled) in the short and longer term, and visa eligibility criteria can be changed relatively quickly. However, the change in attitude and less favourable economic conditions could well encourage some of the more highly skilled and productive migrants to either stay in their home country or select other countries as their preferred destination. Moreover, the impact of discouraging other migrants from non-EU countries could be more pronounced, in the short term at least, if skilled migrants from EU nations also start choosing locations other than London as lower exchange rates and higher taxes make London a less desirable location.

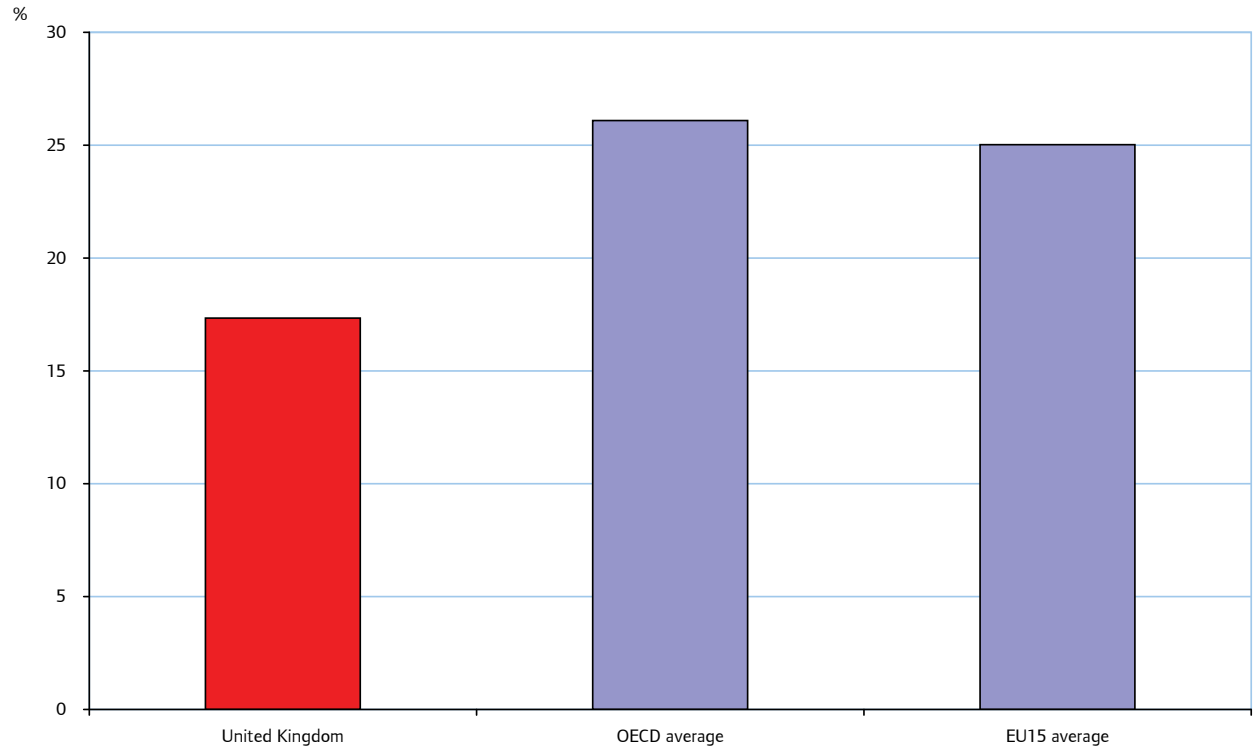
When compared to other OECD countries[24] the UK has a lower percentage of 15-19 year olds in education as well as lower rates for education participation for 20-29 year olds (see Figure 6.7 and Figure 6.8). The UK, Turkey, Mexico and Luxembourg were found to be the countries with the lowest percentage of young people in education of all OECD countries. If this situation persists it is likely that the UK, and London's economy in particular, will become more reliant on highly skilled migrants in the future.

Figure 6.7: 15-19 year olds participation in education as a percentage of the population aged 15 to 19



Source: OECD 2009

Figure 6.8: 20-29 year olds participation in education as a percentage of the population aged 20 to 29



Source: OECD 2009

Transport infrastructure, crowding and congestion

Transport congestion, crowding and delays are consistently identified as a concern for London residents and businesses[25]. A certain amount of congestion can be expected in a large city as, like higher land prices, it is evidence of higher demand and significant economic activity and shows that major investments are used very intensively[26]. However, London suffers from significant crowding problems, both on its roads and its public transport network.

There is overcrowding on the Underground and National Rail lines (see Figures 6.9 and 6.12)[27]. Crowding can impact on economic growth because sustained delays on the transport network increase costs for business and discourage further investment. In particular overcrowding and delays can make coming into London less attractive to employees and potential customers. Research using data over a 20-year period found a negative relationship between crowding and the level of passenger growth[28]. A part of the argument for Crossrail was that existing levels of crowding on the tube and rail network would restrict future growth of Central London; Crossrail also helps agglomeration.

A review of the UK's private sector business attitudes[29] found that transport was perceived to impact upon business decisions and that rail transport may increase in importance in the future due to its advantages of easy access to city centres, being less stressful than driving and the ability to work on trains. Dissatisfaction with fare prices, punctuality and the availability of parking at stations was of concern.

Much has been done recently to improve London's transport system after several decades of underfunding. The investment in London's transport system, set out in TfL's Business Plan, will offset the impact on crowding of demand growth as a result of population growth, and the expected increase in jobs over the next decade, and also reduce crowding from current levels.

This investment will increase AM peak public transport capacity by over 30 per cent from 2006 levels by 2020. This includes Crossrail, a major new east-west railway, which alone will increase London's rail-based network by 10 per cent when it opens in 2017. Other committed improvements to the national rail network, including the Thameslink programme, will increase capacity between now and 2014. The ongoing works to the Underground will increase the Tube's capacity by an additional 30 per cent.

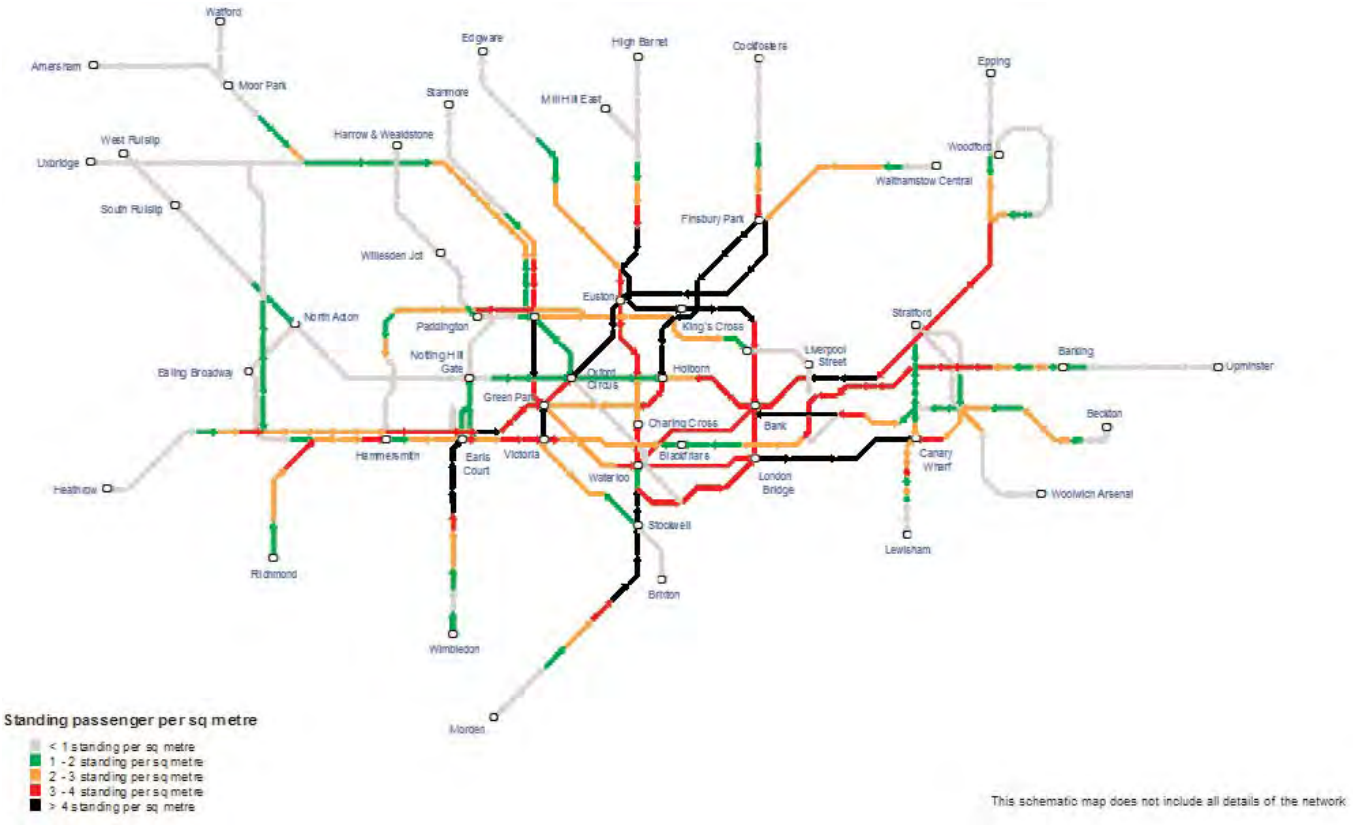
These improvements will relieve crowding, but even with such investment crowding is still likely to exist on parts of the Underground and Rail network (see Figures 6.10 and 6.13). Figures 6.10 and 6.13 look out to 2031 and are for MTS "reference case" – effectively the committed and funded investment only. Figures 6.11 and 6.14 "MTS Implementation Plan" include the impact of the package set out in the Mayor's Transport Strategy.

Crowding on some links improves. On others, it worsens when the effect of demand growth (from higher population and employment) to 2031 is greater than the effect of committed and funded investment. Overall crowding (measured as the percentage of Tube/rail passenger km in the morning peak that are in excess of "Passenger Guideline Capacity") will fall between now and 2018 as a result of these investments, even after the effect of demand growth. However, crowding would then rise, as a result of demand growth, in the absence of further measures. Therefore, in spite of committed investments, if further measures (as set out in the Mayor's Transport Strategy, and underlying Figures 6.11 and 6.14) are not taken beyond the end of the business plan in 2018, crowding on public transport would then start to grow once more (as a result of the growth in demand resulting from more population and jobs). This would have a negative effect on the overall productivity of London's economy and, in turn, the UK national economy.

Figure 6.9: London Underground and DLR crowding, morning peak 2006

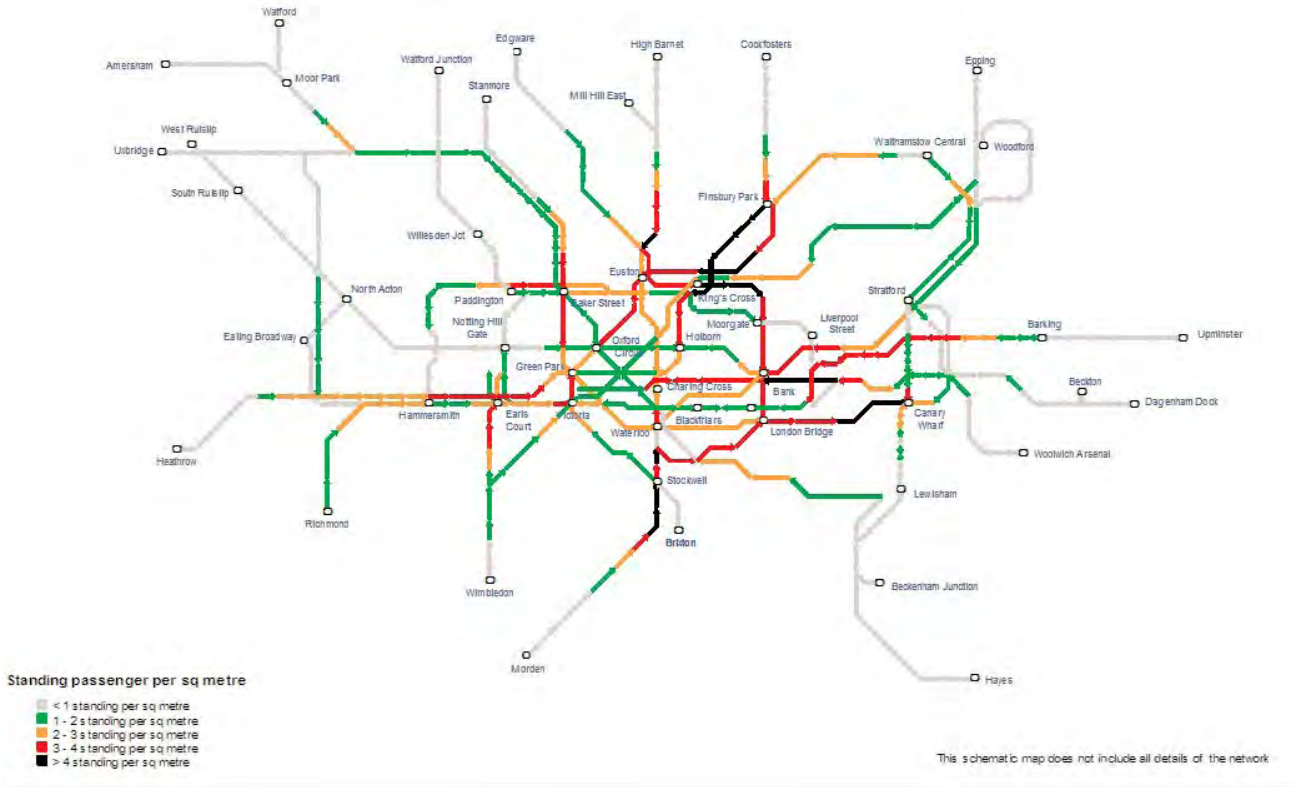
Source: TfL 2010

Figure 6.10: London Underground and DLR crowding, morning peak 2031 – Reference Case



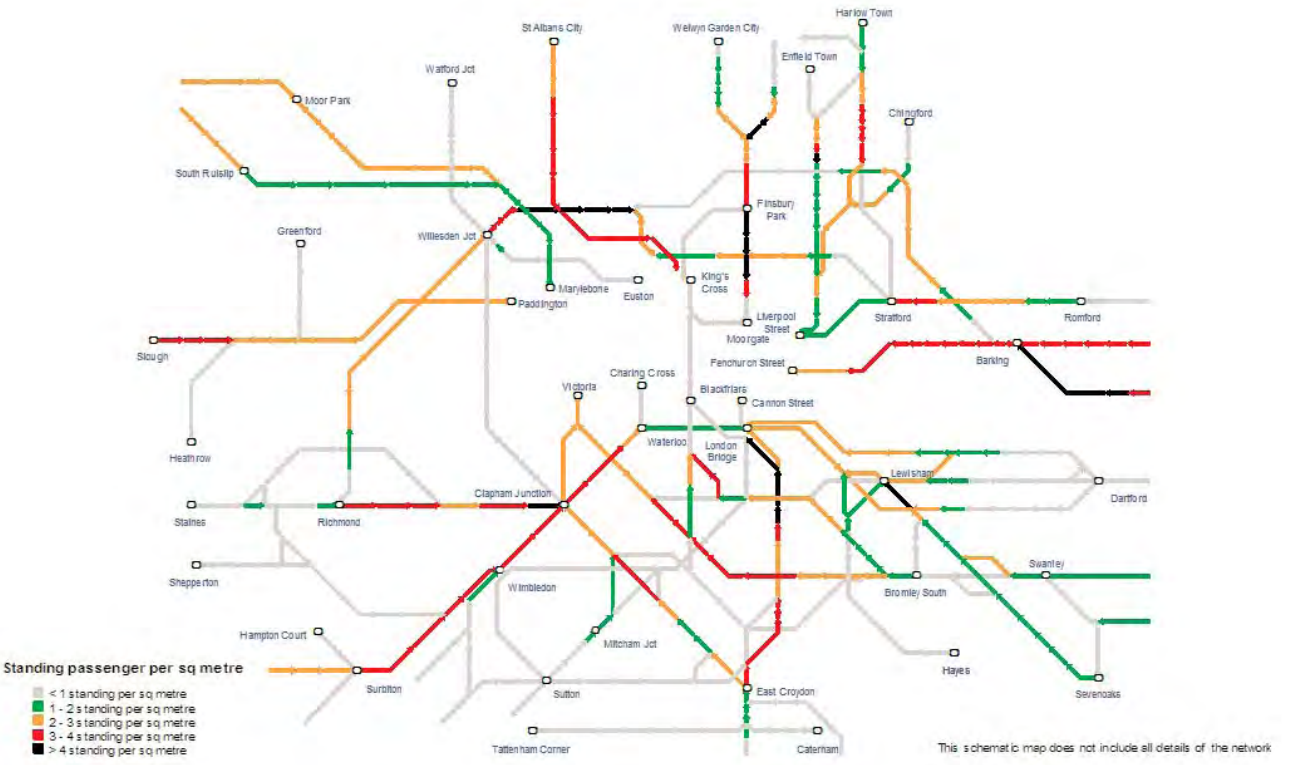
Source: TfL 2010

Figure 6.11: London Underground and DLR crowding, morning peak 2031 – MTS Implementation Plan



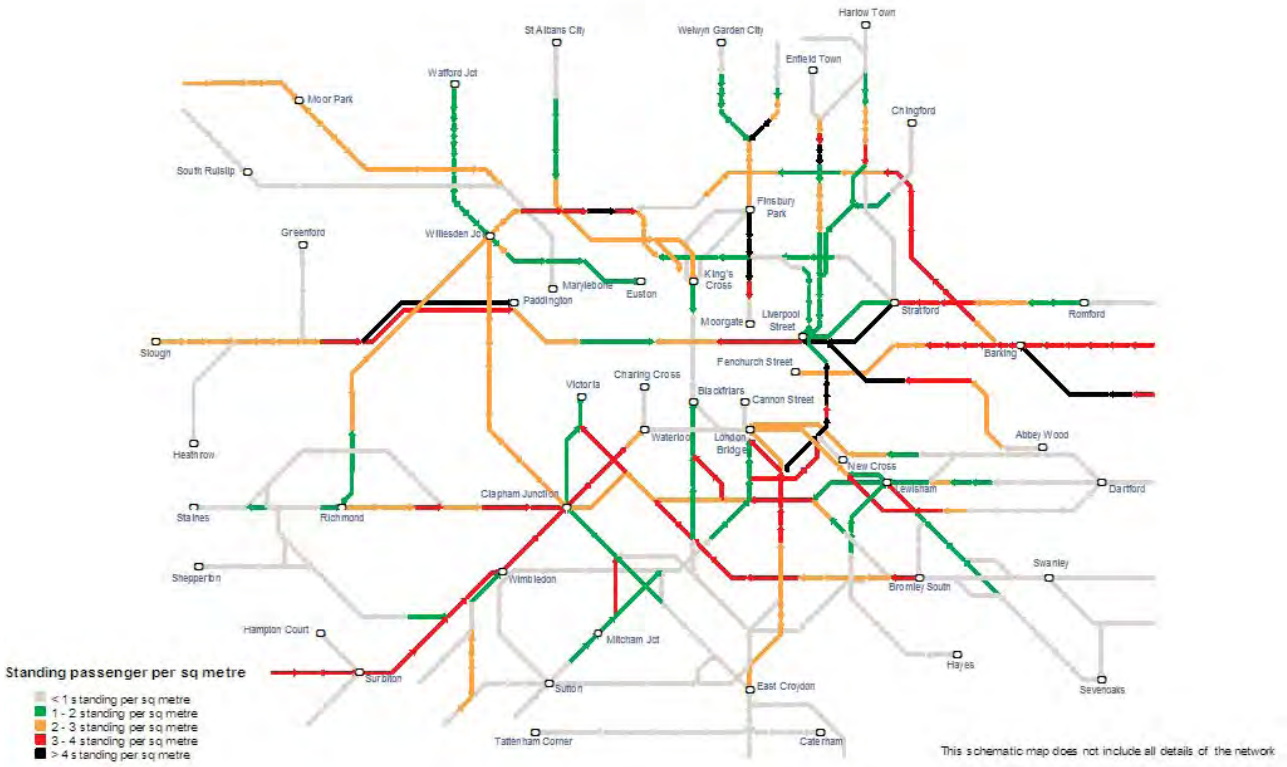
Source: TfL 2010

Figure 6.12: Rail crowding, morning peak 2006



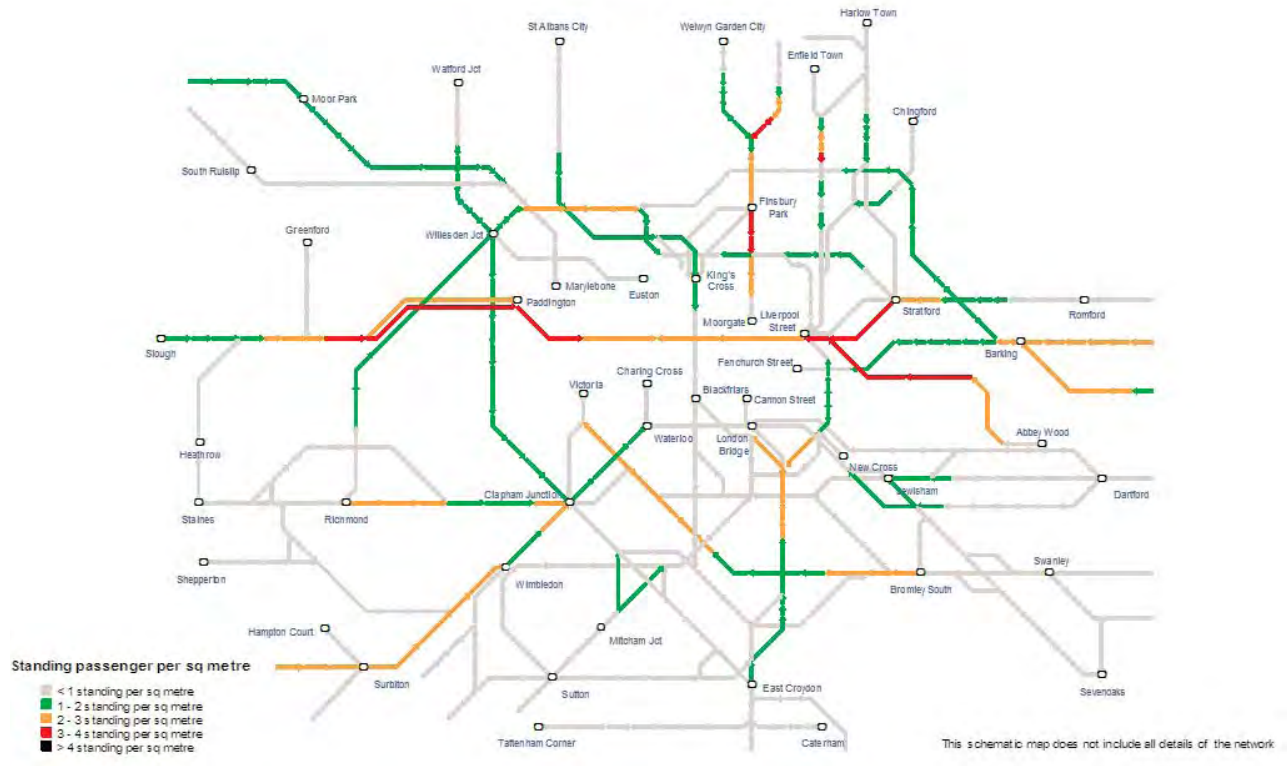
Source: TfL 2010

Figure 6.13: Rail crowding 2031, morning peak – Reference Case



Source: TfL 2010

Figure 6.14: Rail crowding 2031, morning peak – MTS Implementation Plan

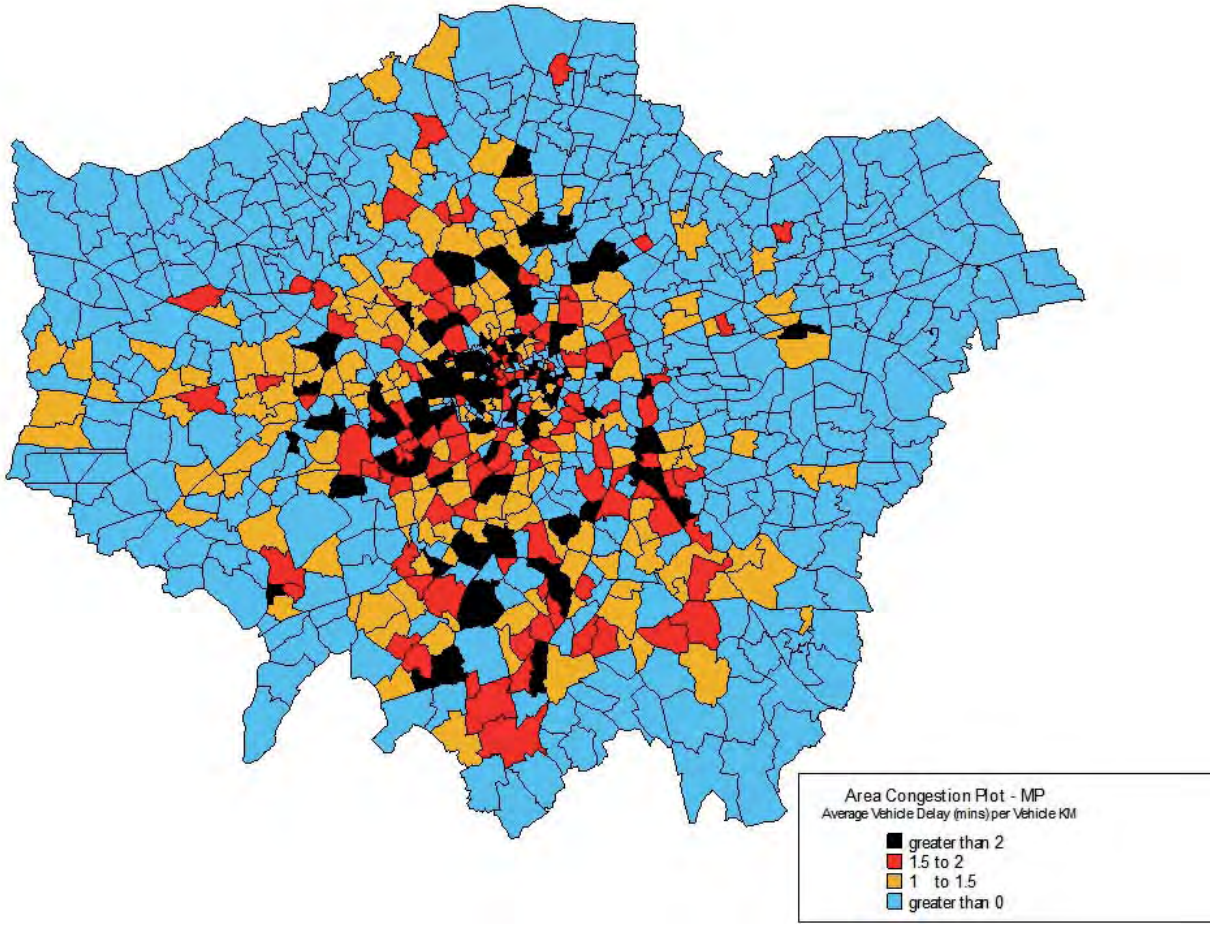


Source: TfL 2010

A report published by GLA Economics[30] estimated that, under certain assumptions, transport delays in Central London alone cost around £2 billion every year. Nearly half these costs are incurred by commuters through lost time spent delayed on the way to work with business and leisure trips making up the rest. The cost of delays for all London will be even higher.

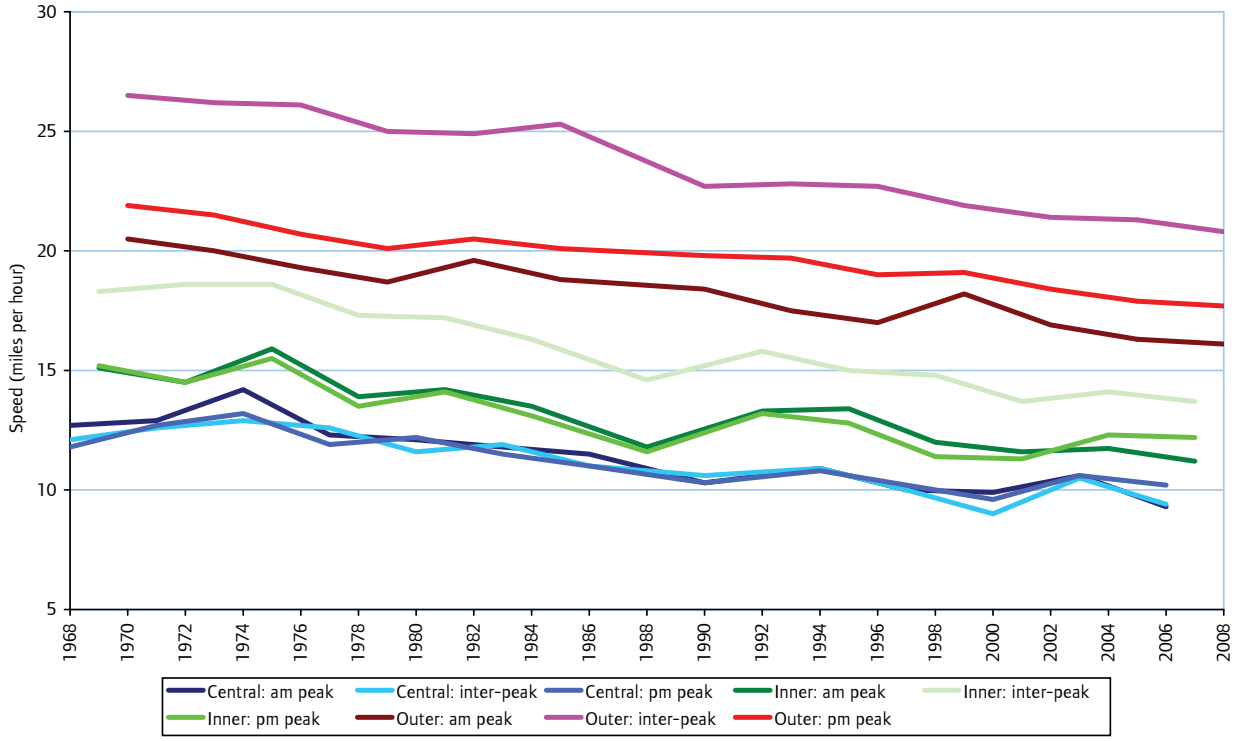
Congestion is also an issue on London's roads (see Figure 6.15). With the exception of road traffic speeds in Central London when the congestion charge was introduced, London road traffic speeds have been on a declining trend over recent decades as shown in Figure 6.16.

Figure 6.15: Highway congestion, morning peak 2006



Source: TfL 2010

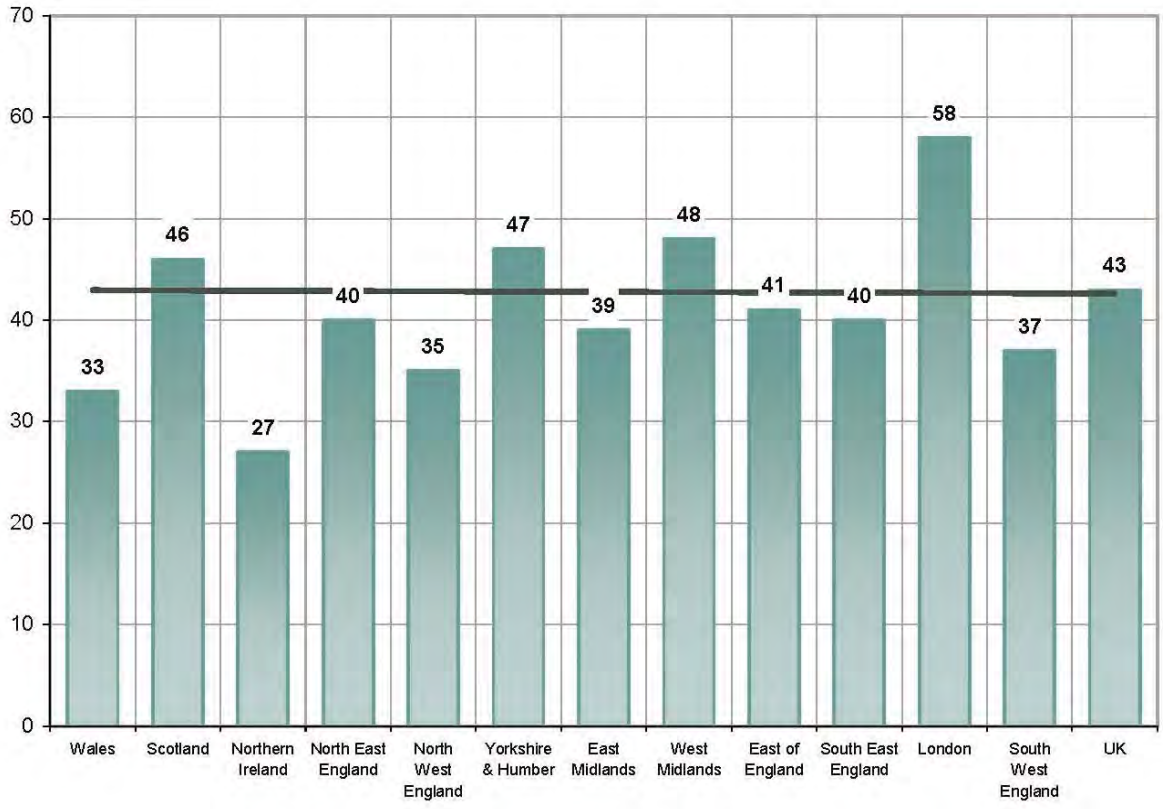
Figure 6.16: Road traffic speeds



Source: TfL, 'Travel in London report 2' 2010

Figure 6.17 illustrates that congestion appears to be a greater problem for businesses in London than any other region.

Figure: 6.17 Businesses considering that road congestion is a significant problem for them locally (%)



Source: Yorkshire and Humber Chambers of Commerce, 2007 – BCC Yorkshire and Humber transport survey – copy of Figure 8

One way that congestion could be reduced is through increases in the number of people cycling. Cycling can also lead to reduced external costs such as noise and air pollution. Valuation by TfL[31], and in a separate report by consultancy SQW[32] found that the greatest value of cycling lies in improved health and congestion reduction.

In addition to concerns about the state of London's internal transport infrastructure, business groups have also raised concerns about the quality of the UK's international transport links[33]. In particular, concerns have been raised about the service quality of Heathrow.

Heathrow is one of the busiest airports in the world and is currently operating at near full capacity. Some business groups have raised concerns that if Heathrow does not expand its capacity the overall attractiveness of London as a location for businesses could diminish.

However, a report by York Aviation[34] shows that many of the concerns about Heathrow relate to the quality and timeliness of service within the terminal and transit times to and from the airport. Further, some of the capacity concerns regarding direct flights to other destinations (particularly emerging markets) could be alleviated by increased competition between London's airports. The level of competition should increase with BAA having sold Gatwick and as a result of any future requirements of BAA having to sell Stansted, Edinburgh or Glasgow airports[35].

Risks to attracting people to London

As noted previously, global cities tend to suffer from congestion and the negative consequences it has on the quality of life of residents. For example, higher demand for housing drives up land values, which feeds through to many other living costs (for example, business rental costs also increase, which can drive up prices for their products as they aim to recover this cost). In addition, higher demand for travel to Central London increases crowding and congestion to which investment and other policies have to respond.

Surveys and international comparisons regarding liveability tend to bear this out. For example, in the 2009 Mercer Quality of Living Survey London was ranked 38th while the other recognised global cities, New York, Paris and Tokyo were ranked 49th, 33rd and 35th respectively for their liveability[36].

Enhancing the liveability of London is vital to the ongoing prosperity of London. This is because the city depends on its ability to attract and retain highly skilled people from around the country and around the world. The challenges associated with liveability are likely to increase over the coming years as London's population is forecast to grow. Current projections of London's population see an increase of 1.25 million people between 2007 and 2031[37].

Cost of living

London is an expensive city to live in. Many comparisons rate London as one of the most expensive cities in the world[38].

One of the most challenging obstacles to living in London, in terms of cost, is the ability to buy a house. Chapter 7 illustrates how housing has become less affordable over the past decade or so, with Figure 6.18 showing it has become relatively much more expensive to buy a house in London than elsewhere in the UK.

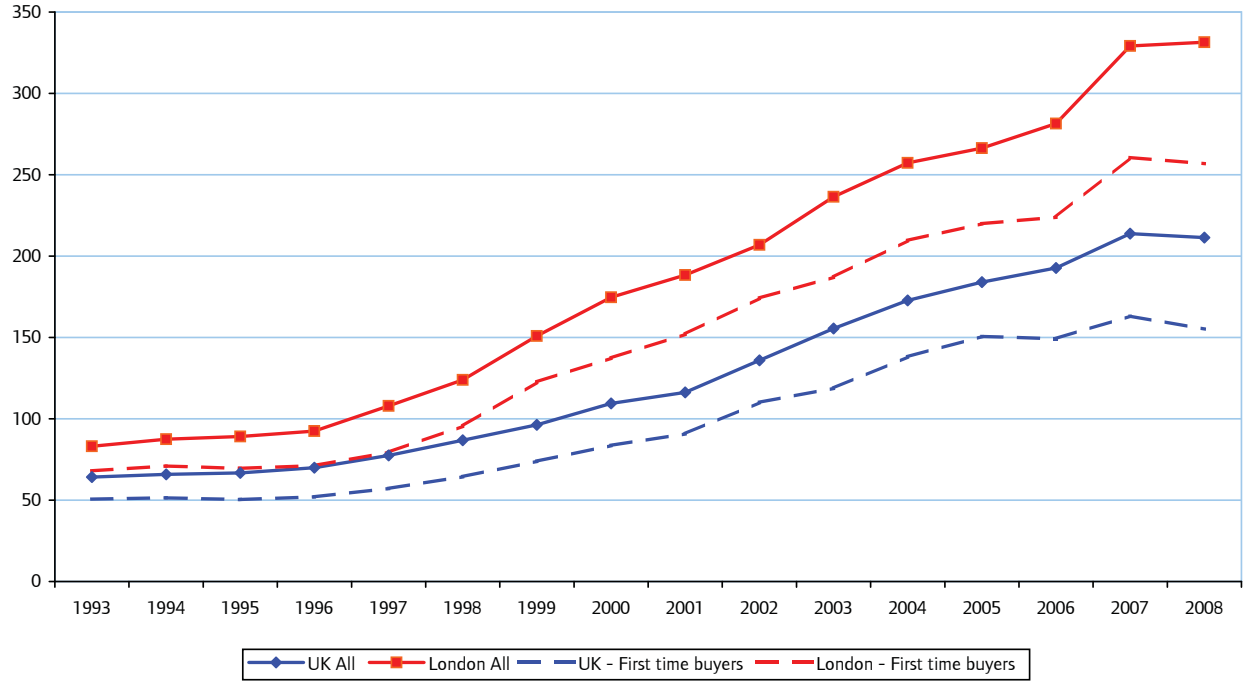
The latest quality of life index compiled by 'International Living Magazine' placed the UK in 25th place, falling five places from its position last year. This index considers nine quality of life categories: Cost of Living, Culture and Leisure, Economy, Environment, Freedom, Health, Infrastructure, Safety and Risk, and Climate. On a national basis our attractiveness against other countries is lower predominately due it the UK's poor scoring in the Cost of Living Index.

Table 6.1: 2010 Quality of Life Index

Country	Cost of Living	Leisure & Culture	Economy	Environment	Freedom	Heath	Infrastructure	Risk & Safety	Climate	Final Score
France	55	81	69	72	100	100	92	100	87	82
Australia	56	82	71	76	100	87	92	100	87	81
Switzerland	41	86	79	78	100	95	96	100	77	91
Germany	54	82	71	83	100	89	90	100	79	81
New Zealand	62	82	65	77	100	88	70	100	84	79
Luxembourg	44	76	85	77	100	87	66	100	83	78
United States	56	79	67	62	92	78	100	100	84	78
Belgium	41	83	66	64	100	88	96	100	86	78
Canada	62	76	69	62	100	84	85	100	69	77
Italy	56	85	63	74	92	90	62	100	87	77
Netherlands	48	71	69	67	100	87	92	100	75	77
Norway	39	60	89	76	100	90	89	100	60	77
Austria	41	86	68	87	100	85	68	100	76	77
Liechtenstein	44	80	100	65	100	80	44	100	79	76
Malta	63	70	53	84	100	89	52	100	95	76
Denmark	33	88	69	84	100	86	72	100	78	76
Spain	56	68	63	75	100	90	65	100	79	76
Finland	39	93	66	68	100	81	76	100	76	75
Uruguay	60	72	52	72	100	76	64	100	93	75
Hungary	58	76	48	77	100	84	77	93	76	74
Portugal	55	72	52	74	100	86	56	100	83	73
Lithuania	63	68	48	81	100	80	56	100	79	73
Andorra	52	74	61	60	100	85	58	100	82	73
Czech Republic	48	78	52	74	100	82	78	100	67	73
United Kingdom	30	82	65	72	100	84	80	100	66	73

Source: International Living 2010

Figure 6.18: Average house prices (1993-2008, £'000)



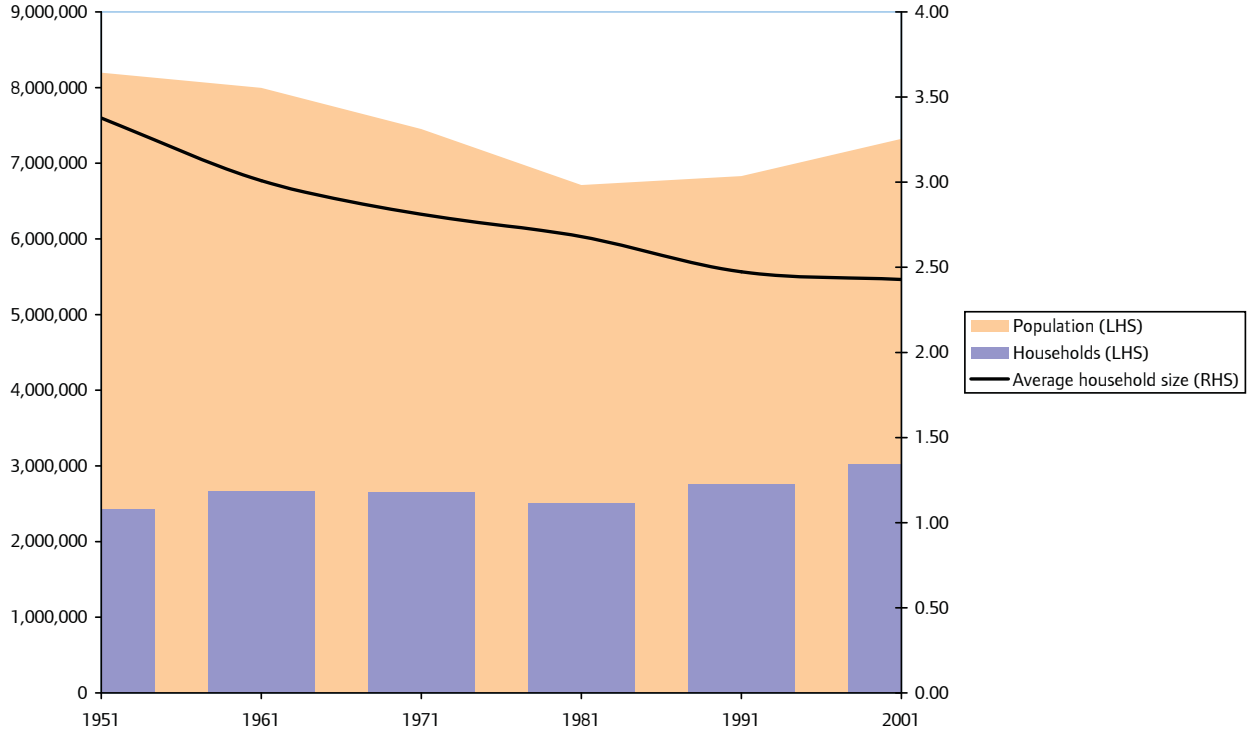
Source: DCLG Survey of English Housing (Table 507), 2008

Although the economic downturn is putting downward pressure on house prices in the short to medium term, in the longer term house prices in London are likely to continue to grow.

Population has been growing in London alongside an increase in the number of jobs for more than two decades. At the same time there is a longstanding trend of decreasing household sizes, as shown in Figure 6.19. As a result, the number of households in London has increased at a faster rate than the population, pushing up demand for new housing units (and raising house prices – see Figure 6.20).

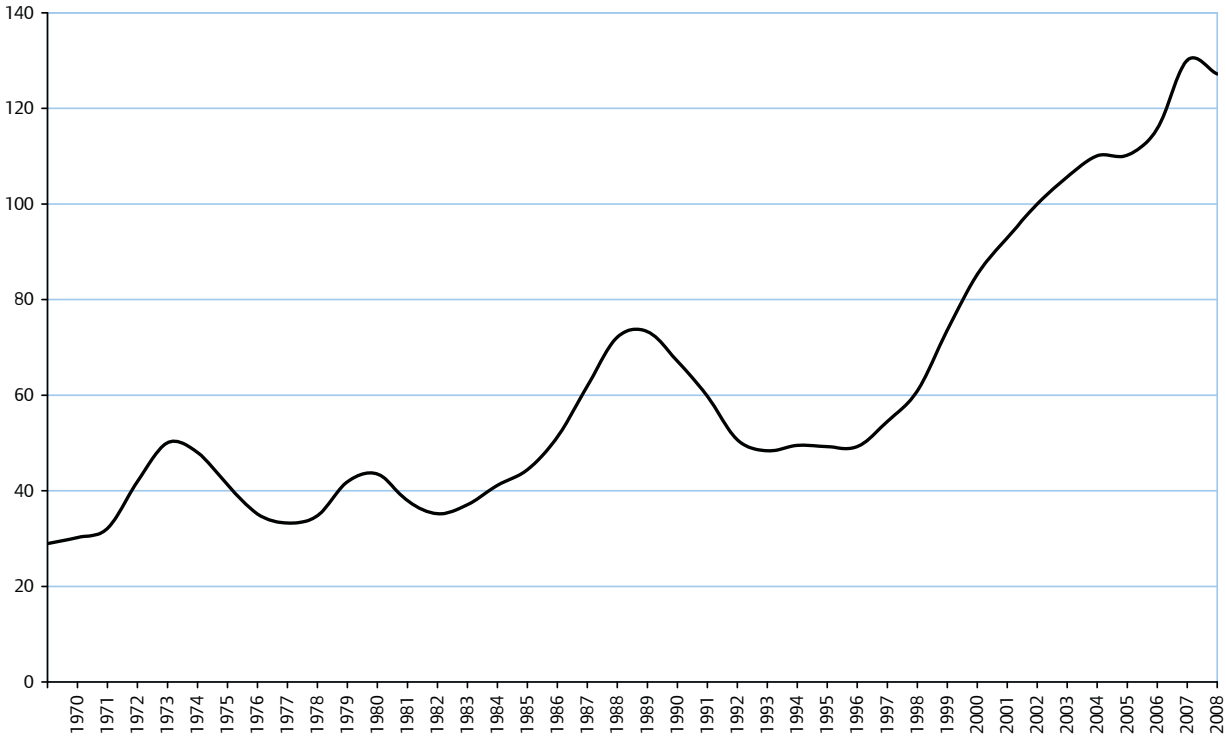
This trend will continue with population projected to increase from 7.6 million in 2007 to 8.8 million in 2031 (an increase of 1.25 million)[39]. This will mean more demand for housing, so new building typologies at higher densities and more housing are likely to be required if prices are to be affordable to workers in London.

Figure 6.19: Population and household size trends in London



Source: Housing in London: The evidence base for the London Housing Strategy, Figure 1.1.1

Figure 6.20: Index of mix-adjusted house prices in London, 1969-2008 (in 2008 prices), 2002 = 100

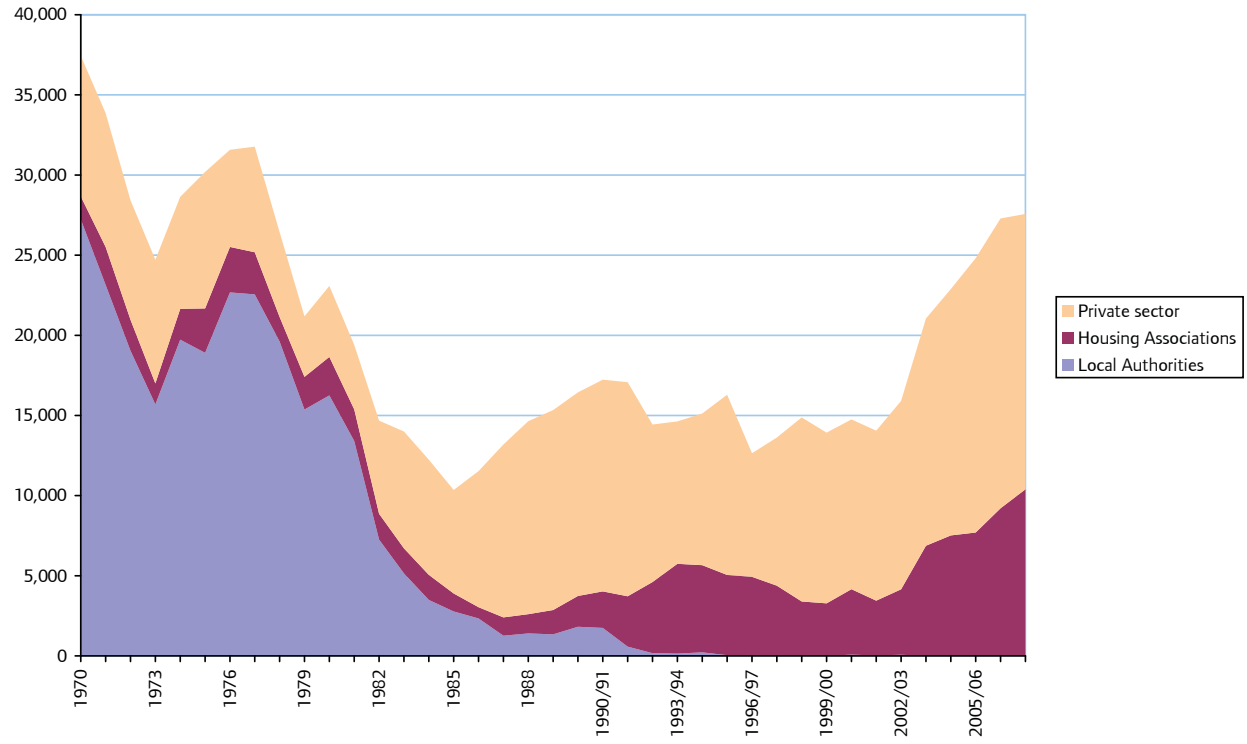


Source: CLG

The latest population projections suggest an extra 32,660 households per year between 2006 and 2031[40]. Figure 6.21, which shows the number of new dwellings completed each year from 1970 to 2007/08 by market segment, illustrates that this is above the rate of new home building for the past 30 years or so. Figure 6.21 also shows that house building has increased in the recent past before levelling off in 2007/08.

It is expected completions will continue to slow in the near future in response to the significant drop in house prices. This poses a challenge for London, as a shortage of new homes has been a persistent problem.

Figure 6.21: Annual supply of new homes in London, 1970 to 2007/08



Source: Housing in London: The evidence base for the London Housing Strategy, Figure 1.1.5 updated by GLA.

Indeed, the National Housing and Planning Advice Unit (NHPAU) suggests that in the absence of a large increase in housing supply, the fundamental drivers of long-term housing demand, such as population growth, mean that even a large short-term fall in house prices will not prevent housing becoming progressively less affordable over the next two decades[41].

The capacity for future housing growth is primarily located in parts of East London where there is a significant amount of redundant employment land. It is important that any housing developments are linked to areas with employment opportunities which, as shown earlier, means particularly Central London.

Environment

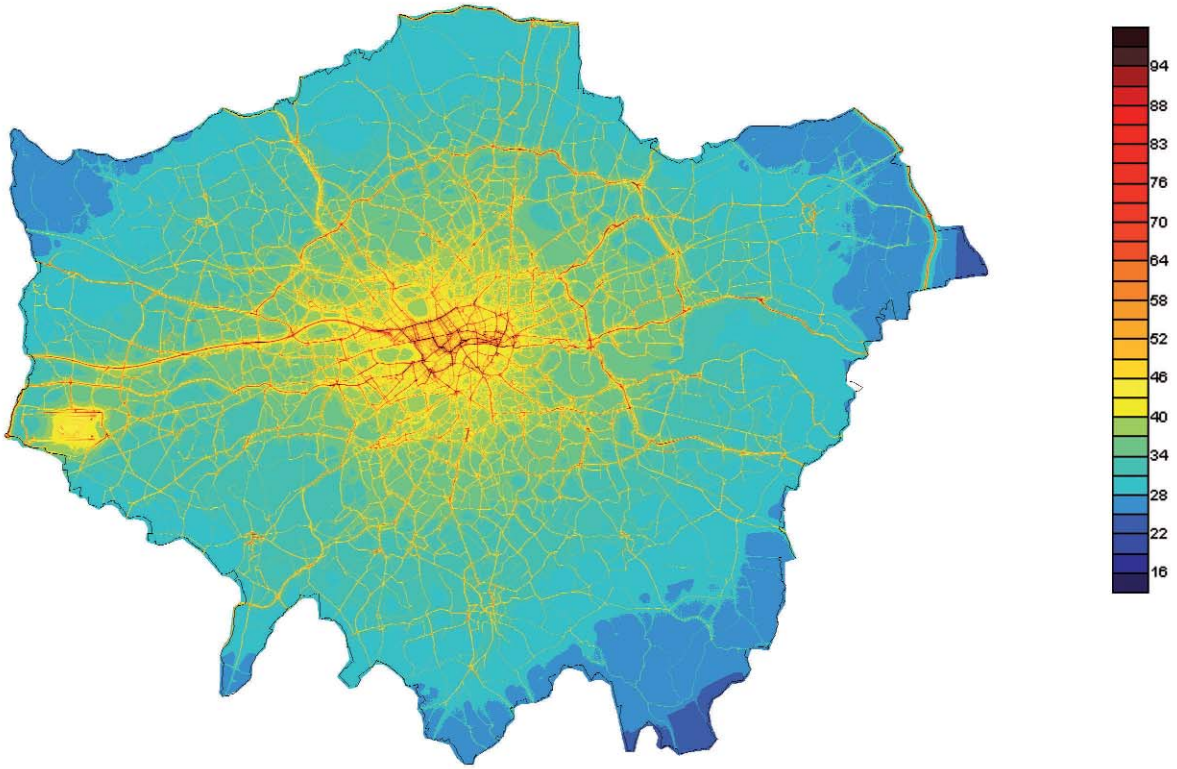
London relies on high quality labour viewing it as an attractive place in which to live and work. High quality and creative individuals feel attracted to places where there are concentrations of other talented individuals but they also value a pleasant aesthetic environment and a beautiful physical setting[42]. A study by BAK Basel found London to perform well on economic and societal variables but far less well on environmental factors when compared to other European cities such as Stockholm[43]. Perceptions of poor air quality, long commuting times, heavy traffic and London's rainy climate were singled out as issues.

Air quality

Whilst air quality in London has improved in recent decades, it remains an issue for London. The levels of two pollutants – particulate matter (PM_{10}) and nitrogen dioxide (NO_2) – still do not meet the limit values set out by the EU. Whilst some measures to tackle greenhouse gas emissions (as set out in chapter 5) may help reduce emissions of these pollutants, targeted measures to tackle the most polluted areas of London and the greatest sources of emissions are also required. The draft Mayor's Air Quality Strategy, published in October 2009, sets out the position on air quality in more detail. Road transport is a major source of air pollution

emissions in London, although London's air quality is also affected to some extent by pollution from outside the capital. Figure 6.22 shows concentrations of NO_2 across London in 2008: as can be readily seen, the areas with the highest concentrations are closely related to the road network and around Heathrow.

Figure 6.22: NO_2 annual mean concentrations (mg/m3) for the year 2008



Source: TfL

Poor air quality not only has direct impacts on the environment, buildings and urban infrastructure but also has detrimental impacts on human health and well-being. The 2009 Londoner Survey considered air quality the second most important environmental concern to Londoners. However, an additional factor is the potential interaction between different air pollutants such as particulate matter, sulphur dioxide, nitrogen dioxide, carbon monoxide and ozone.

In assessing the economic impact of air pollution, there are a number of separate factors to consider. Many studies have used 'willingness to pay (WTP)' contingent valuation methodologies, whilst others have used the cost of illness[44]. An alternative approach in the literature has been to look at residential property markets and examine the effect of various pollutants on these. Results from Wardman and Bristow's (2004) study[45] undertaken in Edinburgh demonstrated that households with younger children had a higher WTP for improvements in air quality (and there might be likely similar patterns of WTP in noise pollution). This is not the only group that might be willing to pay a greater amount to eliminate noise or other forms of pollution. In Sweden, Carlsson and Johansson found that WTP tended to increase with increased income, home ownership, levels of education and environmental organisation membership[46]. Less predictable characteristics were also identified. For example, males were willing to pay more than females and that WTP reduced for higher age groups and amongst the retired.

GLA Economics' work in 2003 suggested that air quality, as one would expect, was higher in wards in London with a higher proportion of green space but that Londoners valued proximity and access to Central London more. Consequently house prices were inversely correlated with air quality in London[47].

Noise pollution

Other factors which have been found to impact on quality of life in London include noise pollution. To date, the evidence on the direct effects of noise on cardiovascular health is mixed although some studies have suggested that people living or working in a noise environment above 60dB are statistically more likely to suffer a heart attack than those in a quiet environment.

DEFRA is now mapping noise created by road, rail, air and industrial sources in London and a range of other urban areas across the UK. Key findings from this analysis include:

- 39 per cent of Londoners are exposed to noise levels above 60dB during daytime hours and 7 per cent are exposed to levels above this at night
- Nearly 270,000 people in London are exposed to rail noise pollution greater than 60dB (although only 1,600 are exposed to levels at or above 75dB) by day and nearly 46,000 by night
- A relatively small number of Londoners are affected by levels of over 60dB from industrial sources in London: 8,000 during the daytime and less at night
- Almost 195,000 people (not all within Greater London) are exposed to noise pollution from London Heathrow Airport at levels of over 60dB during daytime hours (although only 700 are exposed to levels at or above 75dB) and 62,000 are exposed to 60dB or more during the night.

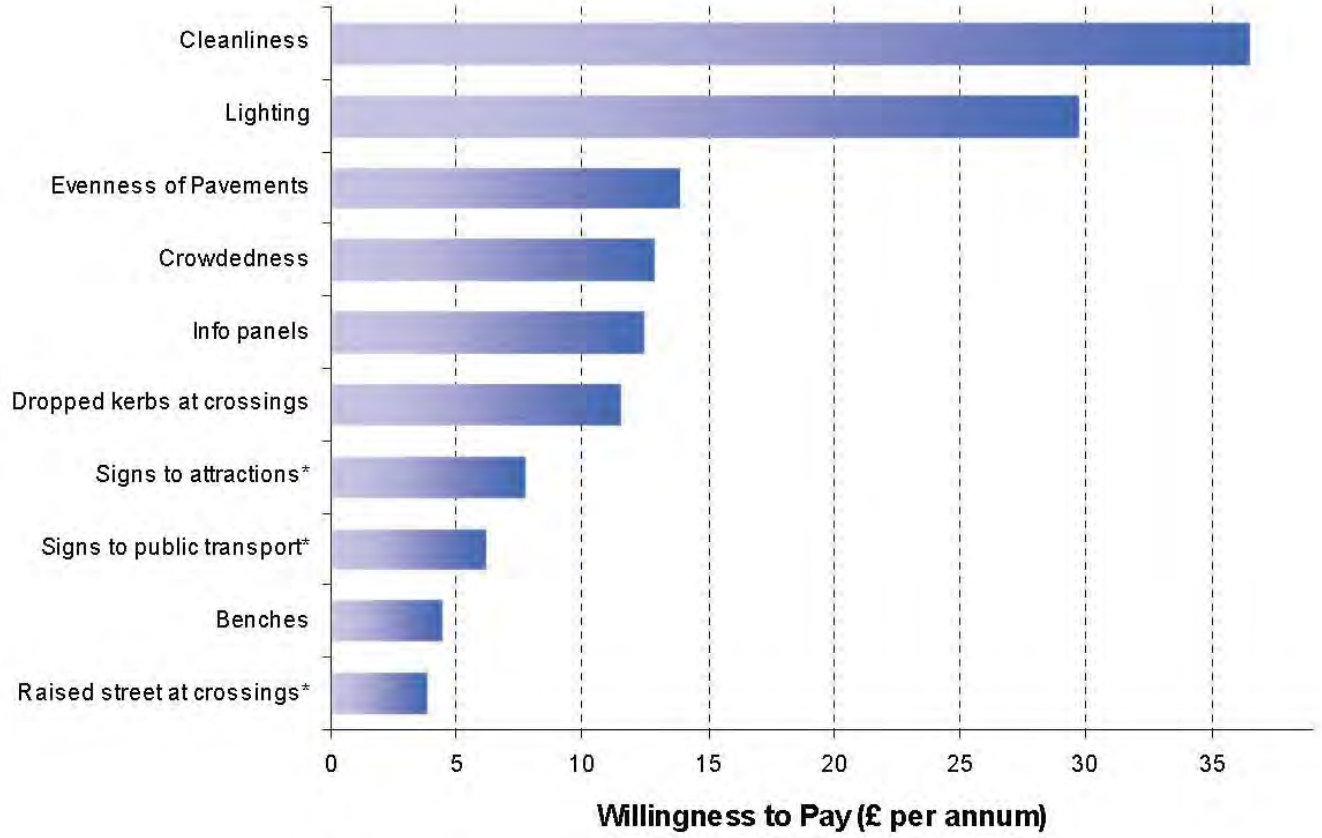
A study made at the time of the implementation of the European Environmental Noise Directive established an interim economic value for noise from road traffic at €23.50 per dB per household per year[48]. Another study completed in the Rhone-Alpes region of France asked respondents to categorise annoyance between five different levels. The study found that the average willingness to pay (WTP) was €73 per annum to eliminate noise annoyance with WTP increasing with greater levels of disturbance from €61 for slight disturbance to €130 for extreme disturbance. It also needs to be considered that people's WTP may reflect factors such as annoyance and sleeplessness but may not accurately reflect the longer-term health effects of which they may not be fully aware. There are also socio-economic equality implications of the approach. Although the proportion of income an individual is willing to pay may decline with levels of income, the absolute amount is still likely to be greater. This will have the effect of making a deprived part of London seem 'less willing to pay' to avoid noise pollution than a more affluent part.

Wider public realm

The concept of 'public realm' is notoriously difficult to define. A 2004 Central Government consultation with local authority representatives found that the majority did not have an operational definition of the public realm[49]. However it would include squares, parks, gardens, green spaces and public open spaces, streets, roads, footpaths, cycle paths, tow paths and rights of way[50].

Work by Colin Buchanan and Partners suggests that people are most willing to pay for relatively abstract concepts rather than specific items of street furniture. For example Strategic Walks 2004 found that people most valued cleanliness, lighting and the evenness of pavements (see Figure 6.23).

Figure 6.23: Willingness to Pay for public realm improvements



Source: Strategic Walks 2004 see P. Buchanan (2007)

** There is reason to believe that this result offers only a partial valuation*

Fausold and Lilieholm have argued, certain intangible values lose significance when attempts are made to quantify them but land use decisions are better informed if there is a more comprehensive understanding of open space's economic value[51]. A number of areas surrounding green spaces are still relatively poorly understood. These include how open space relates to crime and areas of preventative health and how green space impacts upon this[52].

GLA Economics has undertaken work on valuing green space specifically within London[53]. In the study the amount of green space in wards was the fifth most significant indicator in explaining the variation in average house prices. The first four indicators were level of income support, travel time to Central London, average air quality and dwelling density. A 1 per cent increase in green space in a typical ward can be associated with a 0.3 to 0.5 per cent increase in average house price. However, homebuyers tend to have one of two preferences: Central London with its high density of dwellings or the open spaces of the Green Belt. Furthermore, there were also differences between flat and house prices adjacent to public open space which may be associated with fear of risk of crime.

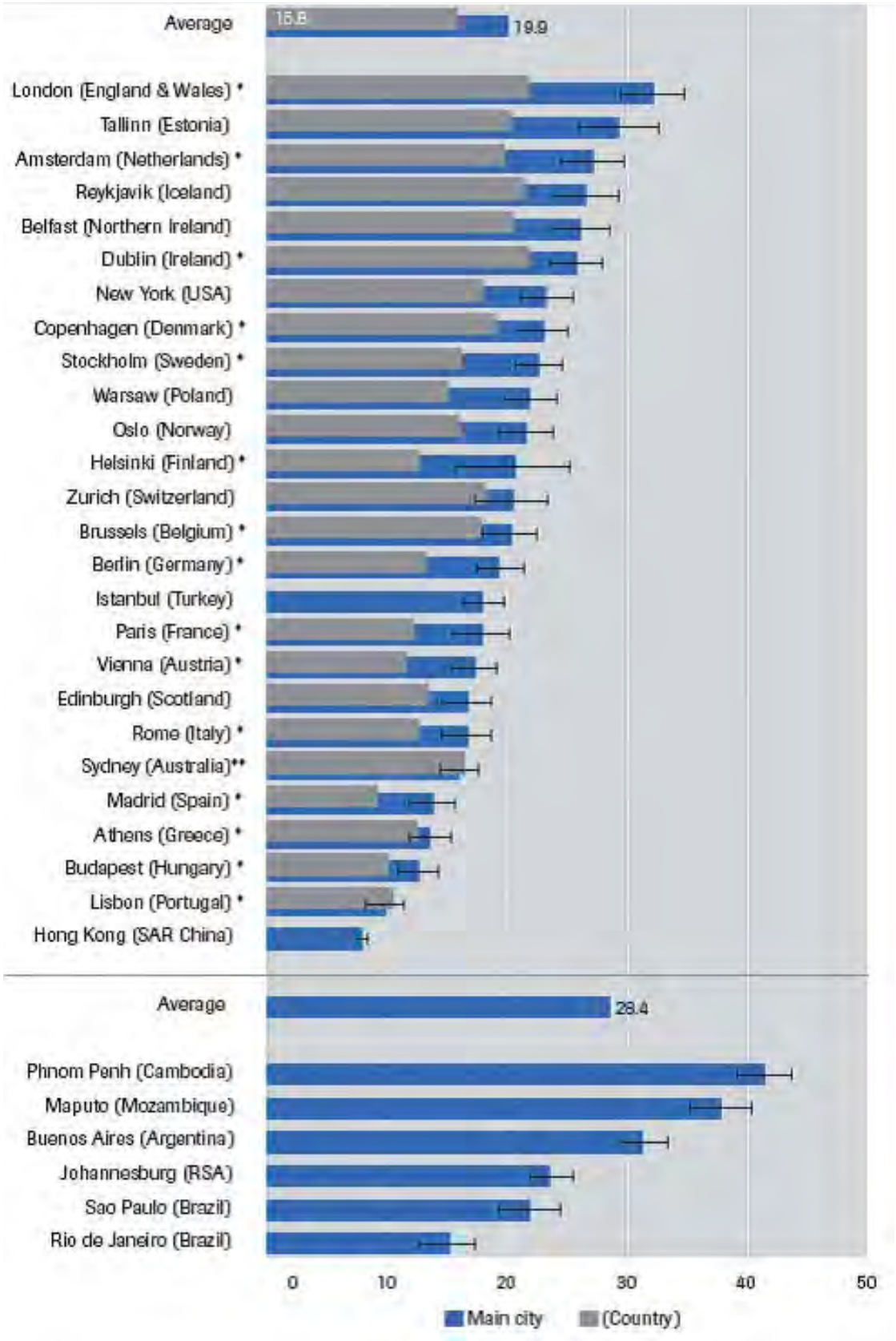
Crime

In the 2009 Annual London Survey over a third of respondents highlighted safety and policing as the worst thing about living in London (the largest single category)[54]. It is important for London's ongoing attractiveness that residents feel safe both when in their homes and in public places.

Crime can also make London a less attractive place for mobile businesses and mobile labour to locate. Unfortunately, international comparisons suggest that the UK (and London) residents suffer from relatively high levels of victimisation. Figure 6.24 shows the percentage of people victimised once or more in 2004 by any of ten common crimes[55]. The chart shows that, on average, around 16 per cent of the population was a victim of at least one of these crimes in 2004. The chart also shows that levels of vicitimisation are higher

in cities than for the country as a whole (Lisbon being the only exception in Figure 6.24). The chart shows that, whilst the figures are estimates and so subject to statistical variability, London (and England and Wales) compares rather unfavourably with other countries and cities[56].

Figure 6.24: Overall victimisation for 10 crimes; one year prevalence rates in 2003/04 (percentages) of main cities and national populations of 28 countries. 2002-05 ICVS (International Crime Victims Survey) and 2005 EU ICS (European Survey on Crime and Safety)

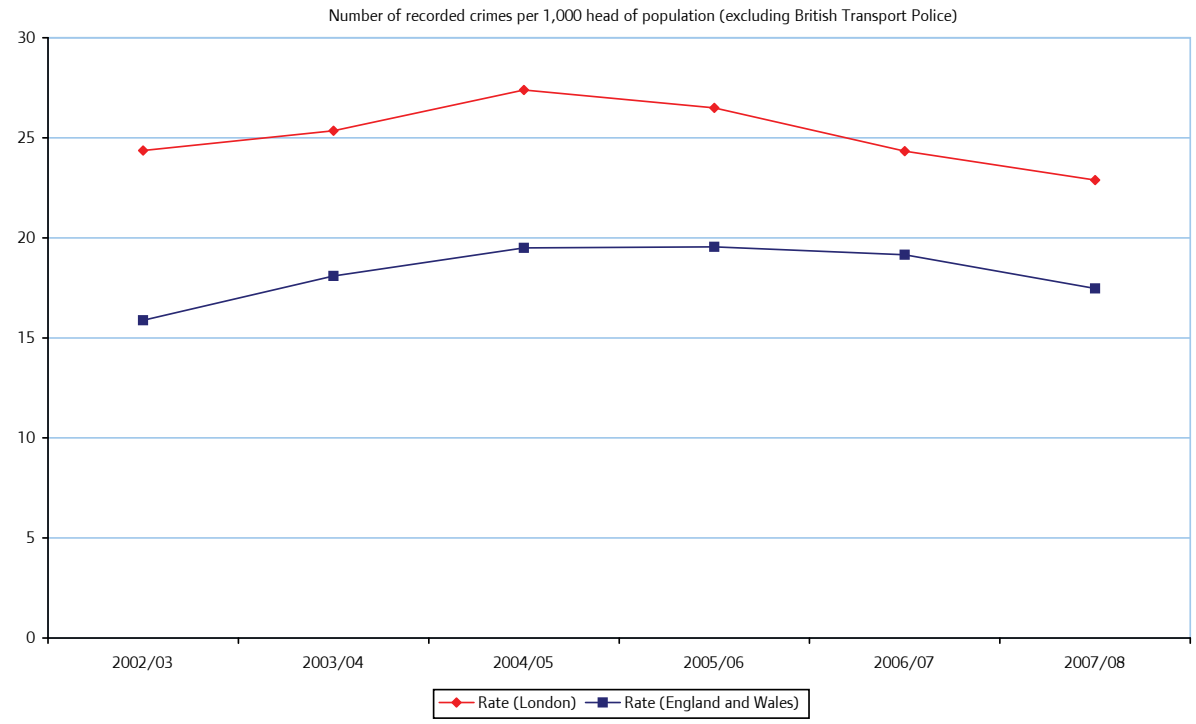


Source: European Survey of Crime and Safety (2005 EU ICS). Brussels, Gallup Europe

Tackling crime is more costly and complex in London when compared to the rest of England because of higher labour costs, the presence of organised criminals, the heterogeneity and dynamism of the population, additional costs of policing demonstrations, large events and the number of service delivery bodies in London[57].

London has seen a significant reduction in crime over recent years, but still suffers disproportionately from some of the most serious crimes such as youth knife crime[58]. Crime in London, as recorded by the British Crime Survey (BCS), fell by 2 per cent between 2007/08 and 2008/09, although this was lower than the drop experienced in England and Wales as a whole. However, it is important also to include changes in the background demographics in such an analysis. Figure 6.25 shows that crime is higher in London when compared to England and Wales as a whole on a per head of population basis though the gap has narrowed marginally in recent years.

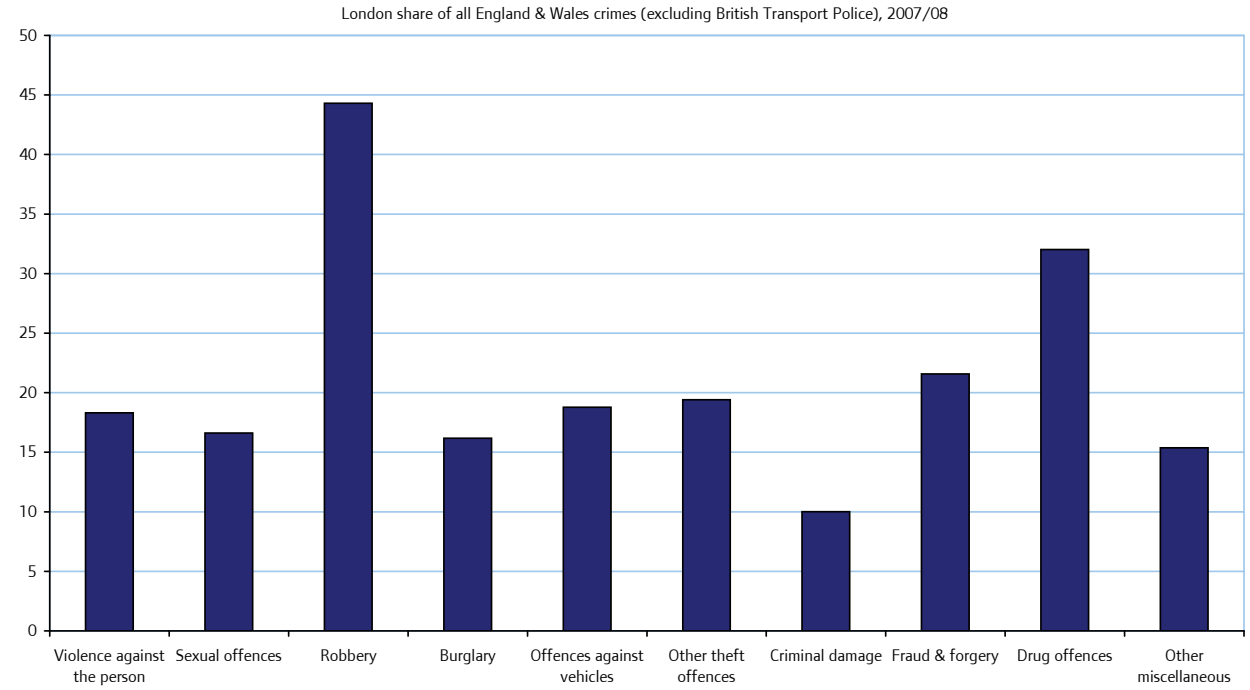
Figure 6.25: Recorded crime rates[59]



Source: Research Development Statistics, ONS mid-year population estimates, GLA Economics

The BCS for 2008/09 found that "London was the region with the highest rates of total recorded crime, recorded violence against the person, offences against vehicles and other theft offences. This region also had a higher BCS risk of personal crime than for England and Wales overall". Many of the crimes which London experiences are amongst the most costly to society. Work by Brand and Price (2000) estimated the average cost of a homicide to be £1.1 million and the average cost of a serious wounding to be £130,000[60]. In contrast, some other crimes, such as criminal damage have a far lower average cost (£510). Figure 6.26 shows that London is most subject to those crimes that are the most costly to society, accounting for 44 per cent of robberies in England and Wales, 18 per cent of violence against the person and 17 per cent of sexual offences, compared to just 14 per cent of England and Wales' population.

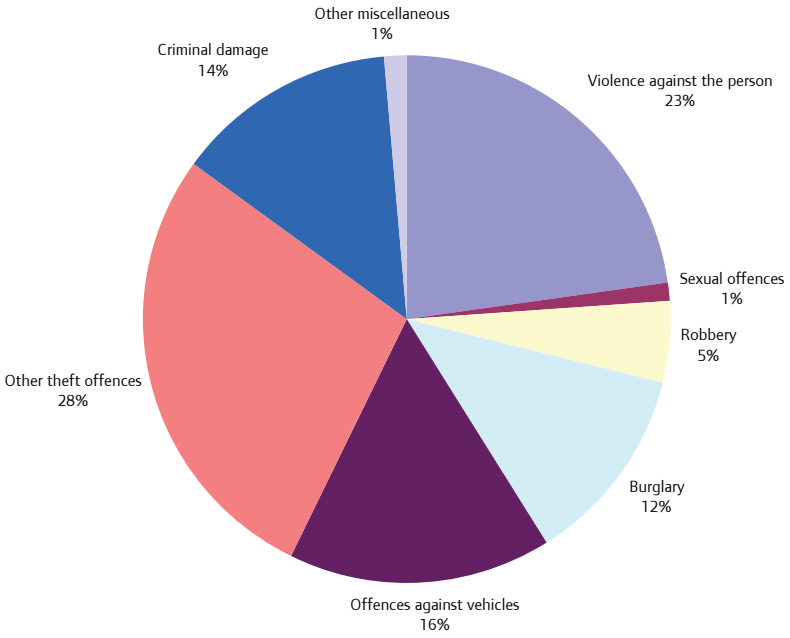
Figure 6.26: London's share of recorded crime by category



Source: Research Development Statistics, ONS mid-year population estimates, GLA Economics

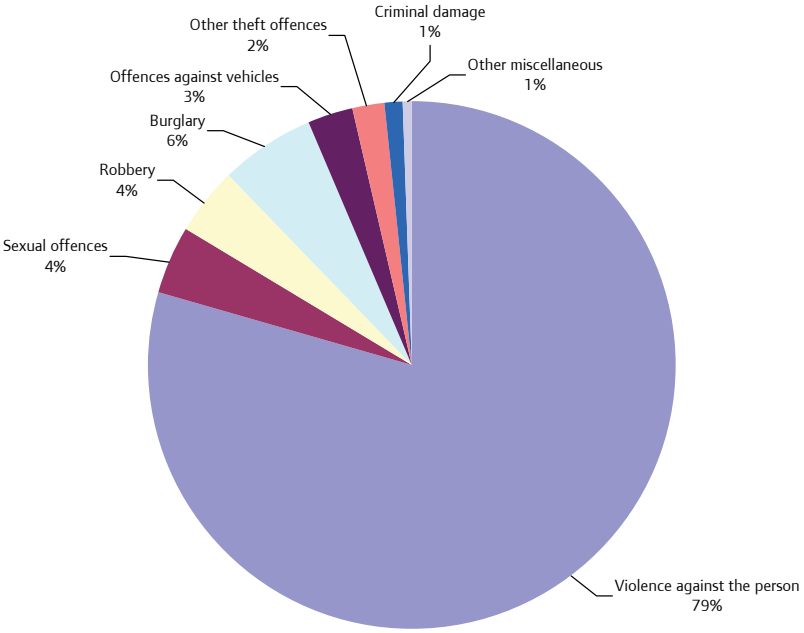
Using the above methodology (but excluding the costs of fraud, forgery and drug offences for which no methodology of estimating costs is available), London faces costs of crime each year exceeding £4.1 billion in 2000 prices[61], over 18 per cent of the total costs in England and Wales. It is important to realise that these costs can be very wide-ranging. For example costs associated with vehicle crime will include costs for security expenditure, insurance administration, value of any property stolen or damaged, emotional impact, victim services, police activity, prosecution, court costs, legal aid and prison costs. For London, as for the UK, the most costly crimes are violent crimes against the person. These account for 23 per cent of all reported crimes in London but represent four fifths of total costs as shown in Figures 6.27a and 6.27b.

Figure 6.27a: Number of reported crimes in London by category in 2007/08 excluding fraud/forgery and drug offences



Source: Research Development Statistics, ONS mid-year population estimates, GLA Economics

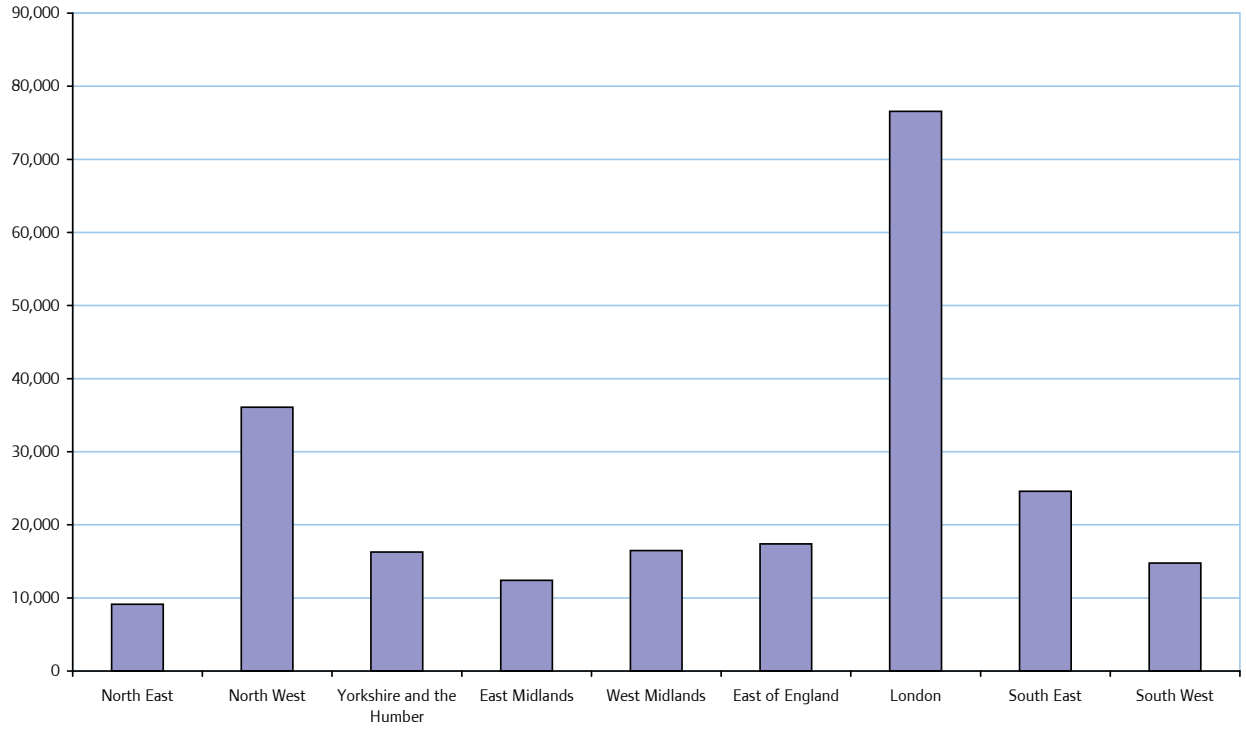
Figure 6.27b: Costs of reported crimes in London by category in 2007/08 excluding fraud/forgery and drug offences



Source: Research Development Statistics, ONS mid-year population estimates, GLA Economics

Numerous studies have shown a correlation between drug use and crime and as shown in Figure 6.28 London has by far the highest prevalence of drug use of any region in the UK.

Figure 6.28: Drug crime by region (numbers)



Source: BCS 2008/09

The 2008/09 BCS found that the risk of being a victim of crime was correlated with poverty. It found that the risk of being a victim of household crime was "lower for households in the least deprived areas compared with the most deprived areas in England (16 per cent compared with 22 per cent for BCS household crime)." Whilst the "risk of being a victim of violence was twice as high for those individuals living in the 20 per cent most deprived areas in England (4.5 per cent) compared with those in the 20 per cent least deprived areas (2.2 per cent)."

Finally, the perception of crime is also higher in London than in England and Wales as a whole[62]. Londoners were found to be particularly concerned about burglary, being mugged or physically attacked, knife crime and drugs related crime[63].

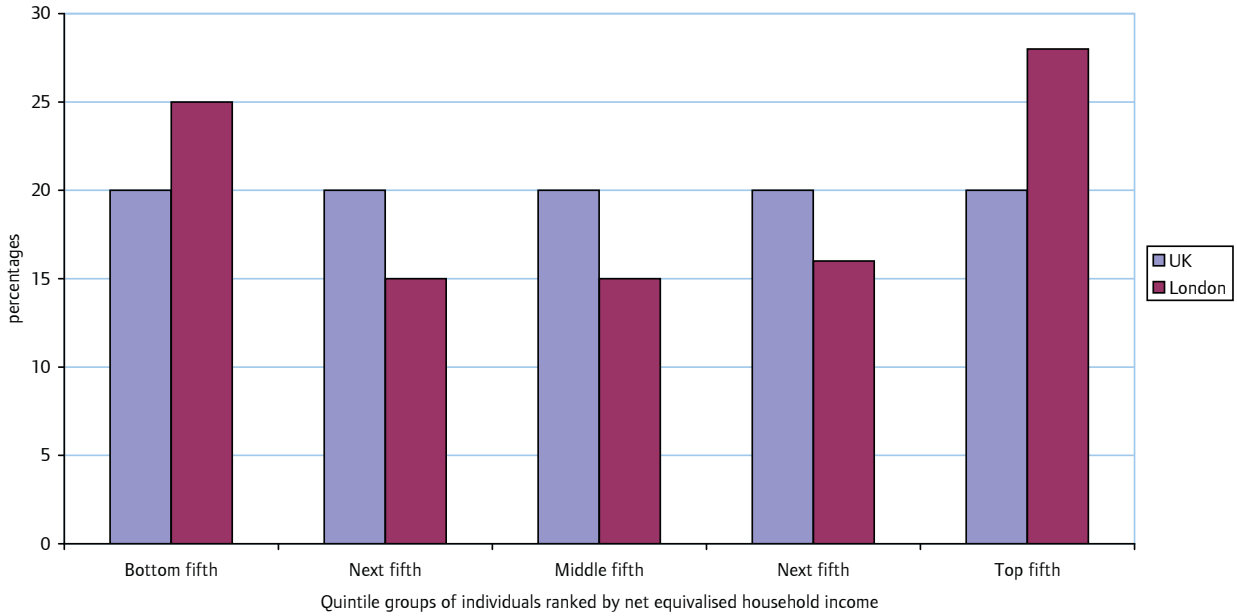
Chapter 7: Socio-economic issues

London has a polarised income distribution. As well as containing a high share of the UK's most prosperous individuals, it is also home to a high share of the UK's poorest individuals. Part of the reason for London having a high share of the UK's poorest individuals is because of its relatively high rate of worklessness. This is also a factor behind London's high rate of child poverty which can impact on an individual's educational progression and, as a result, their future labour market prospects.

This chapter focuses on some of the socio-economic issues in London. It looks at households with low incomes and highlights the significant share of London households, and children in particular, that live in poverty. The chapter shows how prospects as an adult are linked to educational achievement as a young person and also that educational achievement for a young person is strongly linked to parental incomes.

Previous chapters have shown a side of London in which large numbers of highly qualified workers help maintain its status as a global business centre. However, this only provides part of London's story for it is also home to significant numbers of adults and children living in poverty.

Figure 7.1: Income distribution of individuals in London, 2005/06-2007/08 after housing costs

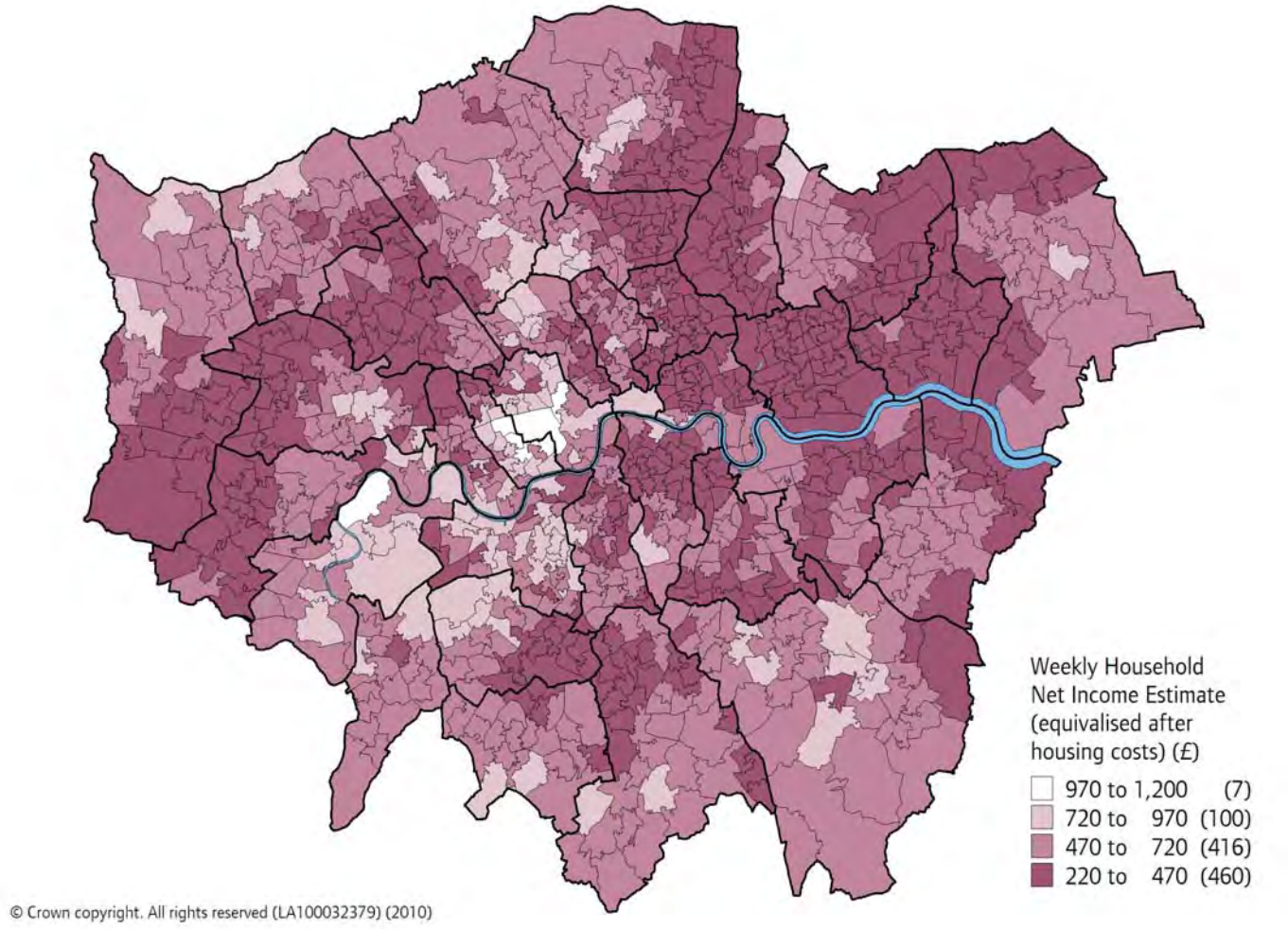


Source: DWP, Households below Average Income (UK figures are based on a single year, London figures are based on 3 year average)

Figure 7.1 demonstrates that, after housing costs, 28 per cent of Londoners are ranked in the top quintile nationally, whilst 25 per cent are ranked in the bottom quintile. This means that in comparison to the rest of the country London is home to significant income polarisation, with much of the population skewed either towards the top or bottom of the UK's income distribution. Furthermore, this polarisation is even larger in Inner London, with 27 per cent in the bottom quintile and 29 per cent in the top quintile after housing costs[1].

Figure 7.2 demonstrates the spatial distribution of average income in London: households with the lowest net income tend to live in the north-east and west of the city, with the highest net incomes in Central London.

Figure 7.2: Map of average weekly household net income (equivalised and after housing costs) April 2007 – 2008



Source: Model-based income estimates at MSOA level, 2007/8, ONS

So why does London have such an income distribution? The explanation for London's high share of individuals at the top of the UK income distribution seems clear. Compared to the rest of the UK, London is home to a large share of the UK's highest paid job opportunities, particularly in the financial services and business services sectors and in management and professional occupations. Thus, for those with the requisite skills and qualifications, opportunities for advancement and high incomes in London are widely available.

In terms of why London should also have such a large number of individuals towards the bottom of the UK income distribution, the first thing to note is that this is only the case when measured net of housing costs. In other words, the level of incomes received via wages or benefits towards the bottom of the income scale are no worse in London than elsewhere in the UK. However, the high cost of housing in London means that once housing costs have been deducted, we find that 25 per cent of Londoners are amongst the 20 per cent of UK residents with the lowest incomes net of housing costs.

Another reason why London has a large share of its population towards the bottom of the income scale but relatively few in the middle of the UK income scale is that there is evidence of greater job polarisation in London than in other UK regions. Research showed that during the 1990s, the employment shares of both low and high paid occupations grew whilst there was a shrinkage of job opportunities in between. This occurred nationally, but the trend was much larger in magnitude in London[2]. The impact on incomes occurs because a higher share of workers therefore find themselves in low pay occupations, with the opportunities for progression limited arguably by the shrinkage in the number of mid-paying jobs available.

A final reason why London has a significant number of its population towards the bottom of the income distribution is that it has a higher level of worklessness amongst working age adults than the rest of the UK. This is particularly true amongst females.

Therefore, due to a mixture of low pay, worklessness, and high housing costs, many Londoners find themselves living in poverty. This is a problem that is seen not just in social issues such as higher crime rates and poorer health outcomes that characterise many low-income areas of London but also in the fact that a disproportionately high number of London's children (39 per cent) live in low-income families.

With high levels of skills and qualifications becoming increasingly important to succeed in the London job market, the fact that almost four out of every ten children live in poverty is a major problem as the evidence is clear that children in low-income families significantly under-perform against their peers in educational attainment. The risk is therefore that these children will themselves as adults continue to live in poverty, either workless or in low-wage jobs, in no small part due to their lack of qualifications, and that deprivation in many areas of London will continue.

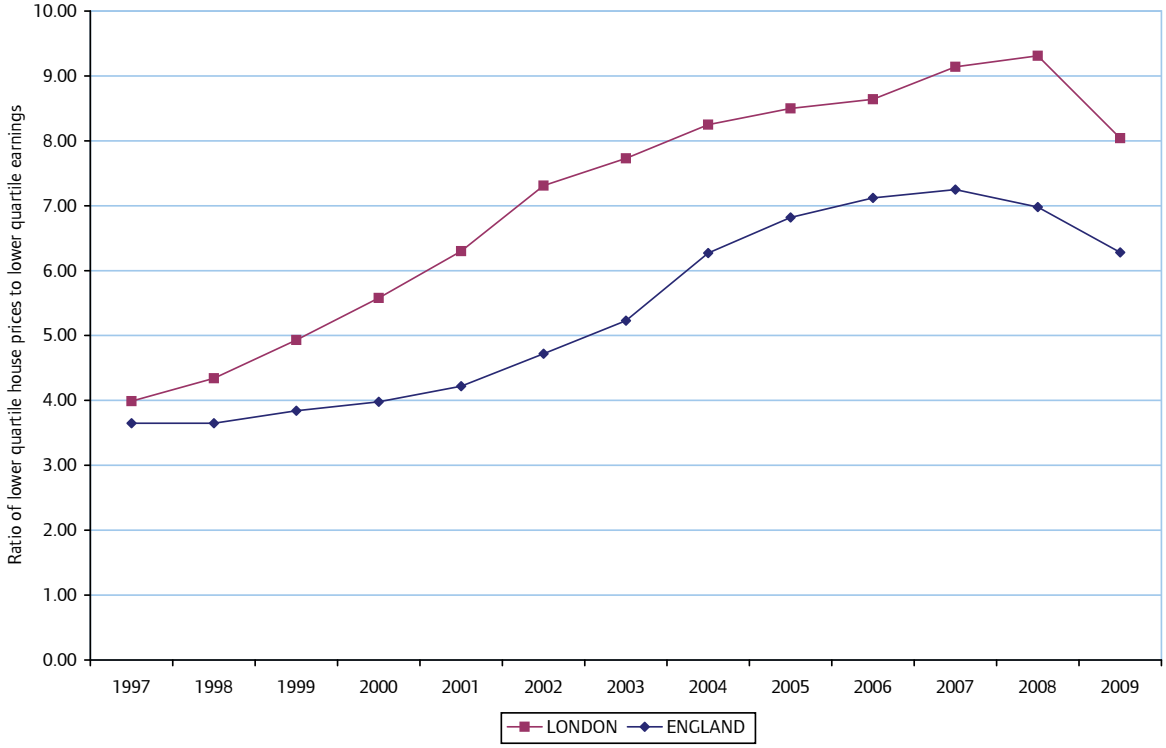
From the point of view of London employers, if they are unable to find sufficient skills amongst residents, they will look to migrants from abroad to fill their jobs, as already occurs (or in the extreme, look to locate in other destinations). However, employers would clearly benefit from being able to employ suitably qualified local residents. As such, the need to raise educational attainment amongst London's young people, and particularly those from low-income backgrounds, is clear. It would help the London economy, and it would help alleviate some of the social problems that currently exist in many of London's deprived neighbourhoods.

Housing

The government's preferred measure of housing affordability is the ratio of lower quartile house prices to lower quartile earnings. Figure 7.3 shows that this ratio increased from 4.0 in 1997 to over 9.0 in London in 2007 and 2008, before decreasing to 8.0 in 2009[3]. People on low incomes have therefore found homes increasingly unaffordable in London since the mid 1990s. As such, home ownership in London is currently not a realistic option for those on low quartile earnings and has become increasingly difficult for those on median incomes.

As a demonstration of this, the average income (including joint incomes) of those buying a home in London in early 2008 was £53,800 for first-time buyers and £88,100 for existing owners[4].

Figure 7.3: Affordability of housing over time (ratio of lower quartile house prices to lower quarter earnings)



Source: CLG, Live tables on housing market and house prices, Table 576

It is therefore not a surprise that the number of households on local authority waiting lists has been growing. In 2009 the figure was over 354,000 (10 per cent of all households), up from 195,000 in 1999[5]. At the same time as housing lists have grown, lettings to social housing in London have fallen from 70,000 to 40,000 per year[6]. The concurrent rise in households on waiting lists and fall in lettings has resulted in an increased demand for private renting.

This is particularly problematic in London where the gap between the cost of social renting and private renting is significantly larger than elsewhere in England. In London, the average weekly social rent is £80 and private rent is £180[7]. Elsewhere, the averages are typically around £60 and £100 respectively. As a result, 25 per cent (about 150,000 households) of those who privately rent in London receive housing benefit to subsidise the cost[8 9] (in total 22 per cent of London households receive housing benefit, mostly made up of those in social housing but also including these private renters).

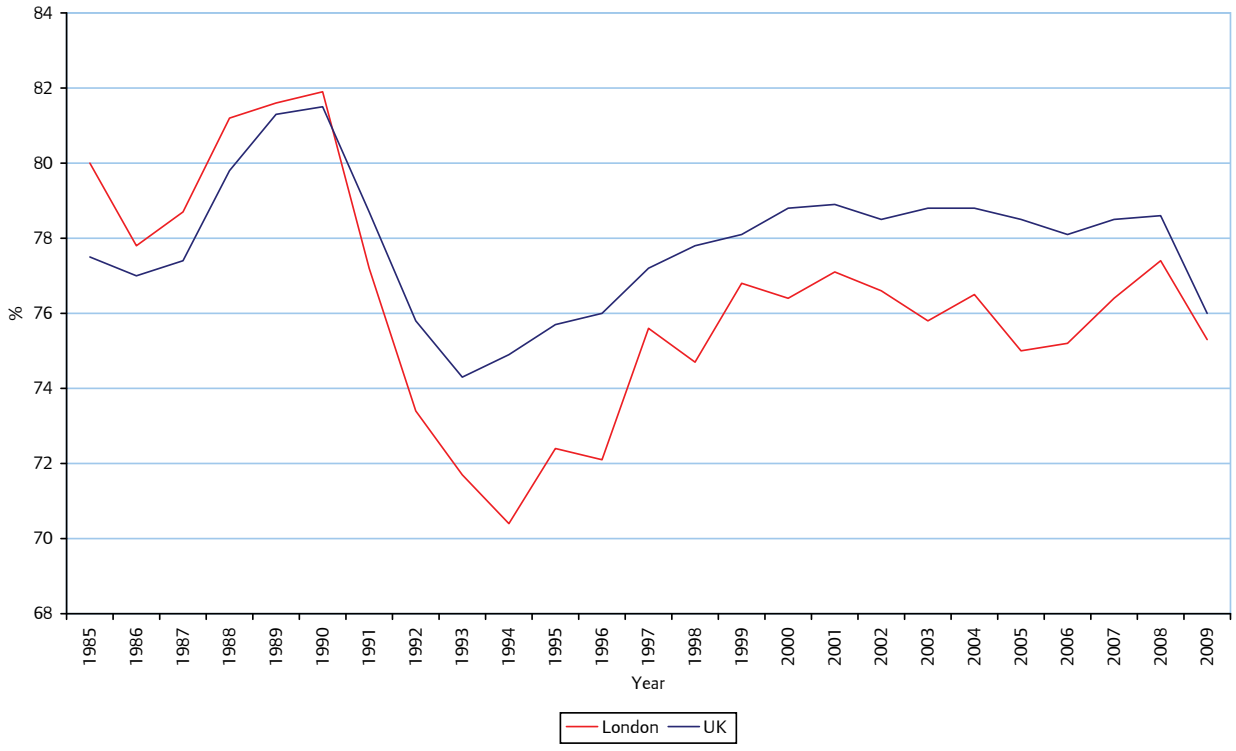
The recent boom in house prices was partially caused by a boom in credit. The tightening of credit conditions over the past year or so has therefore curtailed the growth in house prices. However, rising prices were not just down to lax credit control. As shown in Chapter 6, they have also reflected tight fundamentals in the housing market with the number of new homes struggling to match the increasing size of the London population and rise in the number of households. As such house prices in London are likely to remain high, and relatively unaffordable, compared to elsewhere in the UK.

High house prices across London, together with relatively low incomes for a significant proportion of Londoners[10], mean that there will continue to be a large number of London residents who require assistance to finance their housing requirements whether this be through social housing, or housing benefits to pay towards private sector rents.

Worklessness

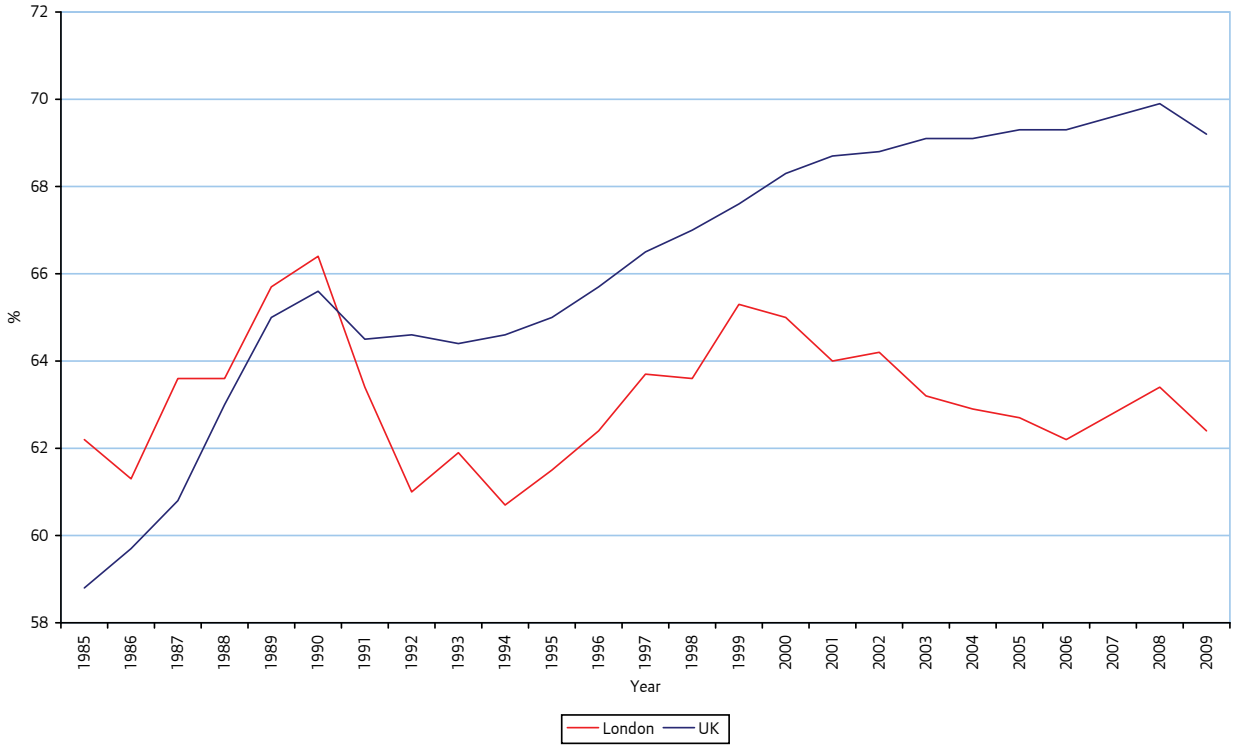
The London labour market is unusual. Demand for labour is high and employment levels were growing until the onset of recession in late 2008 with the number of jobs in London rising by 800,000 from 1996 to September 2008[11] and then falling by 98,000 jobs from December 2008 to September 2009[12]. At the same time however, London's employment rate, and the female rate in particular, has lagged behind that of the UK throughout this period. As Figures 7.4 and 7.5 show, the problem of higher levels of worklessness in London is one that has persisted since the early 1990s.

Figure 7.4: Male employment rates in London and UK over time (%)



Source: Labour Force Survey, ONS

Figure 7.5: Female employment rates in London and the UK over time (%)

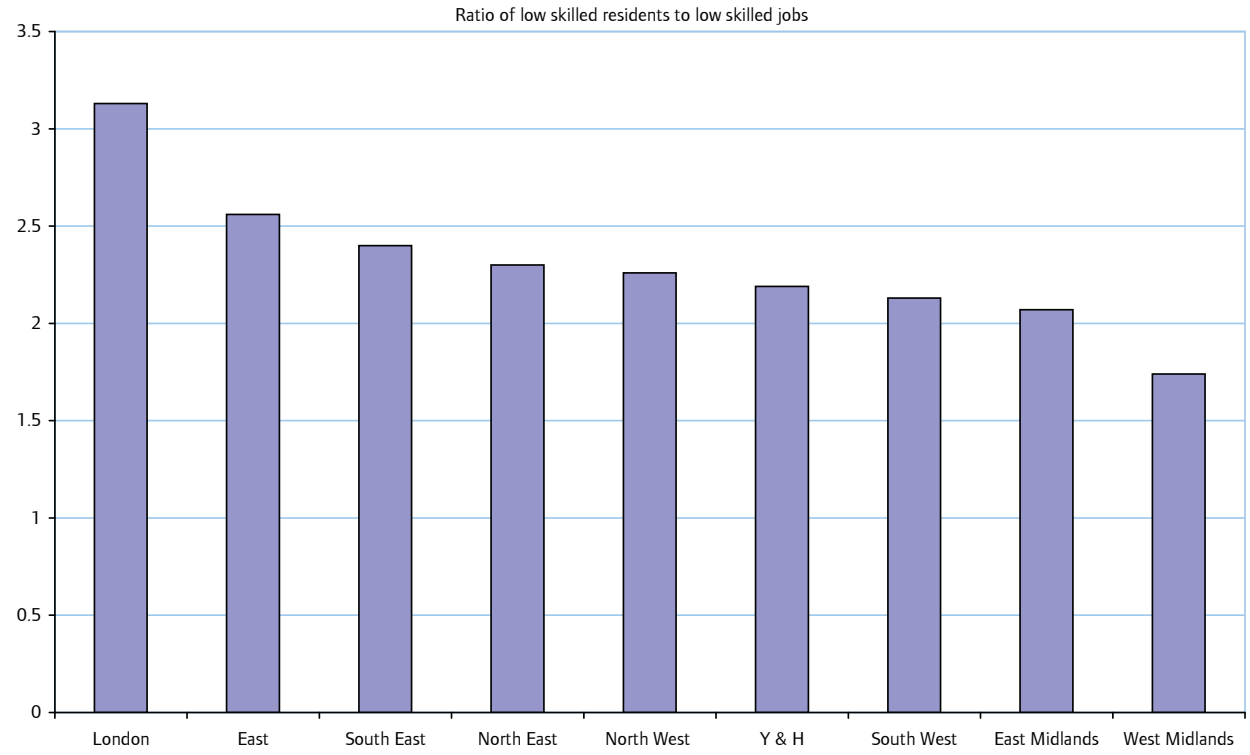


Source: Labour Force Survey, ONS

One of the reasons for worklessness – but not the only reason – is a lack of qualifications amongst some residents. Approximately 13 per cent of London's working age population hold no qualifications and they face stiff competition at the lower end of the job market[13]. As shown in Figure 7.6, London has over 3.0 low skilled residents for every low skilled job as compared with 2.3 in the rest of the UK[14]. Furthermore, relative to other regions, London also has fewer jobs in 'average' pay sectors, which arguably means it can be difficult in London to facilitate progression and provide opportunities in the labour market for those with low or mid level skills.

By contrast, the demand for employees with high skills continues to grow and it is projected that at least 50 per cent of employees in London will have degree level skills by 2020. This compares with the current proportion of working age Londoners with degree level qualifications of 39 per cent[15].

Figure 7.6: Competition for low skilled jobs across the UK



Source: HMT; Labour Force Survey, ONS, 2006

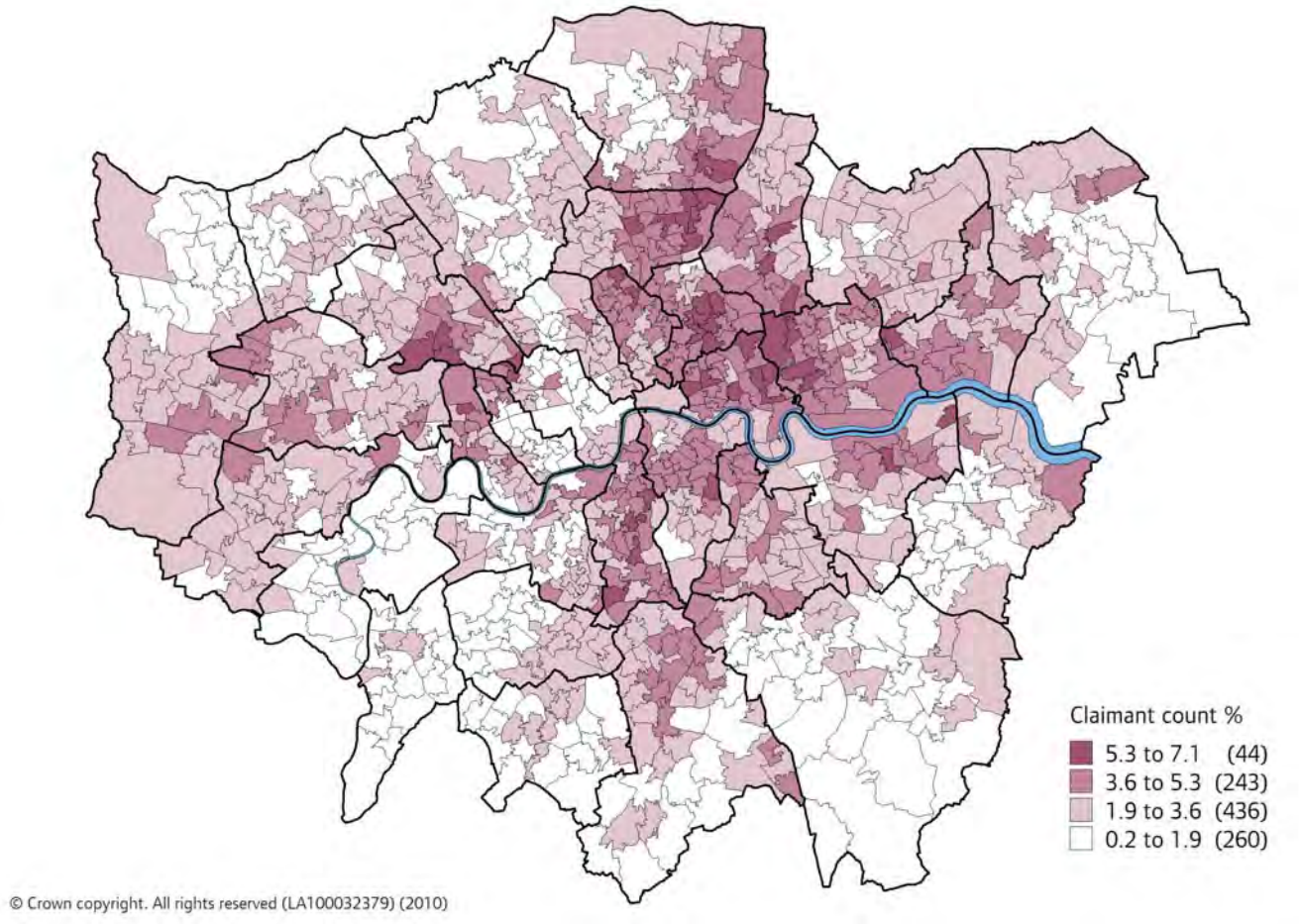
Therefore, London has a partial mismatch between a demand from employers for workers with high qualifications and a significant proportion of its population having relatively low or no qualifications. However, qualifications are not the only factor impacting on worklessness. Research has shown that London's low employment rate is a result of a number of factors including, amongst others, the relatively greater concentration of those groups who experience lower employment rates wherever they are located (lone parents, people from Black, Asian and Minority Ethnic (BAME) communities; the long-term disabled; and those aged 50 or over) in addition to the high cost base and, in particular, the higher costs of child care in London.

There is also a correlation between housing tenure and worklessness. Employment rates for working age residents in private sector housing are above 80 per cent whilst in social housing they are below 50 per cent. Research suggests that the causality between social housing and worklessness works both ways. On the one hand individuals with labour market disadvantages are likely to be disproportionately housed in social housing (generally due to the fact they are unable to finance private sector housing) and therefore it is to be expected that average employment rates would typically be lower amongst social housing tenants. However, evidence also suggests that being a tenant of social housing itself appears to further lower prospects of employment[16].

The existence of high levels of worklessness in London has a number of significant economic consequences. These include: a loss of economic output; an increased fiscal burden, and an impact on the prospects of tomorrow's workforce through its impact on the children of workless adults today.

Figure 7.7 demonstrates the spatial nature of worklessness as proxied by claimant count figures (i.e., the percentage of the total working age population claiming Jobseeker's Allowance). It shows a similar picture to Figure 7.2; there are clear concentrations of unemployment in the north east of London with some pockets in areas of south and west London.

Figure 7.7: Claimant count unemployment in London, December 2009 (claimant count unemployed/mid year population estimate)

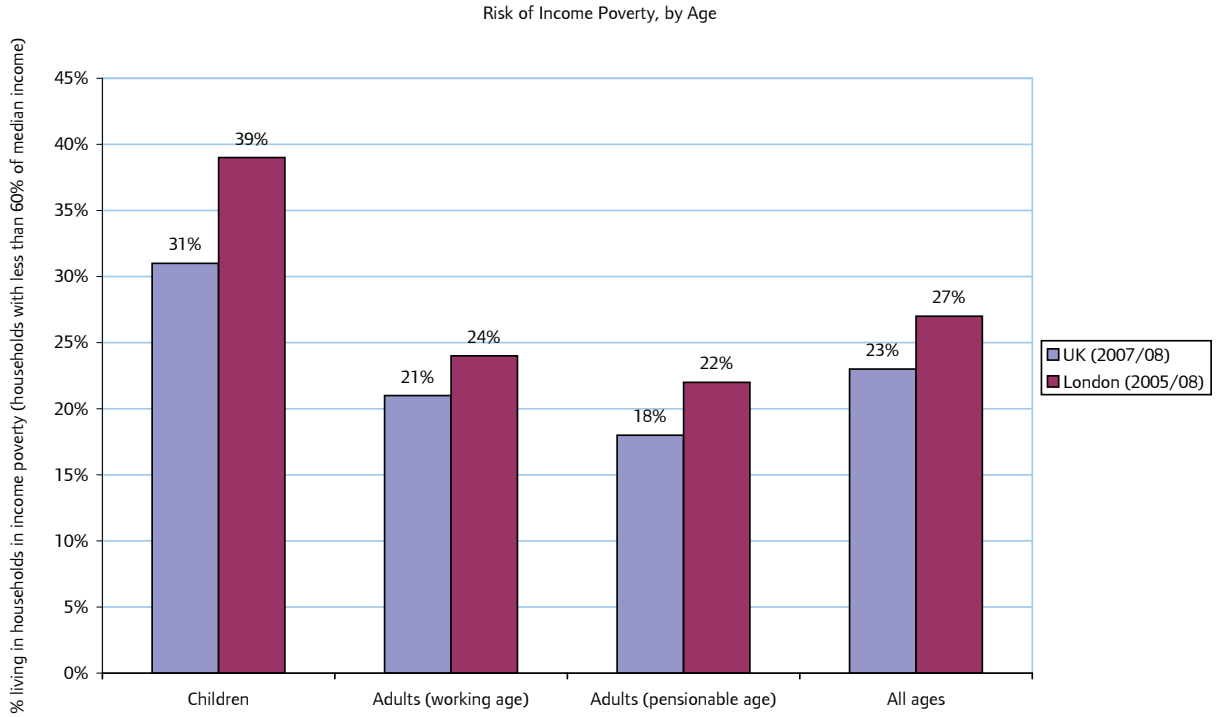


Source: ONS, December 2009

Child Poverty

During 2005-08, nearly two out of five children (39 per cent) in London lived under the poverty line after accounting for housing costs (see Figure 7.8). Rates of child poverty are particularly high in Inner London, where 44 per cent of all children live in poverty[17]. Furthermore, trend data over the last 12 years show that national improvements in child poverty rates have not in general been evident in London, where rates remain stubbornly high (see Figure 7.9).

Figure 7.8: Income poverty in London and the UK



Source: DWP, Households below Average Income (UK figures are based on a single year, London figures are based on 3 year averages).

Figure 7.9: Child poverty in London and the UK over time

Source: Households Below Average Income, DWP

Almost one quarter (23 per cent) of all London's children live in workless households: that is households with no adults in work. London has, by far, the highest percentage of children living in workless households of all regions. Rates are exceptionally high in Inner London where around one third (31 per cent) of all children live in workless households. While the rate is lower in Outer London (19 per cent), it still remains well above the rate in the rest of the UK (16 per cent)[18].

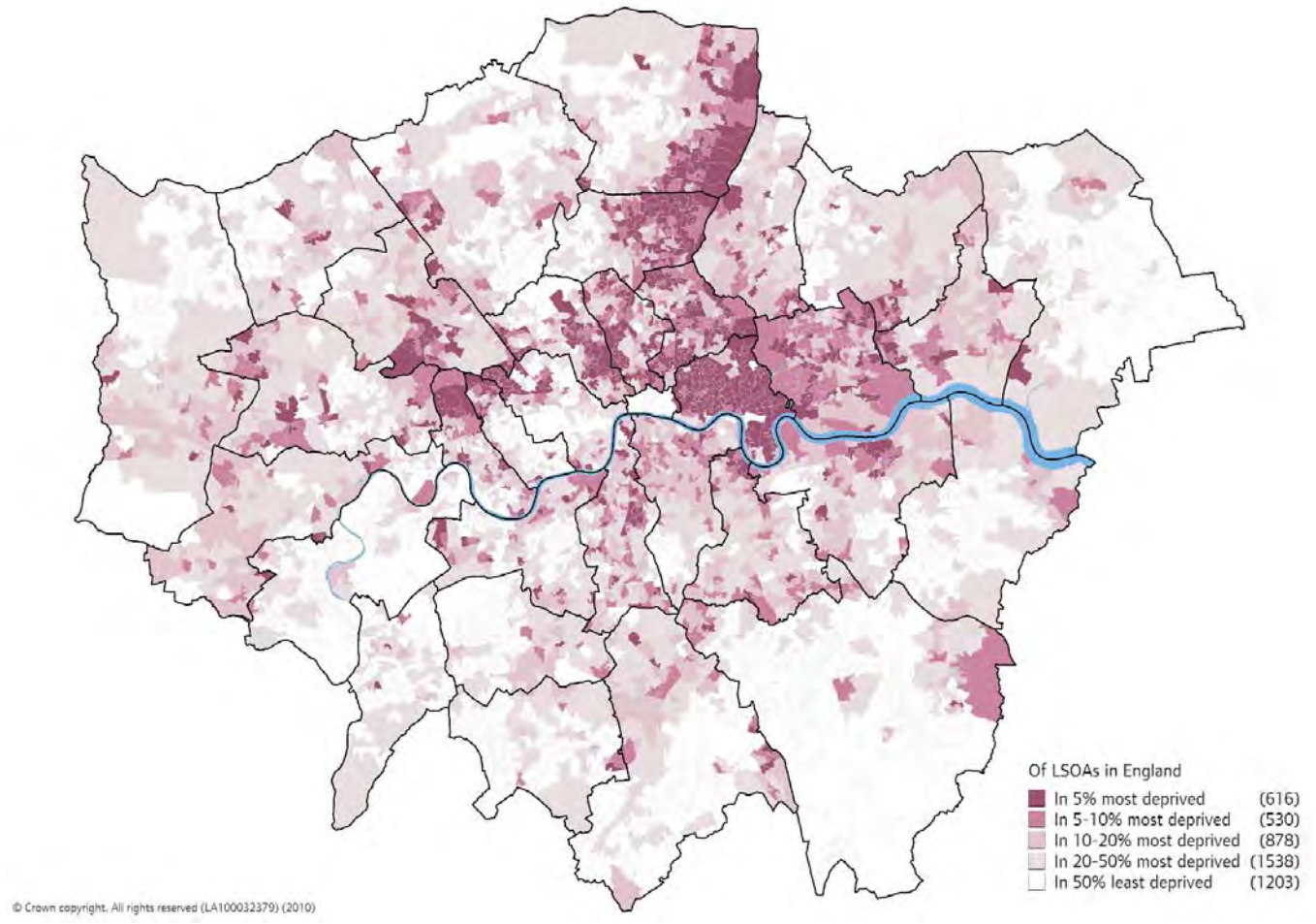
Similarly, in August 2007, 28 per cent of children in London lived in families with at least one adult claiming a key benefit[19] - around 472,400 children. Three quarters of these children lived in lone parent families. Of all local authorities in Great Britain, the four with the highest percentage of children living in families on key benefits are London boroughs: Tower Hamlets (46 per cent), Islington (43 per cent), Newham and Hackney (both 38 per cent). A third of London boroughs appear in the top 5 per cent of GB authorities on this measure[20].

Therefore, child poverty in London is particularly high, with worklessness amongst parents a major contributing factor in many cases. However, it is not the case that all child poverty is due to parental worklessness. Latest UK research for the Joseph Rowntree Foundation found that over half of all UK children in child poverty live in households where at least one parent works. This data showed that child poverty in the UK was shared amongst households as follows; working couple - 44 per cent, lone working parent - 10 per cent, non-working couple - 14 per cent and lone non-working parent - 32 per cent[21]. As such, whilst worklessness is a key cause of child poverty, low pay amongst working parents is also significant for many children living in poverty.

To give an indication of the number of workers in London receiving relatively low wages, currently 15 per cent of full-time employees, and almost half of part-time employees, in London earn less than the living wage of £7.60 per hour[22]. There is strong evidence of a 'low pay, no pay' cycle affecting significant numbers of employees. Low paid employees are more likely to be out of work in the future and those who re-enter the labour market after being unemployed are likely to be in low paid jobs. Low paid individuals therefore are more likely to fall into poverty.

Whether due to parental worklessness or low pay, it is clear that many children live in poverty in London and that they are concentrated geographically in particular areas. In total 13 per cent of LSOAs (Lower Super Output Areas i.e., small local geographical areas) in London are within the top 5 per cent most deprived LSOAs in the country according to the National Indicator 116: The Number of Children in Poverty, published by HMRC[23], and 43 per cent of London LSOAs are within the top 20 per cent most deprived LSOAs in the country. Figure 7.10 shows the location of these areas with a clear concentration towards the North and East of Inner London. At the local authority level, Tower Hamlets, Hackney, Islington, Newham and Haringey are the five boroughs with the highest rates of children living in income poverty in England. In each of these boroughs at least 44 per cent of children under 16 are living in income poverty by this measure, with 63 per cent of children under 16 in Tower Hamlets living in poverty.

Figure 7.10: Child poverty, 2007, by Lower Super Output Area



Source: National Indicator 116: The Proportion of Children in Poverty, 2007, HMRC

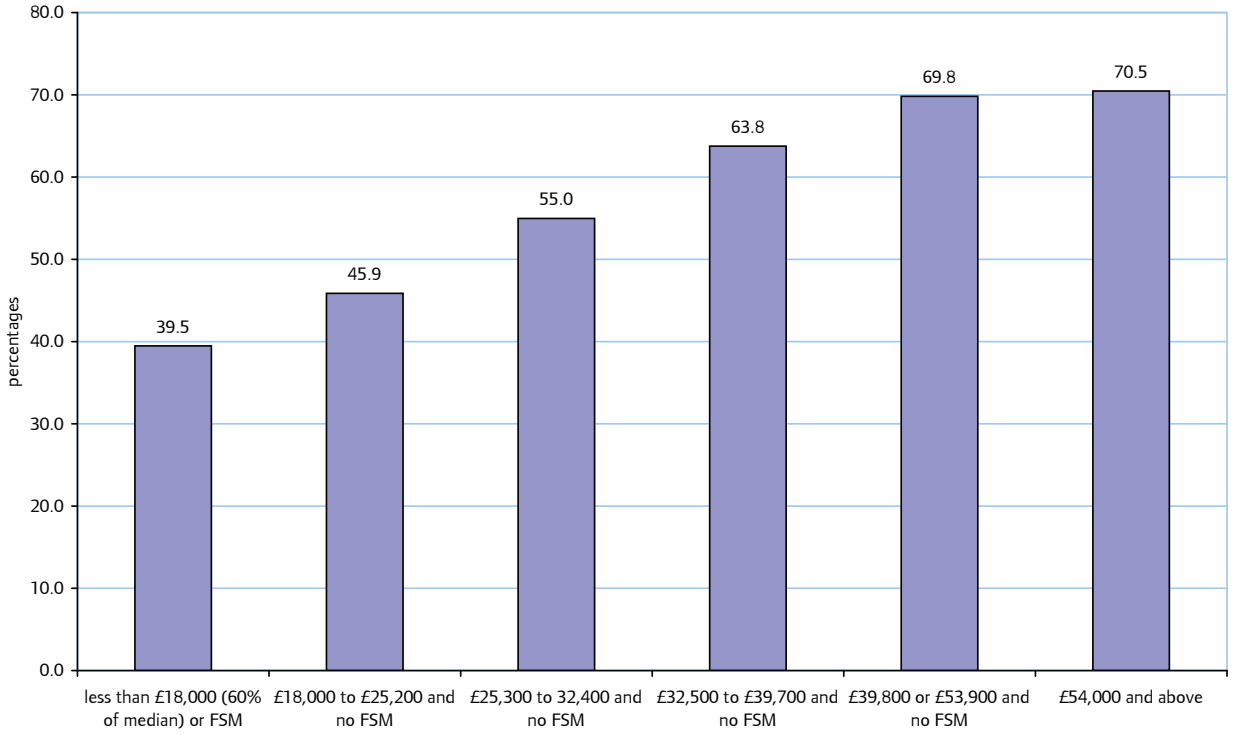
The risks of persistent poverty for a child are accentuated by a number of factors. These include having a larger number of siblings, living in a one-parent household, and living in a household headed by an adult with low educational attainment[24].

Birth cohort studies highlight the impact of poverty on life chances across the life course and between generations. People who experienced poverty in childhood are more likely to have low incomes and worse employment prospects than those who did not have poor childhoods, whilst children from poor backgrounds are less likely than other children to continue in school after age 16, or to attain educational qualifications. Meanwhile, women who experience poverty in childhood are more likely to become mothers at a young age and lone parents than those who did not. There is also a significant relationship between poverty and ill health and disability[25].

Educational attainment lessens the risk of poverty by improving employment opportunities and wage potential. However, birth cohort studies have observed that education often serves as a 'transmission mechanism' for disadvantage: childhood poverty is associated with lower educational attainment which, in turn, is associated with low income in adulthood[26].

Figure 7.11 illustrates this issue. It shows that educational attainment amongst children is strongly correlated to parental incomes. Indeed, the differences between pupils' GCSE results are larger when comparing pupils in the same ethnic group but of high and low socio-economic status than when comparing the difference between ethnic groups.

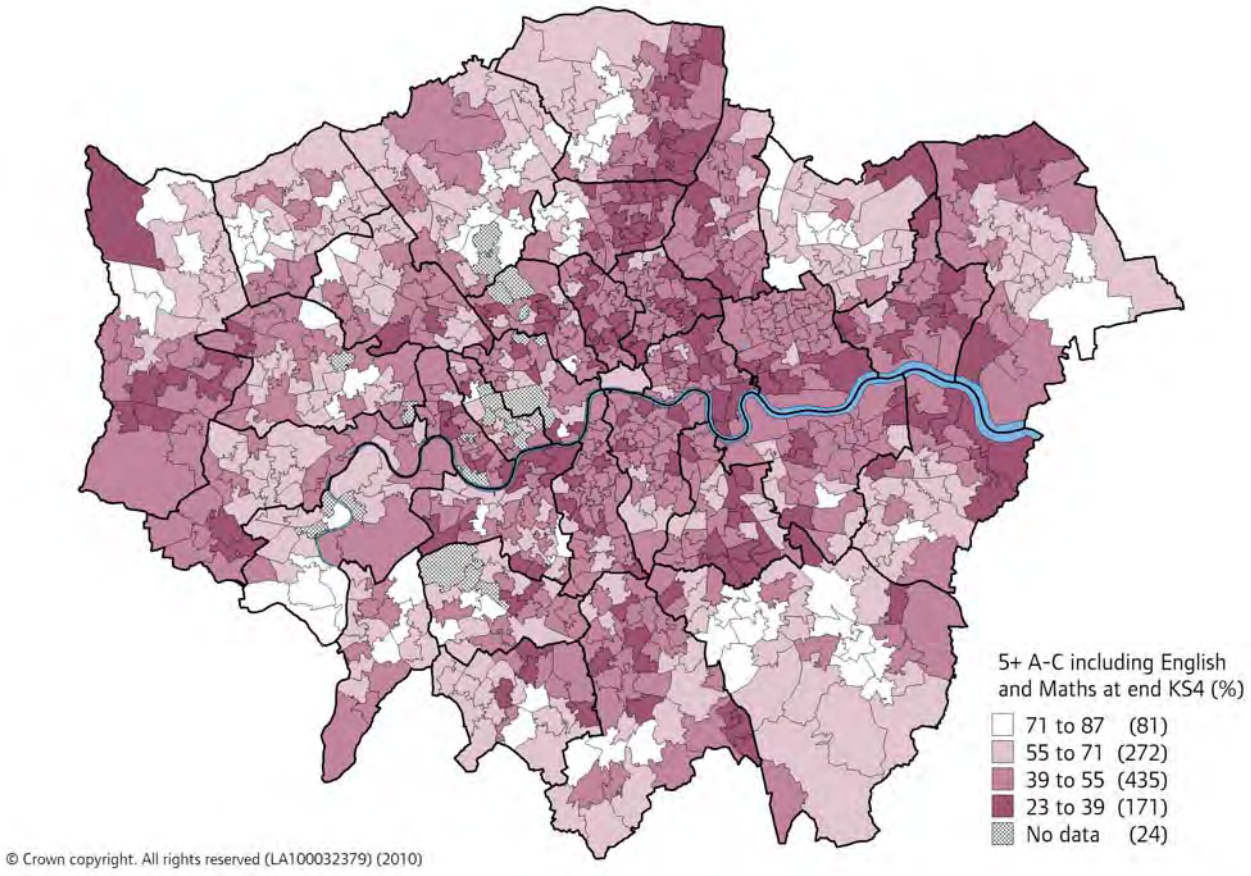
Figure 7.11: Pupils (aged 15 in 2004) achieving 5 or more GCSE A*-C grades or equivalent by home income group and Free School Meals (FSM) entitlement



Source: DMAG using merged 2002 – 2005 LPD

A good illustration of this is the fact that whilst overall white British children in London achieve higher results than those from BAME groups at GCSE level, this is not the case if we constrain the sample to just look at those in each ethnic group who live in poverty (measured by those receiving free school meals). When this is done it is found that amongst pupils on free school meals it is actually White British children who perform worst of the ethnic groups with 47 per cent of White British children on free school meals not achieving a single grade D at GCSE[27].

Figure 7.12: Spatial distribution of educational attainment in London (children gaining 5 A*-C grades at end of Key Stage 4 (KS4) %, 2009)



Source: DCSF, 2009

Figure 7.12 demonstrates that poor educational attainment is also concentrated in the north and north-East of the city with smaller pockets in west and south London.

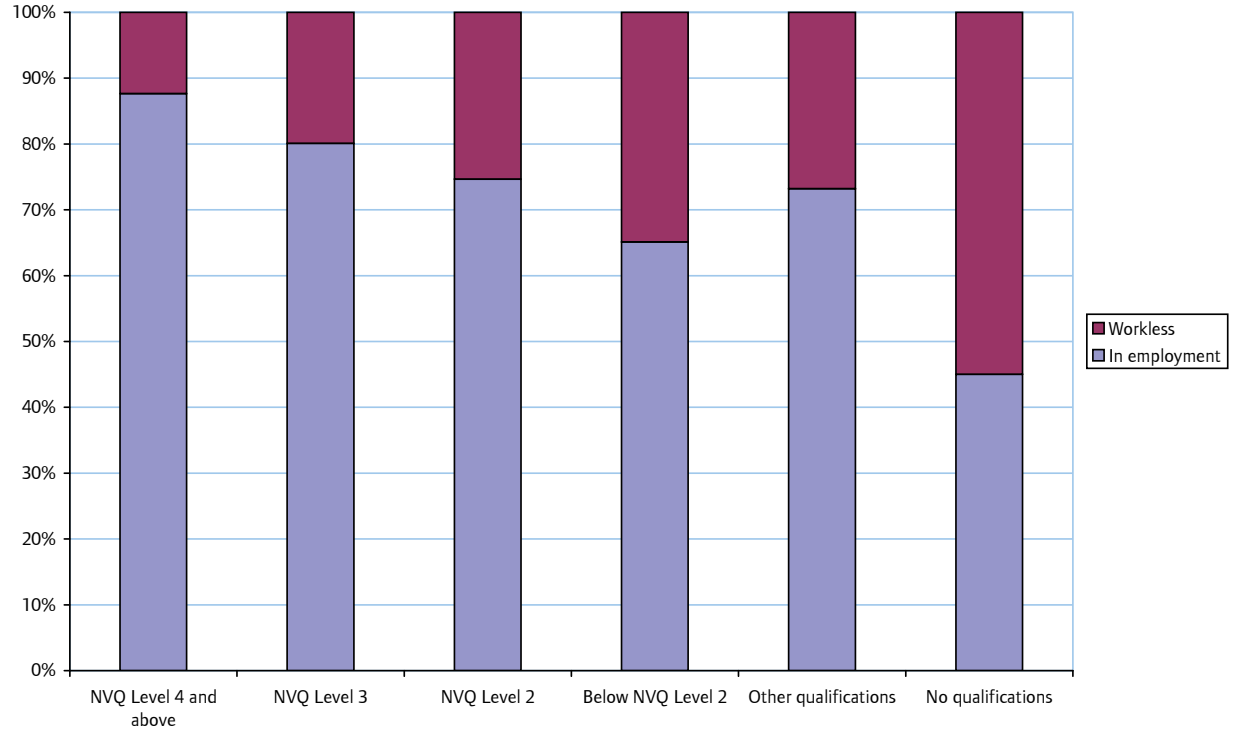
In summary, in addition to the economic costs of dealing with crime, poor health and other similar social problems often associated with poverty, there is the additional economic impact created by the fact that children who grow up in poverty generally have low educational attainment and therefore will on average be less productive workers as adults. That 39 per cent of London's children are currently living in poverty is a major economic issue for the future as it suggests there are a large number of children in London who may in the future struggle as adults to compete effectively for jobs in London's labour market.

This chapter has illustrated that a significant proportion of Londoners live in poverty, cycling through low-pay jobs and worklessness, and relying on benefit payments, particularly in terms of housing to supplement their incomes. In particular, this chapter has illustrated the high proportion (four out of ten) of children who live in poverty in London, and how many risk becoming adults living in poverty due to low educational attainment.

By contrast, we have employers increasingly seeking high-skilled individuals to fill jobs in London. Already, 55 per cent of 25-39 year olds working in London have a degree while across all age groups the proportion is over 45 per cent[28].

Figure 7.13 shows employment rates by qualification. It shows that employment rates rise as an individual's qualifications rise. It shows a major benefit to having a degree in London (NVQ Level 4+ qualifications). At the lower end of the scale, it additionally shows the importance of having at least a level 1 qualification compared to having no qualifications at all.

Figure 7.13: Labour market status by qualification level

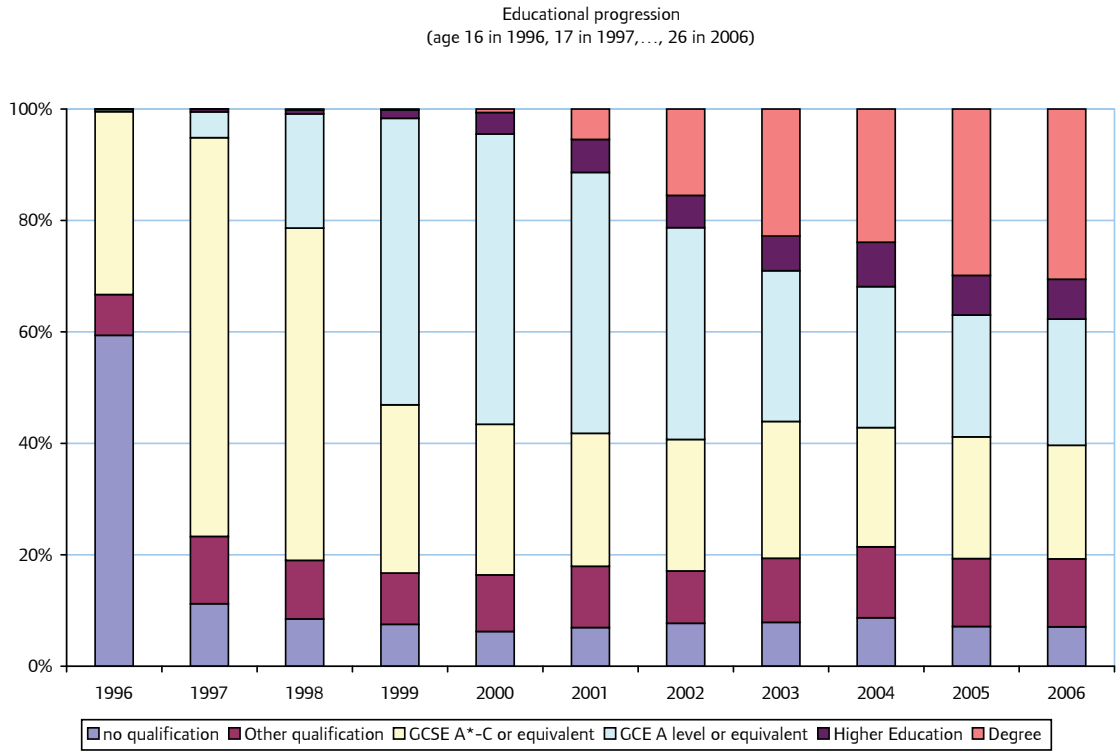


Source: ONS, APS 2008

Data excludes full-time students

Meanwhile, evidence also suggests progression amongst low-skilled adults to higher level qualifications over time is fairly minimal. Figure 7.14 follows the results from the Labour Force Survey of a cohort who were 16 in 1996 and 26 in 2006. The chart suggests that beyond the age of 19 (and certainly beyond the age of 21) there is little improvement made in terms of obtaining qualifications by those who have level 2 or below qualifications.

Figure 7.14: Qualification profile of different age groups



Source: Spring quarters from the Labour Force Survey, 1996-2006

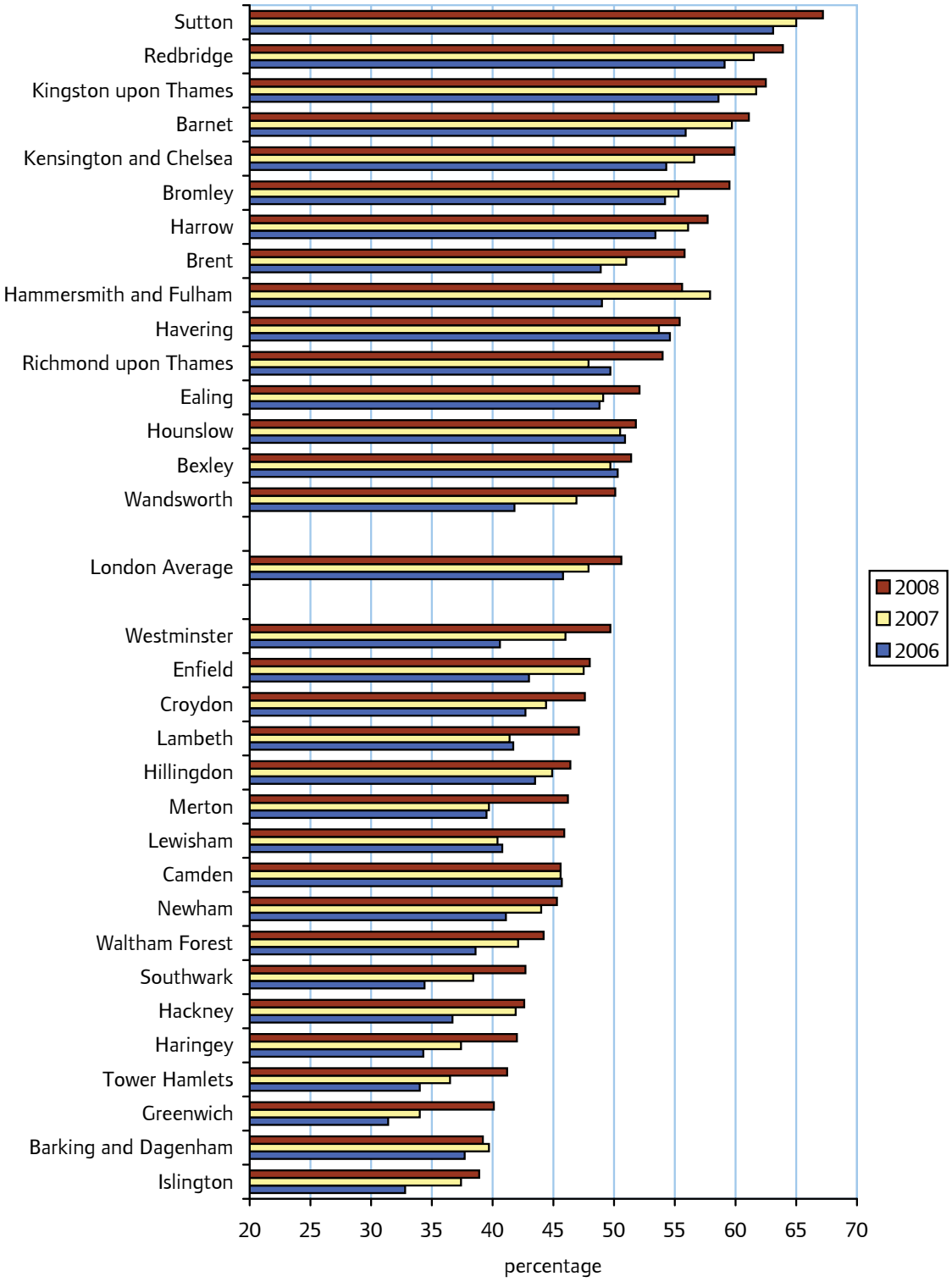
All of the above suggests that successful education of children (all children, but particularly those from disadvantaged backgrounds) is vital for addressing future issues of poverty and social mobility in London. The fact that it is very difficult to raise the educational performance of children from disadvantaged backgrounds is clear to see by the evidence that shows current childhood educational attainment so strongly correlated to parental incomes. Nevertheless, with regard to potential public sector interventions, any policies that can successfully raise the educational standards of children from disadvantaged backgrounds would appear to have huge potential benefits for London in terms of both providing a better trained workforce to future London employers and in helping to address the social problems, deprivation and lack of social mobility that exist across much of London today.

Qualifications of young people in London

With London's job market consisting of a much greater share of jobs requiring higher qualifications than other regions, there is a real need for London's young people to obtain good qualifications if they are to successfully compete in the labour market upon completion of their studies. This is particularly important as they will face extra competition from many highly qualified domestic and international migrants moving to London aged in their 20's.

The good news is that headline qualification achievements have been improving amongst London's young people. The numbers obtaining both level 2 and level 3 qualifications has risen sharply in recent years. Additionally, it is also the case that a higher proportion of London's young people go on to higher or further education than do young people from other UK regions.

Figure 7.15: Pupils obtaining 5 GCSEs at A*-C (including English and Maths) by London borough over the past three years



Source: DCSF

Maintained Schools Only - Share of pupils at end of Key Stage 4

GCSE results have improved rapidly amongst London's children over recent years with the percentage obtaining 5 A*-C grades rising from 45 per cent in 2000 to 64 per cent in 2008. However, ability in English and Mathematics are crucial to many employment opportunities, and so it is often considered preferable to consider the data on the numbers of pupils obtaining 5 GCSEs at A*-C including English and Mathematics.

Figure 7.15 shows this data for London boroughs. It shows that in 2008, 50.6 per cent of London pupils achieved 5 A*-C GCSEs including English and Maths, an increase from 45.8 per cent in 2006.

Table 7.1 compares this London data for 2008 with other English regions and by gender. It shows that Outer London has a higher share of pupils (53.0 per cent) achieving 5 GCSEs at A*-C including English and Mathematics than any other UK region. Average results for Inner London (45.4 per cent), however, are below the England average. It is also noticeable from Table 7.1 that there is a large gender gap in achievement with only 46.4 per cent of boys obtaining this qualification level in London in 2008 compared to 55.0 per cent of girls.

Table 7.1: GCSEs, 5 A*-C including English and Mathematics, 2007/08

	Boys	Girls	Total
London	46.4	55.0	50.6
Inner London	40.6	50.1	45.4
Outer London	48.9	57.2	53.0
Yorkshire and the Humber	40.6	48.3	44.4
North East	41.5	48.5	44.9
West Midlands	41.6	50.9	46.1
East Midlands	43.4	50.8	47.0
North West	43.7	51.3	47.4
South West	44.9	53.8	49.2
East of England	46.0	54.7	50.3
South East	48.1	55.4	51.7
TOTAL (Maintained sector, including CTCs and Academies)	44.4	52.4	48.3
England Average	43.2	52.3	47.6

Source: DCSF

After obtaining GCSEs or other level 2 qualifications, the next qualification target is level 3 qualifications. The share of London's 19 year olds who have obtained level 3 qualifications was 51.9 per cent in 2008 which shows a considerable improvement on the 2005 level of 45.8 per cent (see Table 7.2).

It should be noted that the increases in level 3 attainment in London (and in England) over the 2005 to 2008 period occurred via increases in the award of Vocational Related Qualification (VRQ) level 3 qualifications. At the same time, the percentage who achieved level 3 qualifications through A-levels[29] in London only remained stable at around 41.4 per cent. This distinction is of importance as it is those who obtain level 3 qualifications through A-levels or related qualifications, rather than VRQs, who are most likely to progress onto Higher Education[30]. VRQs are knowledge-based vocational qualifications earned via taught

courses. The increase in attainment in this qualification category may be partly linked to the increased accreditation of VRQ courses over recent years. In 2001 there were just 128 accredited VRQs in England. By 2008, this number had risen substantially to 2,139 accredited VRQs[31].

Table 7.2: Percentage of 19 year olds obtaining level 3 qualifications, by route of attainment, 2005 and 2008

	London		England	
	2005	2008	2005	2008
AS, A-levels, AVCEs or Advanced GNVQs	41.3%	41.4%	38.4%	37.0%
Advanced Apprenticeship	0.2%	0.4%	0.5%	0.8%
NVQ Level 3	0.4%	0.7%	0.9%	1.3%
VRQ Level 3	4.0%	8.9%	5.6%	10.4%
International Baccalaureate	0.0%	0.5%	0.0%	0.3%
Total with Level 3				
Per cent	45.8%	51.9%	45.4%	49.8%
Number	37,000	44,000	281,000	322,000

Source: Department of Children, Schools and Families matched administrative dataset

Table 7.2 shows that young people in London perform slightly better than the England average at obtaining level 3 qualifications. However, interestingly a much larger proportion of London's young people go on to Higher and Further Education. The most recent published data on this, for 2000, showed 36 per cent of 18 and 19 year olds in London continuing onto Higher or Further Education compared to 30 per cent for England overall[32]. Indications are that this trend towards higher participation rates amongst young Londoners has continued since this date.

People vs. places

This Chapter has looked at some of the main socio-economic issues facing London including worklessness, poverty, education and housing. It also describes how many of the worst outcomes in these socio-economic indicators are frequently spatially concentrated in pockets of London, particularly areas of North and East London. Figures 7.2, 7.7 and 7.12 clearly demonstrate this spatial concentration. Over the last 40 years many policy interventions have been made in these areas, in line with national trends for spatial policies aimed at improving the socio-economic outcomes of people through interventions in *places* – so called area-based initiatives (hereafter ABIs).

However, there is much evidence to suggest that over this time period spatial inequality has hardly reduced. Indeed the recently published National Equality Panel report suggests that spatial differentials are more

pronounced today than ever before with the difference in net wealth between the top 10 per cent richest areas and the bottom 10 per cent being a ratio of 14:1[33]. Some reasons why such initiatives have not been as successful as was hoped are set out below.

First, while there is a clear *correlation* between individuals or families with high levels of socio-economic disadvantage and deprived areas, the *causality* of a neighbourhood's characteristics on its residents is much less clear, even though causality is often a key rationale given in policy strategies. One example of this is the Government's Neighbourhood Renewal Strategy in 2001 which stated that "in 10 to 20 years no-one should be seriously disadvantaged by where they live"[34]. However, a variety of studies have found that area-based effects on outcomes such as childhood development, health, employment and earnings, educational attainments, delinquency and teen pregnancy are very minimal in comparison to family characteristics. For instance, an analysis using ward-level data from the British Household Panel Survey from 1991-1998 found that the "association of poor outcomes and poor places is simply an association amongst individuals"[35].

Another important issue is that housing and labour market mobility means that when individuals do profit from ABIs, they often move out of the area, leaving more deprived people to move in. For instance, academics such as Paul Cheshire have shown that when individuals do improve their skills base or other attributes, as a result of renewal policies or otherwise, they tend to move out of deprived areas and more unskilled and disadvantaged people move in[36]. In a study of Harlesden which received a City Challenge grant from 1993 to 1998, Cheshire found that those whose skills improved moved out of the area and were replaced by people with an even lower skills base[37]. The result is that some areas remain areas of deprivation despite continuous policy interventions. This is particularly an issue for areas with a concentration of social housing – where mobility tends to be much lower than for other types of housing tenure.

For example, the National Equality Panel report finds that concentrations of social-housing are generally connected with high concentrations of deprivation. In particular it states that "only 4 per cent of those of working age living in social housing have degrees, and nearly half have no or only low qualifications. Only half of men and 42 per cent of women of working age living in social housing are in paid work, compared with 89 per cent of men and 91 per cent of women in households with a mortgage"[38]. The report also finds that "only a few thousand social tenants each year move home for job-related reasons while remaining as social tenants (even within the same area), out of a total of nearly 4 million"[39].

This means that it is likely to be the non-socially-housed tenants that are mobile, whereas the poorest are more likely to be stuck in an area due to the nature of their housing. As a result, it could be argued that reducing the spatial concentration of social-housing might be a way of reducing spatially-concentrated deprivation. However even if areas are made more equal in terms of their distribution of housing, the underlying inequality amongst individuals will still remain due to disparities in education and skills, and therefore differing opportunities in the labour market.

Whilst this area is complex, what is clear is that area-based initiatives are not sufficient in tackling inequality alone: national and regional macro-economic policies are essential in creating the job opportunities and necessary housing needed to reduce disparities in the long-term.

Appendix 1: The role of the public sector

The Mayor's planning, transport and economic development activities, which are underpinned by the strategies that this evidence base seeks to influence, are a major part of the public sector in London.

This appendix aims to compliment the evidence on London's economy presented in the main document – on the drivers and implications of growth and risks to future success – with examples of the economic rationale behind what the public sector agencies of the Mayor do in practice. In these areas and others the public sector intervenes and provides goods and services to alleviate market failures, with the goal of improving economic efficiency. In addition, the government and the Mayor have a mandate to intervene on equity grounds, when the market efficient distribution of income is not viewed as socially desirable and to improve social welfare.

Firstly the appendix outlines the basis for public sector intervention in terms of market failures and provides definitions of these failures. Thereafter follows a discussion of the rationale, benefits and costs of some of the activities undertaken by the Mayor's agencies as a result of the Mayor's strategies. Then considered more generally are principles that govern when it is worthwhile for the public sector to intervene in the market, and some of the key risks and trade-offs associated with intervention. The appendix concludes with consideration of equity-based interventions.

The basis for public sector intervention

The government is required first and foremost to enforce property rights and contracts (through policing and law courts), without which individuals and firms would find it difficult to trade. With such arrangements in place free markets are, under certain ideal conditions, the most effective way to organise economic activity – with prices acting to ensure an efficient allocation of resources.

However, real-world markets are often subject to failures that prevent an efficient allocation of resources and harm economic performance as a result. The following key market failures imply scope for government activity to improve resource allocation within the economy:

- Public goods
- Externalities
- Imperfect information
- Failure of competition
- Episodes of disequilibrium (recessions/booms)

The government and the Bank of England generally have sole responsibility for responding to episodes of disequilibrium (the recent recession for example) with fiscal and monetary policy instruments.

The Mayor's planning, transport and economic development activities are underpinned, in the main, by one or more of the other market failures. It is therefore useful to summarise the definitions of these failures before describing the rationale they provide for the Mayor's activities, and associated benefits and costs[1].

Public goods are both non-rival (one person's consumption of a good or service does not detract from another person's consumption) and non-excludable (where it is not possible to exclude someone from the benefits of a good). These two characteristics imply that public goods will be supplied by the market in quantities below those that are socially optimal. Individuals or firms may be able to cooperate to provide public goods, but they may fail to do so if belonging to a large and non-homogenous group. In such cases the public sector will commonly provide public goods for the collective benefit of society. A simple example is street lighting provided by local authorities for the collective benefit and safety of resident populations.

Externalities are costs or benefits borne or received by parties not directly involved in an economic transaction, and they can be negative or positive. In the presence of negative externalities that are not factored into the price of goods and services, such goods and services will be over-supplied by the market compared with socially optimal levels. Conversely positive externalities not represented in market prices lead

to goods and services being delivered in lower than socially optimal quantities. The public sector can respond to externalities in a variety of ways including taxes and subsidies to discourage or promote consumption, by imposing regulatory controls, by creating markets for an externality, by issuing property rights, or direct provision of goods and services. Perhaps the best known externality is carbon emissions, whose costs have not been incorporated into the prices of derivative products leading to excessive greenhouse gasses and global warming.

Imperfect information is characterised by the inability of individuals or firms to correctly evaluate the consequences of their actions, or by different levels of information between buyers and sellers that may lead to reluctance to trade (asymmetric information). Most markets manage to function without perfect information, but information problems can sometimes be cause for the public sector to intervene in the market. For example, when providers of finance cannot effectively assess the risk of loans to SMEs without recourse to collateral that SMEs may not have, the government may act to guarantee such loans.

Failure of competition can occur as a result of dominance and anti-competitive practices by one firm or a small number of firms in a market. Such cases are generally brought to the attention of and addressed by the national competition authorities, and regulation of private markets subject to competition failures is not a direct responsibility of the Mayor. However, the Mayor's agencies can still play an important role in understanding how particular markets operate especially in relation to London in order, where relevant, to influence regulatory and other government action.

In other relatively rare circumstances competition is not viable when supply to a market is accomplished most efficiently by a single firm. Such a situation is known as natural monopoly and can occur where fixed costs are very high and/or entry by potential competitors is very difficult (or impossible). Examples of natural monopolies are utilities such as water and electricity, for which it is very expensive to build additional (competitive) networks of pipes and cables respectively.

Where natural monopolies occur the public sector may regulate to prevent abuse of monopoly power, intervene to engender competition by multiple firms on a single network, or the public sector may take ownership and run the industry itself. The latter arrangement has prevailed in the case of Transport for London's operation of London's Underground network, an example which is discussed further below.

Activities undertaken by the Mayor's agencies

The Mayor's planning, transport and economic development agencies and activities are principally a means to help alleviate the market failures described above. Greater London Authority (GLA) planning and Transport for London (TfL) transport operations are related to specific market failures. Interventions by the London Development Agency (LDA), on the other hand, are in response to a number of different market failures that reflect the wide spectrum of its economic development activities.

All interventions by the Mayor's agencies carry both benefits and costs (this applies to any public sector intervention for reasons discussed further below). Therefore discussion of potential benefits and costs accompany market failure arguments for the Mayor's planning, transport and economic development activities.

Planning

The Mayor has a statutory responsibility to produce an overarching spatial development strategy for London. This strategy is known as the London Plan, a draft replacement of which has recently been issued by the Mayor along with the transport and economic development strategies.

The London Plan provides a framework for the development and use of land in London; it is a high level planning document that, like all forms of planning, is aimed at correcting market failure. The principle market failure rationale for planning is externalities that would arise if individuals and firms were only to account for their private costs and benefits when developing land for personal or business use, and not the costs and benefits imposed on other individuals, firms and future generations.

In order to help prevent externalities that result in sub-optimal resource allocation, the public sector provides planning activities and legislation as a form of land use regulation – which importantly has both benefits and costs. Awareness of the benefits and costs of land use regulation has important implications for the design of the planning system and statutory planning documents such as the London Plan.

The Barker Review of land use planning that was published in 2006 highlighted the economic benefits and costs of planning policy and procedures[2]. The benefits are termed broadly as protecting and enhancing wider environmental and social goals by addressing deficiencies in the free market for land use and development (reflecting externalities that the planning system seeks to address).

More direct benefits are said to derive from support of the planning system for investment and competition through matching compatible land uses (creating certainty for investors), helping to deliver regeneration and public goods. Also cited are potential benefits from labour market flexibility facilitated by transport developments and from innovation in firms located in spatial clusters.

Regarding costs, the Review indicates that planning delays and complexity can impose direct financial costs and burdens on businesses and may result in lost opportunities for firms when timely decision making is crucial. Planning delays are also said potentially to impose hidden economic costs, including reducing competition by delaying or deterring new entrants to markets.

It is argued that delays to major infrastructure projects postpone positive spillover effects in the economy, and in the case of major transport projects may have implications for labour market flexibility (Crossrail for instance). The Review also highlights a risk that the planning system may impede innovation if it restricts agglomerations of economic activity. Thus attempts to 'disperse' economic activity are likely to prove detrimental to economic growth.

In conclusion the Review stated that improvements to the planning system should centre on making it more responsive to market and price signals, taking full account of all benefits of development even when these are diffuse and long-term (perhaps set against more obvious and short-term costs of development).

The Review indicated that administrative boundaries currently in place for planning authorities can exacerbate tendencies that work against the interests of development. In this context the London Plan serves a vital purpose as the focal point for local development plans of the London boroughs.

Transport

TfL is responsible for much of the public transport in London and is accountable to the Mayor. It is responsible for delivering the Mayor's Transport Strategy which includes managing a range of public transport including the London Underground network and London buses.

The transport system in London first came under the control of the public sector in the 1930s, prior to which private funding had been responsible for the expansion of the London Underground network and the operation of bus services. The rationale for integration of London's transport systems under the control of a single public organisation reflects the transport network in London having characteristics of a natural monopoly with network effects.

The natural monopoly characteristics reflect high fixed costs of investment (particularly the Underground network) leading to large economies of scale in relation to market size. Related network effects as they apply to the London transport network are externalities positively influencing demand on certain routes as a result of construction of and coordination with other routes (for example Underground lines meeting at strategic hub locations).

Public control of the transport system in London is not absolute, with above ground train services commonly operated by rail franchise operators (but with the track in public control). Whilst public control has the benefits of being able to coordinate myriad transport routes effectively it has also over decades resulted in under investment, in the London Underground network in particular. This under-investment is one of the areas that TfL is seeking to address through major programmes of renewal, rebuilding and refurbishment.

Other key actions set out in the Mayor's Transport Strategy involve better integration of rail with TfL services, a cycle hire scheme and cycle networks, improved information for walking journeys and easier interchange for all forms of transport. Although markets for all of these activities exist in theory, it can be argued that they would not be provided and coordinated at socially optimal levels if not under the control of a single operator such as TfL.

However, like all public sector activities a clear rationale is not sufficient grounds for investment unless resulting benefits outweigh the costs (a theme that is returned to below). In the case of TfL investments, benefits may be those to transport users in the form of time savings, or for interventions that promote walking and cycling benefits from reduced carbon emissions or improved health benefits, or indirect time savings resulting from reduced congestion. Furthermore, wider economic benefits can derive from transport projects (such as Crossrail) through their ability to enhance very productive agglomerations of activity.

Economic development

The LDA is the Mayor's agency responsible for delivering sustainable economic development in London and uses the Mayor's Economic Development Strategy to help do so. The scope of activities that can be defined as contributing to economic development is broad and the LDA faces significant choice in how to best use its limited resources for the benefit of London.

A range of market failures provide a rationale for the LDA to intervene on issues including climate change, skills and employment, business support and international promotion. All of these areas are considered in the Economic Development Strategy.

In the areas of skills and employment for example, there are positive externalities felt in the wider economy from provision of basic skills and bringing people back into employment. If left to the private sector alone (employers and recruitment agencies) it is likely that the level of support for those without basic skills and employment would be sub-optimal from the point of view of society.

The Economic Development Strategy also has a focus on support for business which is often underpinned by information problems. Firms may not have enough information to make efficient decisions or asymmetric information about the quality and relevance of support available privately which may make firms reluctant to purchase services. The result is efficiency losses from the reluctance to trade, which provision by the public sector can help to avert.

Climate change is an issue that the LDA like other public sector bodies and governments seeks to address. The negative externality of the cost of carbon not being priced into the production of goods and services can be addressed through a number of means. Proposals that guide what the LDA is doing to help combat climate change are also set out in the Economic Development Strategy.

It can be argued that several market failures underpin interventions funded by the LDA to promote London globally as a tourism, investment and education location. Tourism marketing has the properties of a public good, being non-rival and non-excludable across businesses that benefit from it. This is because such businesses form a large and non-homogenous group and would find it difficult to coordinate investment for their collective benefit. Information problems and positive externalities also underpin promotion of London's investment and educational offers for international firms and students respectively.

When should the public sector intervene?

There are a number of conditions that, in general, increase the likelihood that public sector involvement in the market will improve social welfare. These conditions apply to all forms of public sector intervention by the Mayor's agencies. Even when market failures underpinning the areas of activity are fairly generic (such as in planning and transport), decisions between alternative programmes and projects can benefit from use of the following principles.

Improvements to welfare are more likely when the public sector attempts to alleviate market failures that are large or significant. In addition, worthwhile Government actions are usually those which target the cause of a market failure rather than supplanting the market. This requires a shrewd diagnosis of the failure to be addressed and analysis of how it can be tackled without creating dependency on the state.

Benefits to society are likely to be greater if public projects offer best 'value for money'. Therefore when a number of different policy options are proposed to tackle a particular market failure, these should be assessed on the basis of which is likely to prove most effective and offers the best 'value for money'.

Higher benefits are also more likely when public sector actions are aligned rather than overlapping or duplicating. A positive example of alignment in the area of skills is public sector agencies and private sector employers working together through the London Skills and Employment Board (chaired by the Mayor).

All of the factors mentioned can be captured or estimated in an assessment of the likely benefits and costs of a proposed intervention. Public investment will be advantageous only when additional benefits (over and above what would have happened in its absence) outweigh the costs (required to overcome market failure).

In the design of interventions, comparison of likely additional benefits and costs may be qualitative in many cases but should ideally be supported by quantitative evidence (cost benefit analysis) from evaluations of similar projects. It is therefore crucial that the GLA and LDA effectively evaluate their own projects and be driven by knowledge of 'what works' to inform future policy selection and design. Robust quantitative evidence from evaluation of GLA and LDA activities is also important to help prioritise future investment.

Robust evaluation evidence and cost benefit analysis attempts to assess the net effects of interventions. However, net effects may be impacted by private market responses to government actions that were not anticipated by the public sector. Limited control over private market responses is one of the reasons that government may fail to achieve its stated objectives. Such government failure implies risks to its interventions in the market.

Government failure – the risks of intervention

Government failure results from a number of factors that can lead to public sector actions reducing social welfare. When acknowledging and responding appropriately to these factors the public sector has the potential to be more realistic and effective in the design of its interventions.

The first source of government failure is a lack of information and incentives available to the public sector. Decisions of private firms are normally based on their incentive to maximise profit, while the government has no such overriding goal to drive performance. And the market has prices to inform on the value of

goods and services available to consumers, but often no such mechanism is available to inform government spending. The success of cost benefit analysis to inform spending decisions relies on the public sector's ability to accurately assess benefits and costs – something which often proves difficult.

Interventions may be ineffective or detrimental if the public sector fails to anticipate private market responses to its actions that occur for a number of reasons.

If the public sector provides any good or service for which a market exists then there is the potential for government production to 'crowd out' private sector activity. For example, public provision of particular business support services can lead to a reduction in private provision of those services, either by incumbent firms or new entrants to the market. The outcome may affect the quality and appropriateness of business services available to firms and prevent optimal amounts of business and other services being produced in the economy.

The public sector may fail to correctly anticipate the relative strength of substitution and income effects of policies that change relative prices, such as subsidies that make certain goods cheaper (possibly to overcome externalities). As a result the government may under or over estimate the overall impact of its actions. For example, subsidies on home insulation will likely increase its use to help reduce heating need and associated carbon emissions. However, the scale of an increase in use (and the amount that emissions drop as a result) depends on the extent to which homeowners substitute towards insulation and away from other products as a result of the price change, and the extent to which they buy more insulation (or other products) with income saved on their existing purchases of it.

Even if the public sector is well informed about the consequences of its actions, government failure can result from political or administrative failings. Political failings arise when individual interests override the public interest, as when special interest groups successfully influence the political process or lobby for an intervention for their own rather than the public's benefit. Administrative failings arise because public servants face the information problems already discussed and, importantly, different incentive structures to those of the private sector.

Lack of incentives and information can leave the public sector susceptible to the influence of individuals seeking preferential treatment for particular sectors or companies that they deem have potential not being recognised by the market. There are strong economic arguments against such selective support, commonly termed 'picking winners', which may take the form of direct subsidies or other interventions designed to aid particular sectors.

Past attempts to 'pick winners' have been shown to produce a poor return on investment of public money – even when at the time of investment areas supported were supposedly 'key' or 'growth' sectors. If investments in particular companies or sectors are likely to yield returns in the medium to long run (even with short term losses) then it is highly probable that they will be funded by the private sector – which has better information and incentives on which to base investment decisions.

Moreover, any gains from government support to particular companies or sectors are bound to be outweighed by damage caused to the wider economy; a higher tax burden for the majority of sectors and companies not given preferential treatment (leading to lower production in those sectors), and importantly drawing labour and capital away from more productive sectors of the economy.

Where markets work they are the most efficient means of meeting the needs and preferences of individuals and firms. Rather than pick key sectors or particular companies, government policy should therefore focus on barriers that businesses face as a result of market failure (for example around skills, transport and quality of life).

Equity as a rationale for intervention

In addition to policies aimed at improving economic efficiency (based on alleviation of market failures), government may intervene for social justice or equity reasons. This may be the case if an efficient market outcome is seen by society or government as one that is not desirable.

Interventions for equity reasons are based on the judgements of democratically elected politicians. A market failure framework should still be used to consider the potential consequences of an equity based intervention and to ensure the desired outcome is achieved in the most efficient and effective way.

In conclusion, due care should be given to the conception of interventions based on significant market failures through to policy design and implementation. Evidence of 'what works' and appreciation of the ways in which the private sector is likely to respond to and influence interventions is also key to the success of public sector investment.

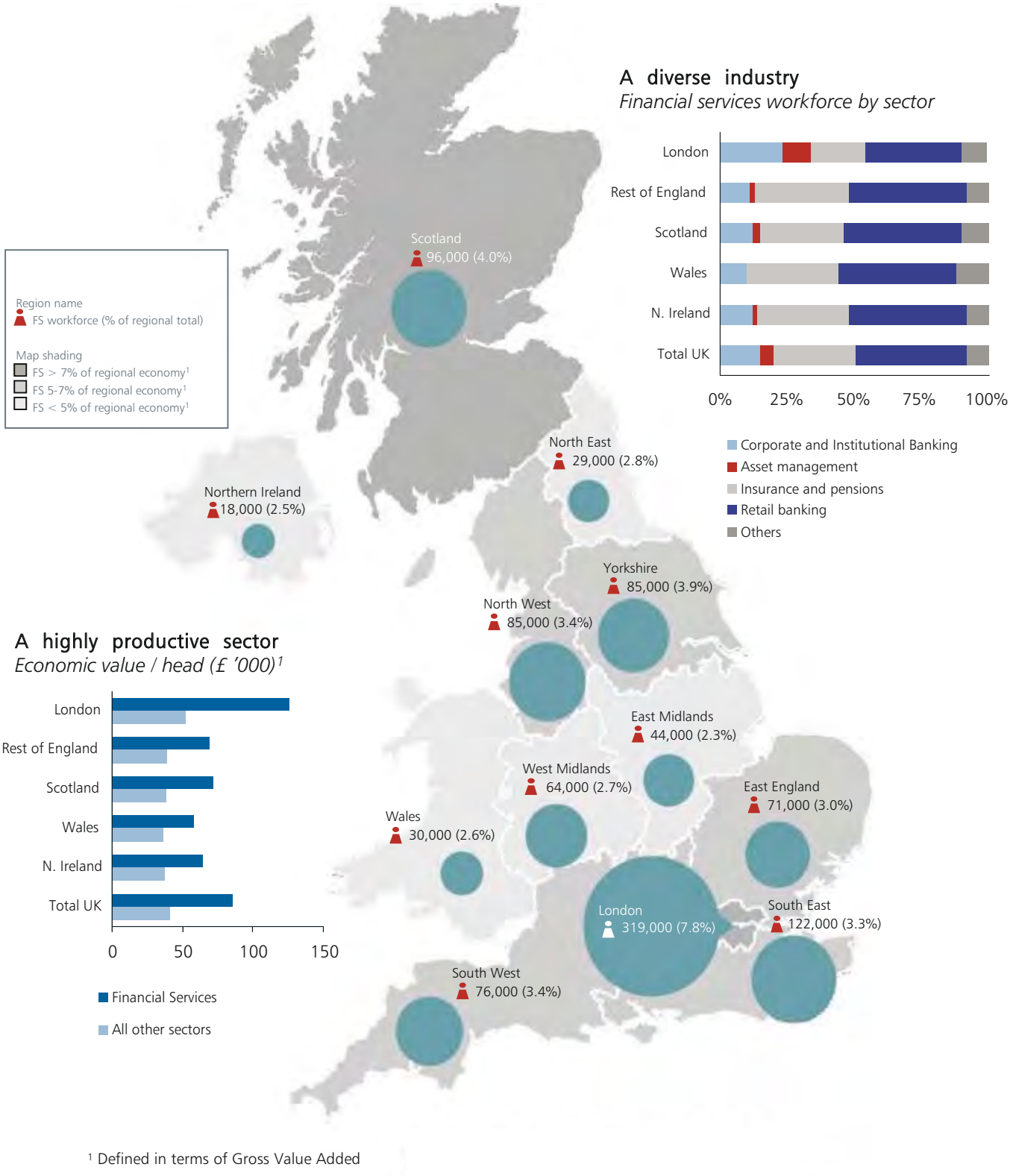
Appendix 2: Further evidence

This section provides further evidence to support and extend on the evidence presented in the main paper. The sections are structured to mirror those in the main document.

Appendix A: Trade and London's economic specialisation

London's financial services industry is the largest in the UK by employment. According to HM Treasury[1], it also has the highest economic value/head in the industry.

The UK financial services industry employs over one million people



[1] Defined in terms of Gross Value Added

Sources: Annual Business Enquiry (ABI); Office for National Statistics (ONS); British Bankers' Association (BBA); ABI; Mercer Global Investment Manager (GimD) database; Oliver Wyman analysis

The UK is, and has historically been, a world leader in a number of financial sectors, e.g. the foreign exchange market.

Table 1 International financial markets in the UK

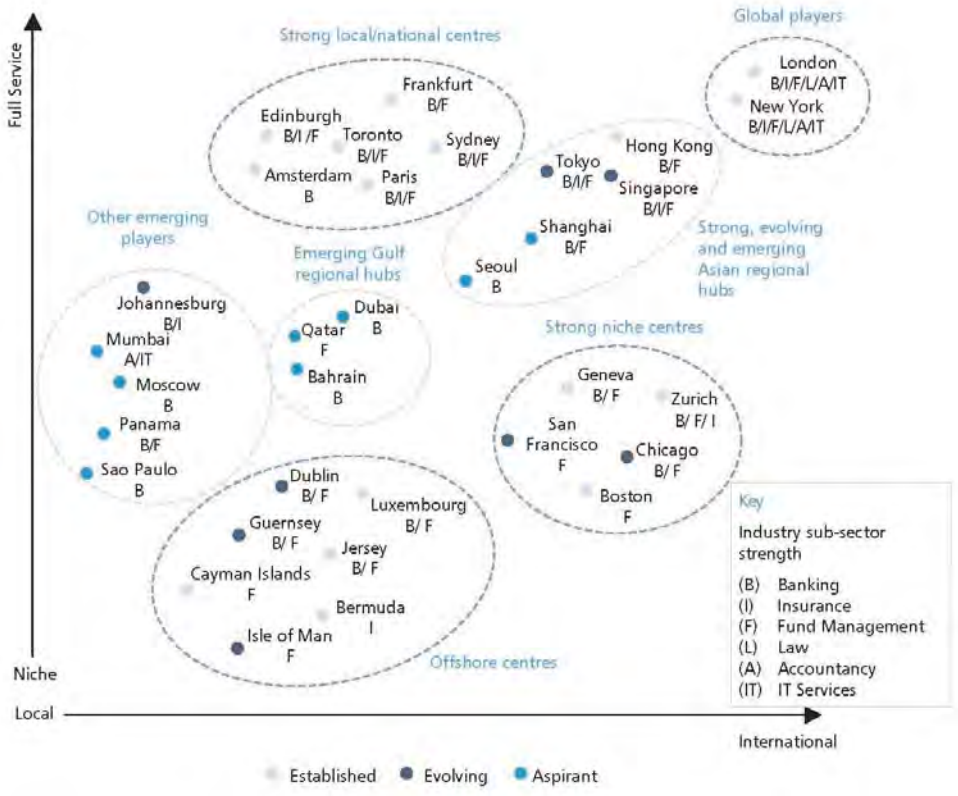
% share	UK	US	Japan	France	Germany	Singap.	H. Kong	Others
Cross-border bank lending (Mar 2009)	19	9	8	8	11	2	3	40
Foreign equities turnover (Jan-Sep 2009)	19	69	-	-	7	-	-	5
Foreign exchange turnover (Apr 2009)	36	14	7	-	-	6	-	37
Exchange-traded derivatives turnover (2008)[1]	6	39	2	1	12	-	1	39
Over-the-counter derivatives turnover (Apr 2007)	43	24	4	7	4	3	1	14
Marine insurance net premium income (2008)	17	10	12	6	7	1	1	46
International bonds - secondary market (2008)	70	...	...	...	...	...	...	...
Fund management (as a source of funds, end-2008)	9	50	6	6	3	-	1	25
Hedge funds assets (end-2008)	18	69	2	1	-	1	2	7
Private equity - investment value (2008)	17	25	-	1	1	1	-	55
IPOs (2008)[4]	8	4	-	-	-	4	3	81
Securitisation - issuance (2008)	14	55	2	-	3	...	...	26

	2008 ($bn)	% change 2001-2008	Trends in UK's share (%) 1992	1995	1998	2001	2004	2007	2008	2009
Cross-border bank lending	5,639	155	16	17	20	19	20	21	18	19[5]
Foreign equities turnover	n/a[6]	n/a	64	61	65	56	44	46	22[6]	19[7]
Foreign exchange daily turnover	1,684[2]	233	27	30	33	31	32	35	37	36
Exchange-traded derivatives turnover	1,376	91	12	12	11	7	7	6	6	---
Over-the-counter derivatives daily turnover	1,081[3]	293	...	27	36	36	43	43	---	---
Marine insurance net premium income	3.7	79	24	21	14	18	19	20	17	---
Fund management (as a source of funds)	5,739	92	...	...	8	8	8	9	9	---
Hedge funds assets	270	440	...	...	...	9	19	20	18	---
Private equity	32	433	...	...	...	6	24	7	17	---
IPOs[4]	73	---	...	...	...	...	23	18	8	---
Securitisation	400	830	...	...	...	...	4	6	14	---

[1] volume of contracts; [2] April 2009; [3] April 2007; [4] by number; [5] March; [6] figures since 2008 not comparable to previous years due to changes in methodology; [7] January-September

Sources: IFSL calculations and estimates based on data published by Bank for International Settlements, London Stock Exchange, Bank of England, Futures Industry Association, International Securities Market Association, World Federation of Exchanges, EuroHedge, International Union of Marine Underwriters, SIFMA, European Securitisation Forum, Fitch Ratings, EVCA/Thomson Financial/PwC

London's long established financial services industry, with its vast array of products offered and locations served, is one of only two global players according to HM Treasury[2].



Source: HM Treasury

Further, whilst it may still be too early to conclude decisively, the latest (2009) Financial Development Report from the World Economic Forum[3] suggests that the UK's position in financial services has not been lost. Indeed, despite having a relatively large fall from its 2008 score, the UK moved from 2nd to 1st position.

Economy	2009 rank (1 to 55)	2008 rank (1 to 55)	2009 score (1 to 7)	Change in score (2009 vs. 2008)
United Kingdom	1	2	5.28	–0.55
Australia	2	11	5.13	0.15
United States	3	1	5.12	–0.73
Singapore	4	10	5.03	–0.12
Hong Kong SAR	5	8	4.97	–0.26
Canada	6	5	4.96	–0.3
Switzerland	7	7	4.91	–0.32
Netherlands	8	9	4.85	–0.37
Japan	9	4	4.64	–0.64
Denmark	10	n/a	4.64	n/a

There is, however, a pronounced contrast in strengths and weaknesses within the UK's financial system.

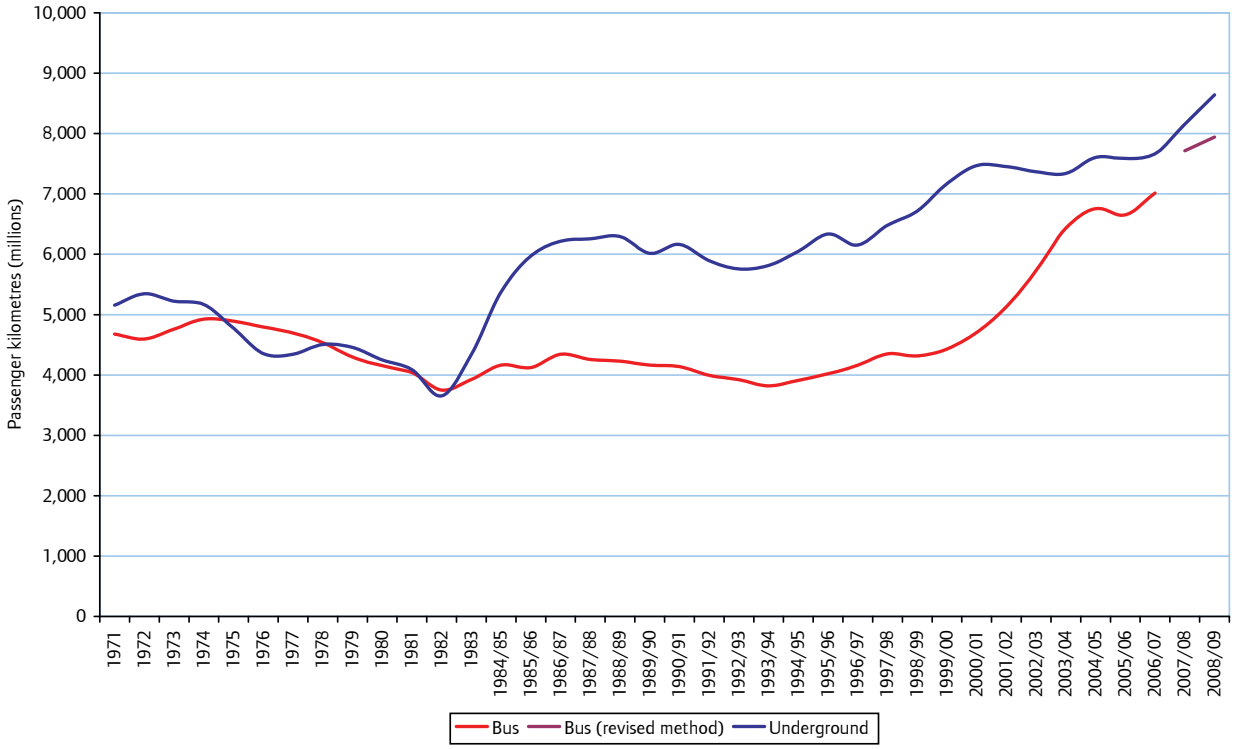
Pillar	UK's Rank	1st Place
Non-Banking Financial Services	1st	United Kingdom
Banking Financial Services	2nd	Hong Kong SAR
Financial Markets	2nd	United States
Business Environment	12th	Denmark
Institutional Environment	15th	Singapore
Financial Access	16th	Australia
Financial Stability	37th	Norway

The UK scores high marks with respect to the size of its banking system although it is relatively weak in its efficiency (which includes measures of both operating efficiency and profitability). Its strength in financial markets is particularly evident in the foreign exchange, insurance, M&A, securitisation, and derivatives markets.

Appendix B: The spatial nature of London's economy

London transport trends

Bus and underground are increasingly popular modes of transport in London with passenger kilometres increasing by around 100 per cent between 1982 and 2007/08.

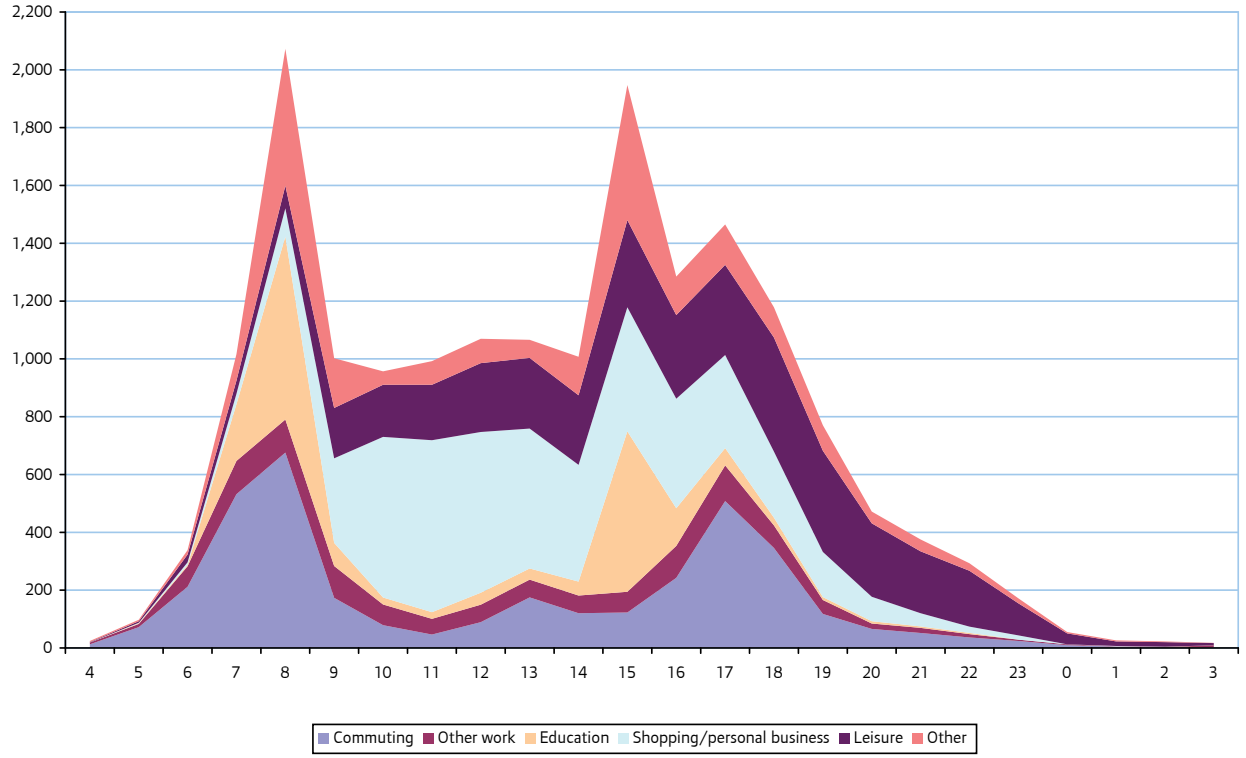


Source: Travel in London Report 2, TfL 2010-03-19

Note: A change in the method used to estimate bus passenger kilometres from 2007/08 means comparisons with earlier years must be treated with caution.

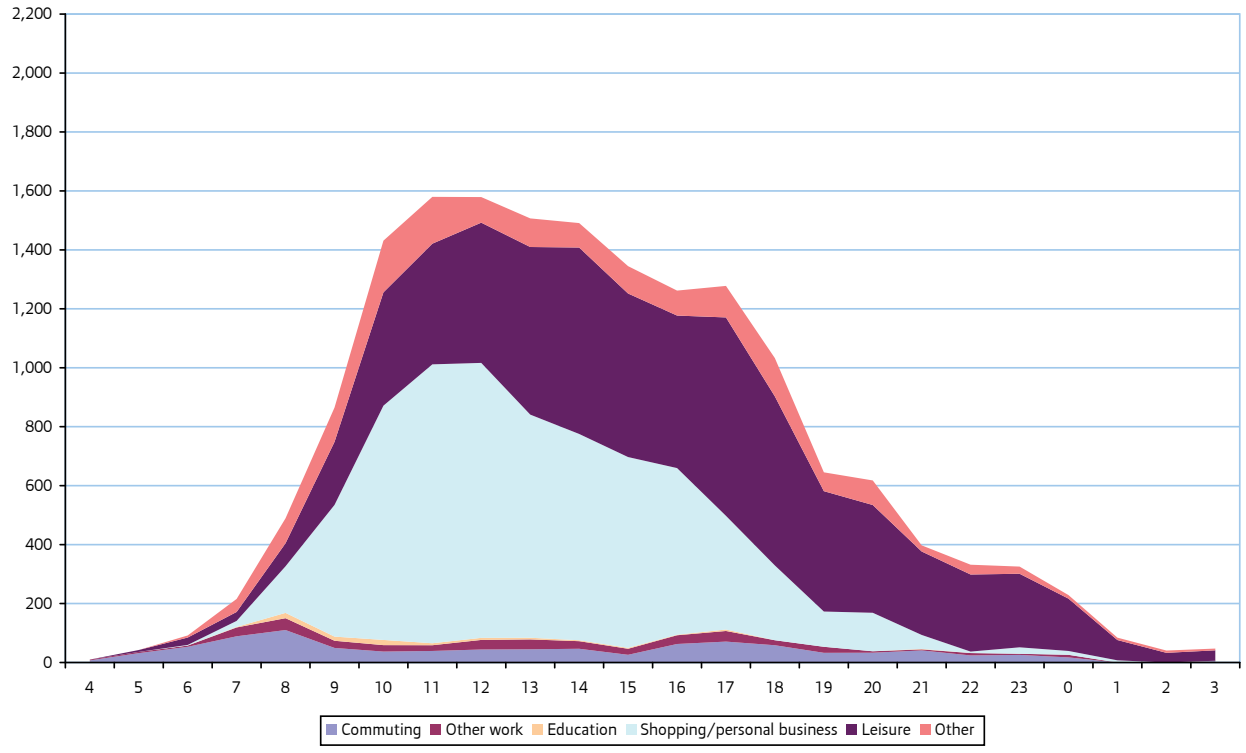
In 2007/08, commuting accounted for 20 per cent of Londoners' weekday trips, concentrated in the peaks; shopping and personal business accounted for 27 per cent, mainly in the inter-peak period.

London resident trips by journey purpose and hour of departure (LTDS 2007/08): Weekdays



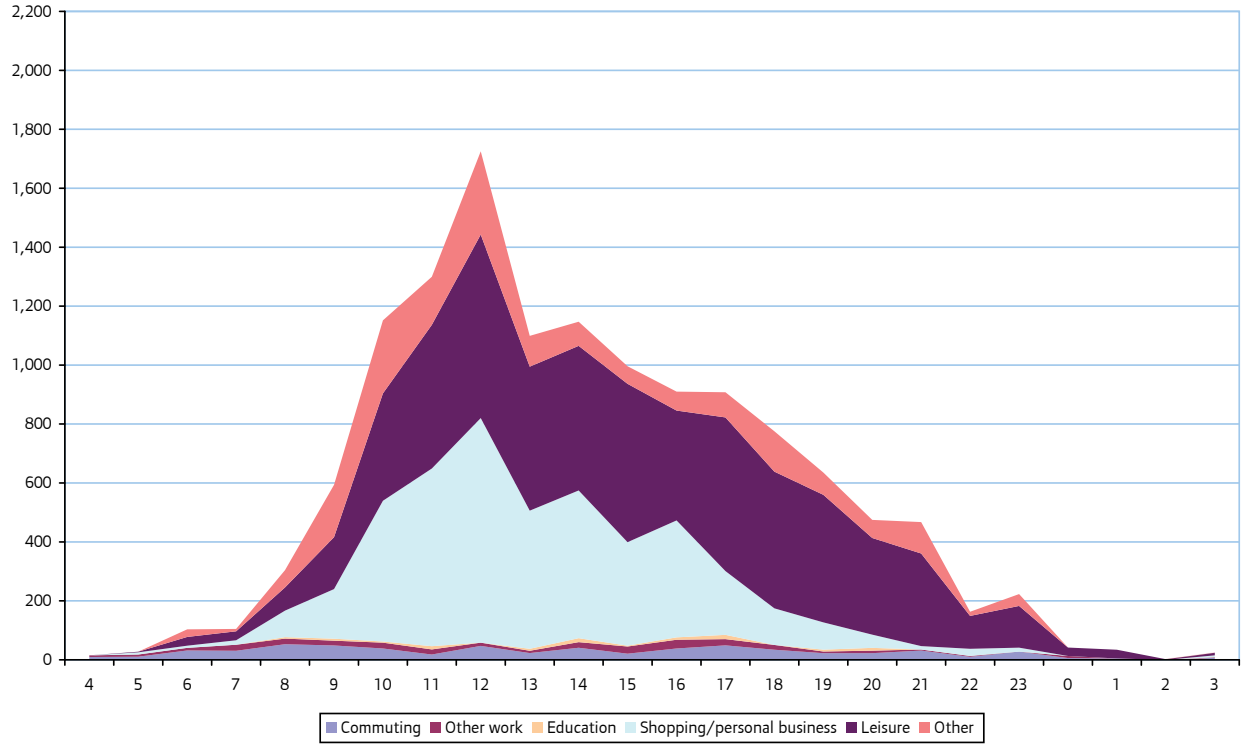
Source: Travel in London Report Number 1, TfL 2009

Saturday



Source: Travel in London Report Number 1, TfL 2009

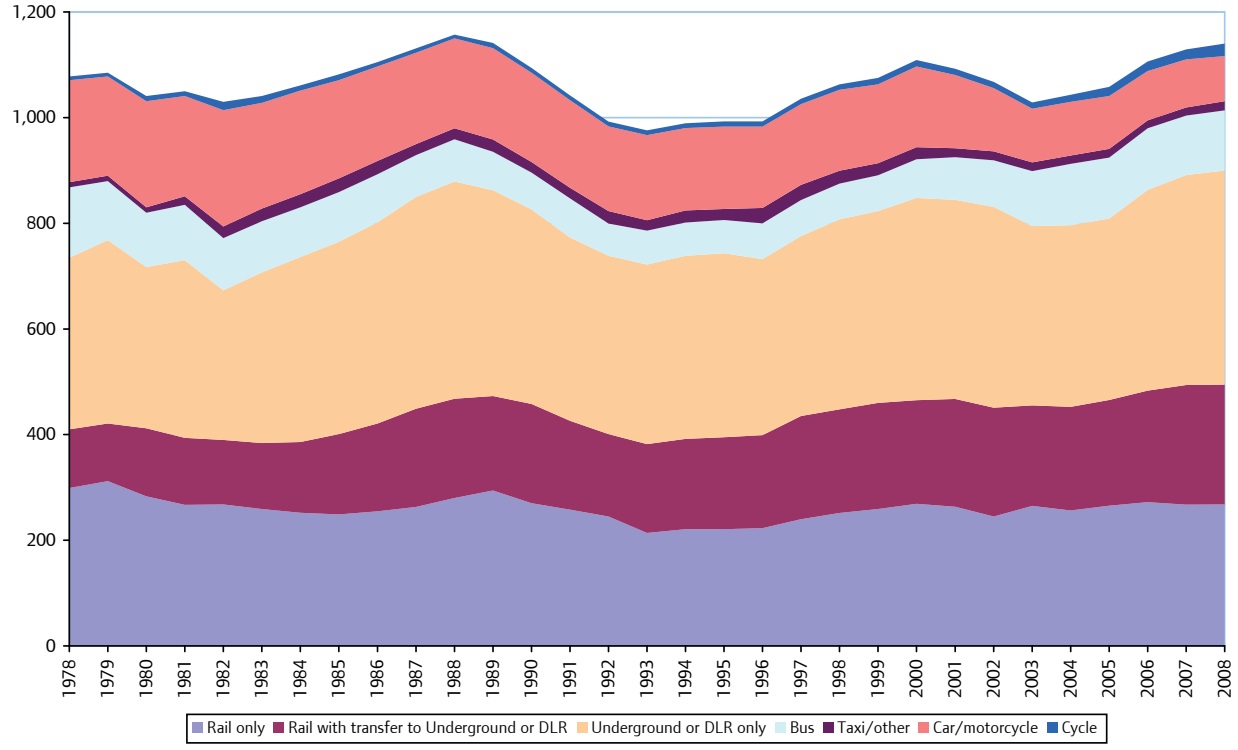
Sunday



Source: Travel in London Report Number 1, TfL 2009

Weekday commuting journeys to Central London tend to be, and have historically been, dominated by public transport in the morning peak period (roughly 90% of all the journeys), particularly LUL, DLR and rail.

Number of people entering Central London in weekday morning peak, 1978-2008



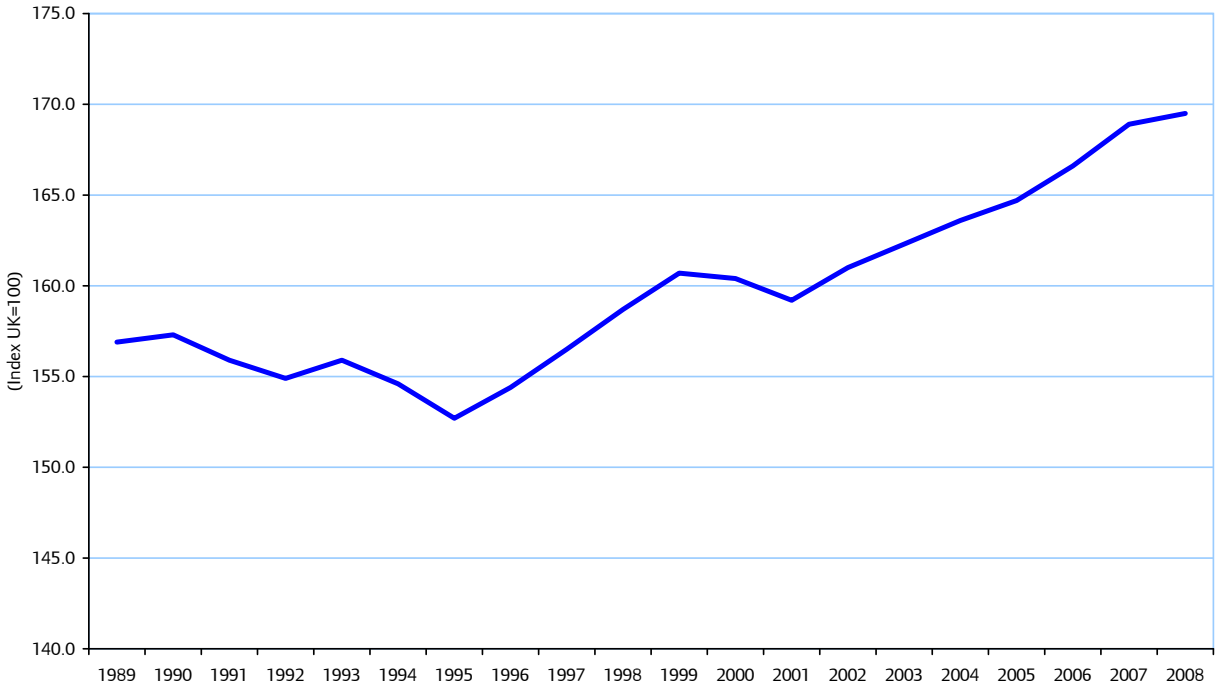
Source: Travel in London Report 2, TfL 2010

Appendix C: London's attractiveness to business and people

Economic growth and London's productivity

London's workplace headline GVA per capita has historically surpassed that of the UK average, with the disparity steadily increasing. This illustrates the growing importance of London to the generation of economic activity and productivity in the UK.

Workplace headline Gross Value Added (per capita) current prices in London



Source: Office for National Statistics

Note: Headline = 5 point moving average, and 2008 figures are provisional

Workplace headline GVA across the UK

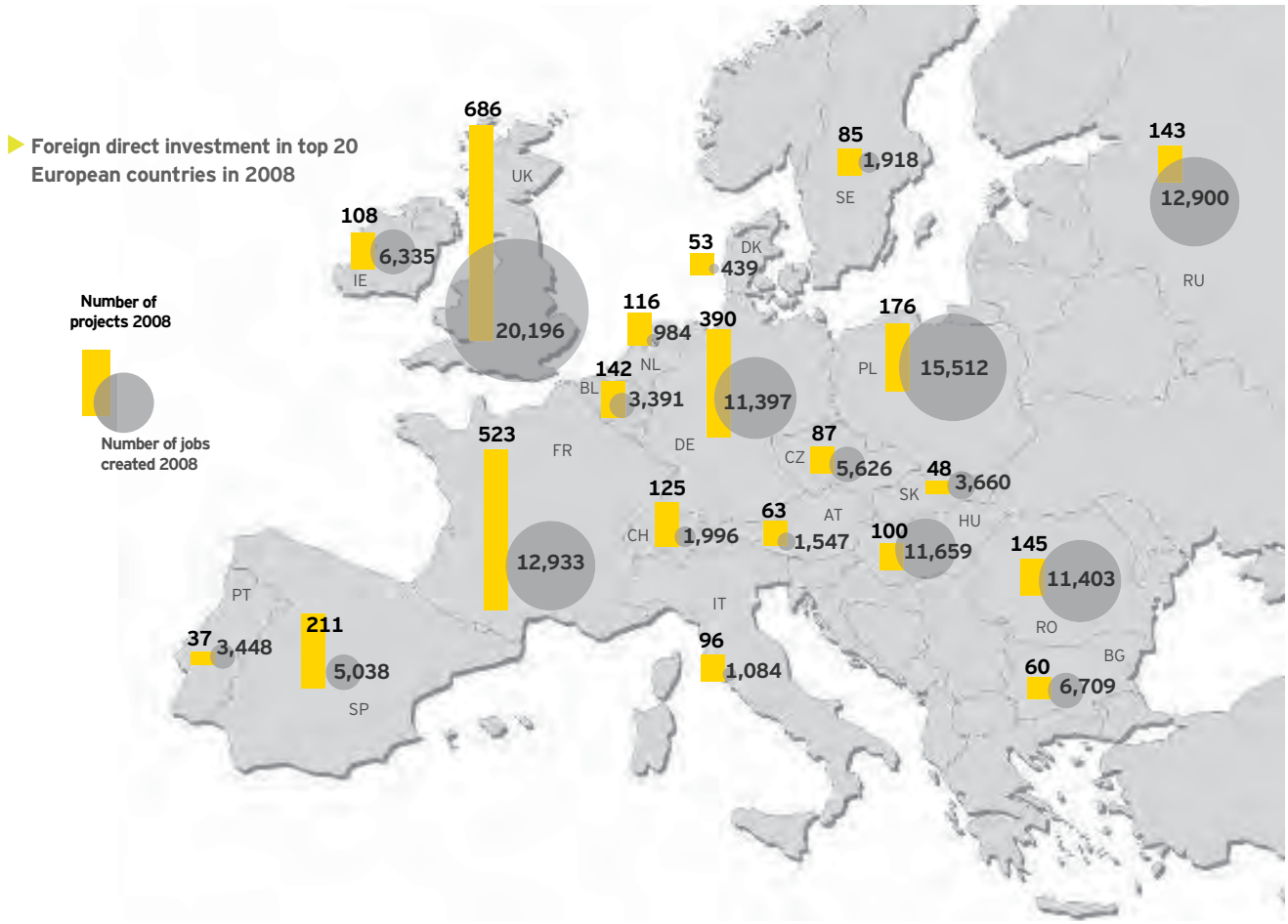
	Annual Percentage Increase			
	GVA		GVA per head	
		Average		Average
	2007-2008	1998-2008	2007-2008	1998-2008
North East	3.2%	4.4%	2.8%	4.1%
North West	3.6%	4.1%	3.5%	3.9%
Yorkshire & The Humber	3.3%	4.2%	2.6%	3.4%
East Midlands	3.2%	4.6%	2.4%	3.4%
West Midlands	3.0%	3.9%	2.5%	3.5%
East	3.3%	5.3%	2.0%	4.4%
London	4.1%	5.8%	3.2%	5.1%
South East	3.0%	4.5%	2.1%	3.7%
South West	3.6%	4.9%	3.0%	4.0%
Wales	3.0%	4.1%	2.6%	3.7%
Scotland	4.7%	5.5%	4.3%	5.0%
Northern Ireland	3.0%	5.0%	2.1%	4.1%
UK	4.1%	5.0%	3.5%	4.4%

Source: GLA (2009) Focus on London, updated with latest ONS release December 2009

Note: The headline regional GVA series has been calculated using a five-year moving average.

Foreign Direct Investment

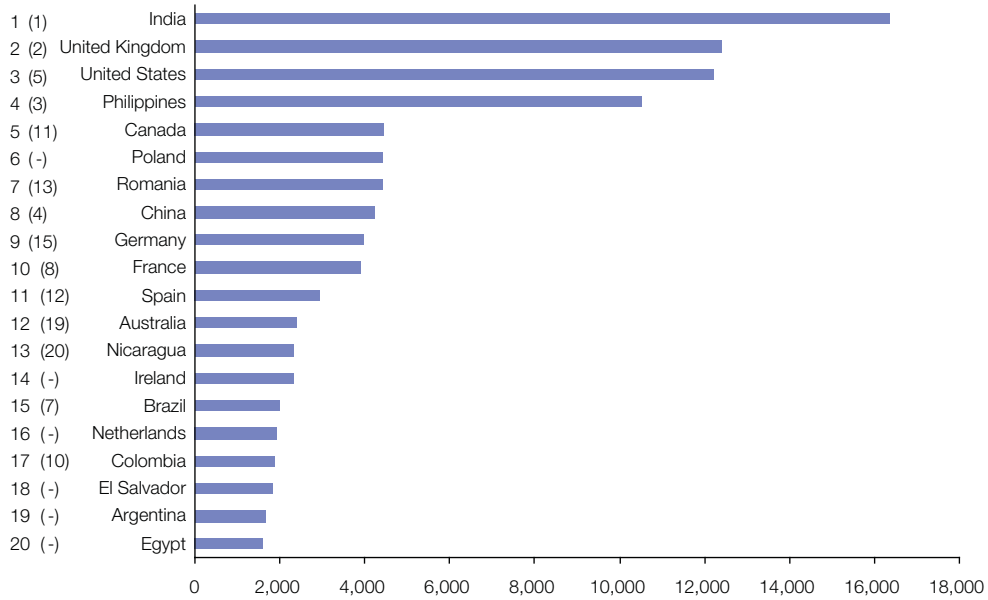
The Ernst & Young European Attractiveness Survey[4] (2009) finds that in 2008, the UK received the greatest proportion of FDI projects and largest job creation by FDI in Europe (18% and 14% respectively).



Source: Ernst & Young European Attractiveness Survey, 2009

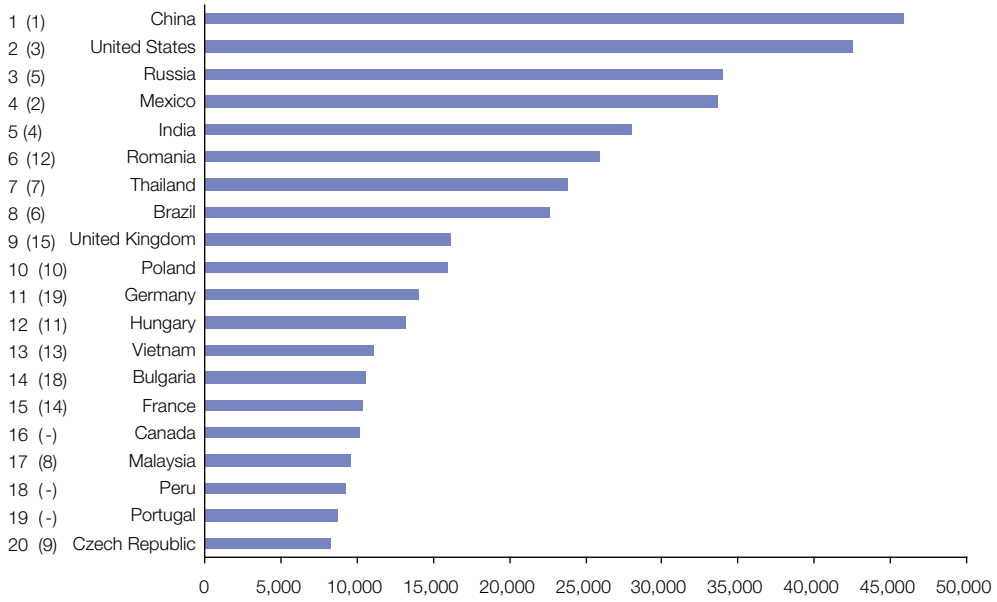
The UK is particularly strong at attracting international services operation; IBM's Global Location Trends 2009 Annual Report finds that, by jobs, the UK was the second top destination for service activities but only 9th in production activities (although this is up 6 places from the previous year).

Top ranking destination countries by estimated jobs in services – 2008 (07)



Source: IBM Global Location Trends 2009

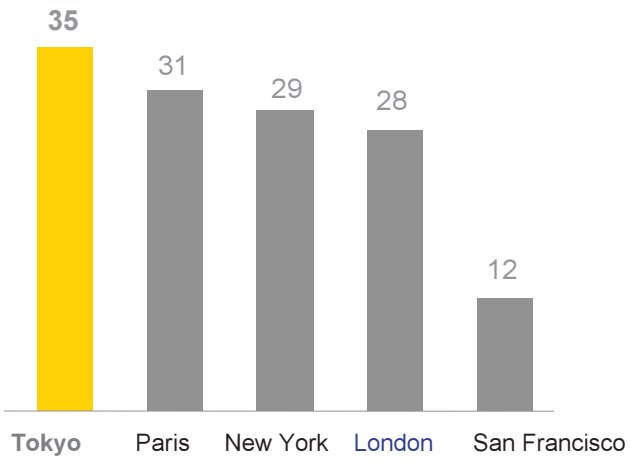
Top ranking destination countries by estimated jobs in production – 2008 (07)



Source: IBM Global Location Trends 2009

According to the Ernst & Young Global Cities Attractiveness Survey[5] (2008) London is currently one of the top headquarter destinations amongst the Forbes 500 largest companies.

Headquarters' location of the Forbes 500 largest companies'



Metropolitan area	Number of companies
Tokyo	35
Paris	31
New York	29
London	28
San Francisco	12
Chicago	10
Toronto	10
Düsseldorf	9
Stockholm	8
Seoul	8
Beijing	8
Madrid	8
Osaka	7
Moscow	7
Hong kong	7
Calgary	7
Zurich	6
Atlanta	6
Los Angeles	6
Sydney	6
Munich	5
Houston	5

Source: Forbes Global 500, 2008. Ranking is based on a composite index of turnover, operating income, book value and market value of the companies.

Source: Ernst & Young Global Cities Attractiveness Survey 2008

Note: Rankings are based on a composite index of turnover, operating income, book value, and market value of the companies.

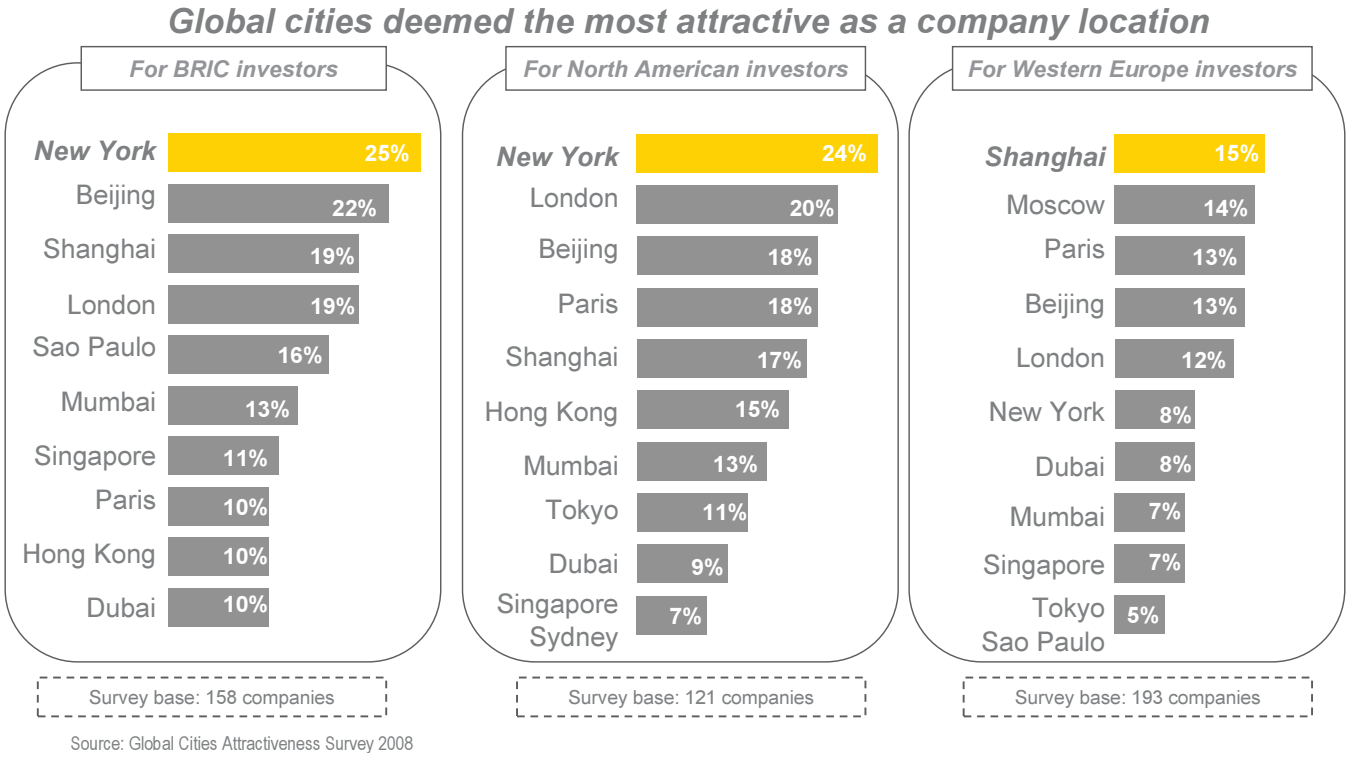
Survey of cities

Selected international surveys of London's attractiveness to business

Index	Rank	Focus	London's assessment
European City Monitor (Cushman & Wakefield)	1 (various through to -2009)	500 of the largest European companies were surveyed from nine European countries. Senior Managers or Board Directors, with responsibility for location rate cities based on 12 criteria. Respondents rated access to high quality staff and market access as the most important factor.	London is the most attractive Europe city to locate in. It has a significant lead over its nearest rival Paris, and was ranked first in 6 of the 12 categories (specifically, London in first for access to markets, qualified staff, quality of telecommunications, external transport links, language spoken and internal transport).
Global Financial Centres Index (YZen Consulting/City of London corporation)	1 (2007-2010)	Focussing on the financial services sector, the study uses external indices and responses to an online questionnaire to compare the competitiveness of cities based on: the business environment (regulation and taxes); people; business infrastructure (transport, office space); market access (cluster of professional advisors; access to international markets); and competitiveness (reputation and marketing).	London has been consistently ranked in the top two cities for financial services with New York and significantly ahead of the next European city (Zurich). London performs very well across almost all the external indices. London is rated highly in most sectors of the finance industry – particularly asset management, and professional services, but also in banking and insurance.
MasterCard Worldwide Centres of Commerce Index (MasterCard)	1 (2007, 2008)	A panel of top international, independent economic, urban development and social science academics rate the business environment of 75 cities. Cities are rated according to their legal and political framework, economic stability, ease of doing business, financial flows, standing as a business centre and as a centre of knowledge and information.	London performs well in ease of doing business, financial flows, knowledge creation and business centre accessibility. London out performs Paris and Frankfurt by a significant margin.
Global Cities Index (AT Kearny and Foreign Policy)	2 (2008)	Using a broad array of data, and expert opinions, cities are rated using 24 metrics across five dimensions. These dimensions are: business activity; attractiveness to talented people; news and information flows domestically and to the rest of the world; cultural experience; political engagement (city's influence in global policymaking).	Runner-up to New York, London's strongest category was its cultural offerings. London also performed well in relation to human capital (attracting talented people).
Cities of Opportunity (PwC)	N/A	20 cities are compared across 51 variables. Cities are selected based on their size of their capital market, regional importance. The study uses publicly available data to rank cities across six axes of advancing urbanisation: quality and power; cost competitiveness; openness for business; intellect and innovation; sustainability management; physical momentum (construction and foreign investment).	London tops the ranks in its openness for business, based on its power to attract finance and commerce and its interconnectedness.

Factors attracting business to London

London is particularly attractive to North American investors, followed by BRIC and Western Europe investors respectively.



Source: Global Cities Attractiveness Survey 2009

Availability of highly skilled staff and higher education and research institutes

London has a wealth of intellectual capital driven by its leading higher education and research institutes. PWC Cities of Opportunity[6] 2008 study ranks London 3rd on its intellectual capital.

	Share of top 500 universities	Percent of population with higher education	Share of top 100 MBA universities	Number of medical schools
20 New York 59	15	19	11	14
19 Paris 56	17	18	6	15
18 London 54	17	14	**12**	11
17 Tokyo 49	**18**	11	0	**20**
16 Shanghai 43	8	10	11	14
15 Chicago 42	8	17	6	11
15 Los Angeles 42	8	16	11	7
15 Toronto 42	8	**20**	11	3
12 Seoul 41	14	9	0	18
11 Houston 40	12	15	6	7
10 Sydney 38	12	13	6	7
9 Hong Kong 36	14	7	6	9
8 Beijing 35	12	6	0	17
7 Singapore 34	8	8	11	7
6 São Paulo 30	12	4	0	14
5 Mexico City 27	3	1	6	17
4 Mumbai 22	0	3	0	19
3 Frankfurt 18	3	12	0	3
2 Dubai 14	0	5	0	9
1 Johannesburg 8	3	2	0	3

Each city's score (here 59 to 8) is the sum of its rankings across variables. The city order from 20 to 1 is based on this score. See maps on pages 10–11 for an overall indicator comparison.

High
Medium
Low
Highest rank in each variable

Source: PWC Cities of Opportunity 2008

Note: Each city's score (from 69 to 8) is the sum of its markings across variables. The city order from 20 to 1 is based on this score.

The study also finds London's labour force in a strong position to cater to diverse business needs.

	Density of population	Working age population as a percent of total population	Diversity of population
20 Seoul 44	18	17	9
20 Beijing 44	17	19	8
18 New York 41	16	5	**20**
17 London 40	10	11	19
17 Toronto 40	8	14	18
15 São Paulo 39	15	7	17
14 Chicago 38	9	12	17
13 Tokyo 36	12	13	11
13 Hong Kong 36	13	16	7
11 Singapore 34	14	15	5
10 Los Angeles 30	7	9	14
10 Shanghai 30	4	**20**	6
8 Frankfurt 29	6	10	13
7 Mumbai 28	**20**	3	5
6 Paris 26	19	4	3
5 Sydney 24	1	6	17
4 Dubai 23	2	18	3
4 Houston 23	3	8	12
4 Mexico City 23	11	2	10
1 Johannesburg 7	5	1	1

Each city's score (here 44 to 7) is the sum of its rankings across variables. The city order from 20 to 1 is based on this score. See maps on pages 10–11 for an overall indicator comparison.

High
Medium
Low

■ Highest rank in each variable

Source: Ibid.

Note: Each city's score (from 44 to 7) is the sum of its markings across variables. The city order from 20 to 1 is based on this score.

Transport networks

London's connectivity (both domestically and internationally) was recognised by PWC's Cities of Opportunity survey, where it ranked 1st for its transportation and infrastructure assets.

	Registered taxis per 1,000 of population	Miles of mass transit track per 100,000 of population	Aircraft movements	Incoming/outgoing passenger flows	Congestion management[1]	Cost of public transport[2]	Building: Approved and under construction	Electricity consumed per 1,000 of population
20 London 109	10	14	18	**20**	16	1	16	14
19 Beijing 100	18	4	10	13	14	**20**	6	15
18 New York 97	6	17	**20**	19	7	6	14	8
18 Paris 97	19	16	15	16	14	4	2	11
16 Chicago 96	7	**18**	19	17	14	6	10	5
15 Tokyo 94	15	8	13	18	14	9	8	9
14 Singapore 91	17	9	2	8	**20**	15	13	7
13 Mexico City 90	**20**	10	8	3	1	19	11	18
12 Hong Kong 89	9	7	5	11	14	16	15	12
11 Mumbai 84	16	5	3	2	5	18	18	17
10 Frankfurt 83	8	15	14	14	14	2	3	13
10 São Paulo 83	11	2	9	6	5	11	**20**	19
8 Seoul 80	12	12	7	9	5	14	5	16
7 Dubai 78	14	0	1	7	19	17	19	1
7 Shanghai 78	13	6	11	10	7	12	13	6
5 Los Angeles 76	2	13	17	15	5	10	4	10
4 Houston 75	3	3	16	12	16	14	7	4
3 Toronto 69	5	11	12	5	14	3	17	2
2 Johannesburg 54	1	0	4	1	19	8	1	**20**
1 Sydney 53	4	1	6	4	19	7	9	3

Each city's score (here 109 to 53) is the sum of its rankings across variables. The city order from 20 to 1 is based on this score. See maps on pages 10–11 for an overall indicator comparison.

High
Medium
Low

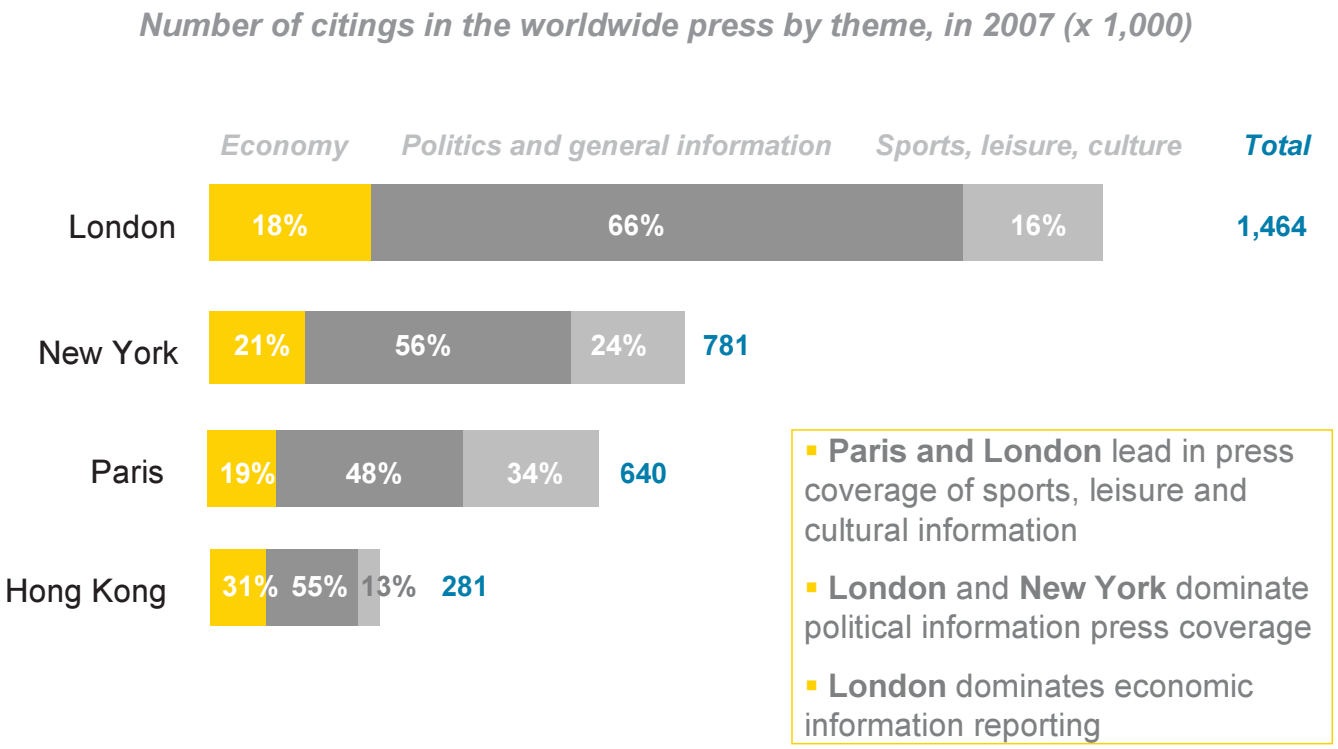
■ Highest rank in each variable

Source: Ibid.

Note: Each city's score (from 109 to 53) is the sum of its markings across variables. The city order from 20 to 1 is based on this score.

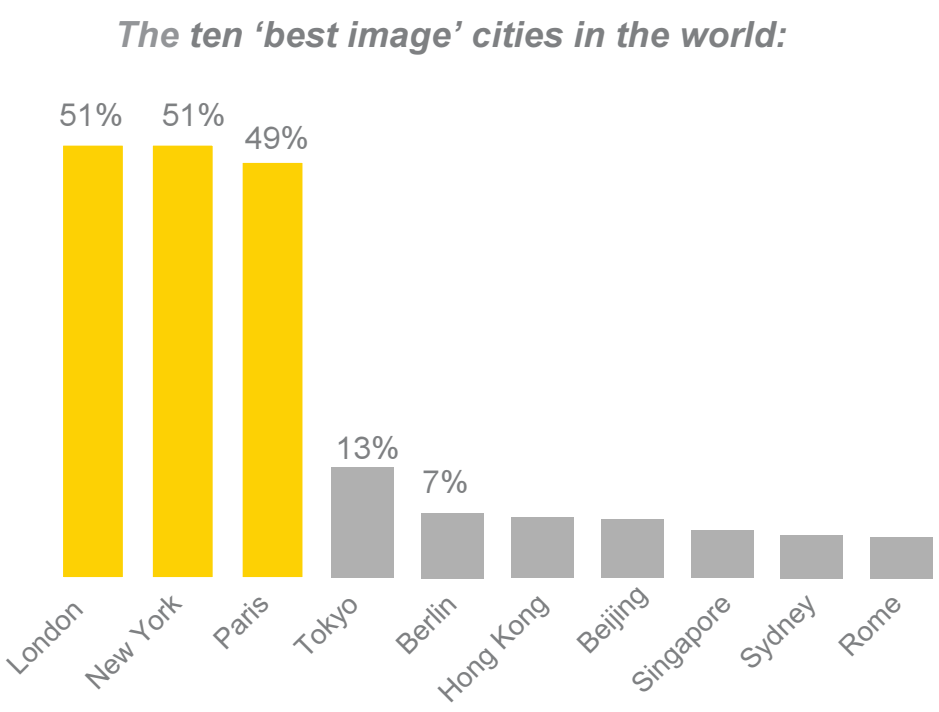
London's attractiveness to people

According to the Ernst & Young Global Cities Attractiveness Survey, 2008, London is the most cited city in the international press.



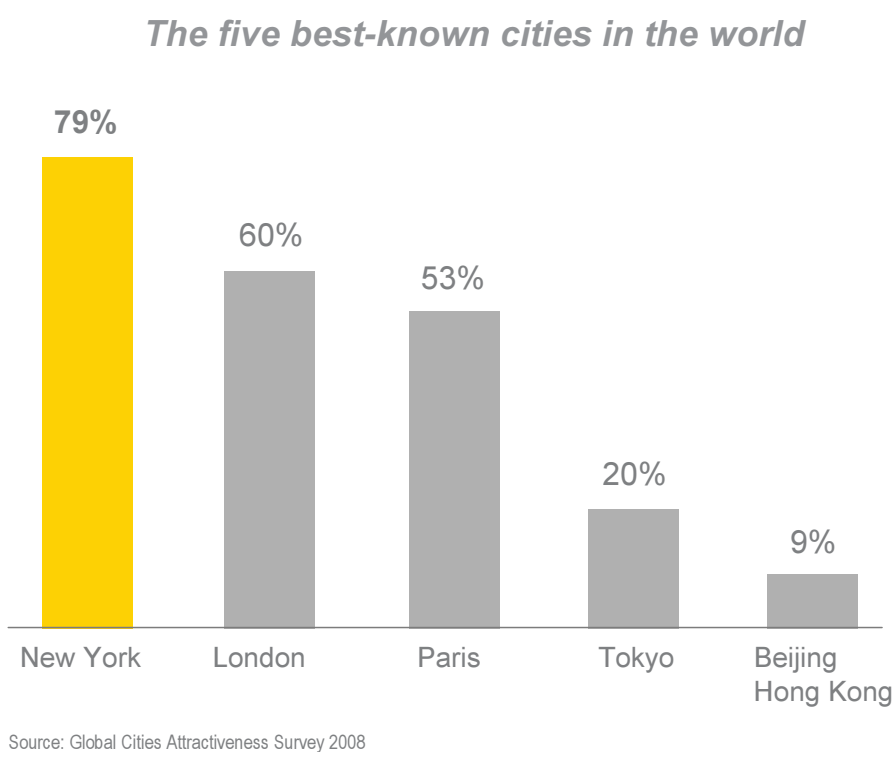
Source: Ernst & Young Global Cities Attractiveness Survey 2008

The survey's respondents also ranked London as having the best image in the world and as the second best known city.



City	Perception
London	51%
New York	51%
Paris	49%
Tokyo	13%
Berlin	7%
Hong Kong	7%
Beijing	7%
Singapore	6%
Sydney	5%
Rome	5%
Shanghai	4%
Barcelona	4%
Dubai	3%
Frankfurt	3%
Madrid	3%
Moscow	3%
Milan	3%
Los Angeles	3%
Brussels	2%
Geneva	2%
Sao Paulo	2%
Mumbai	2%
San Francisco	2%
Washington, D.C.	2%

Source: Global Cities Attractiveness Survey 2008

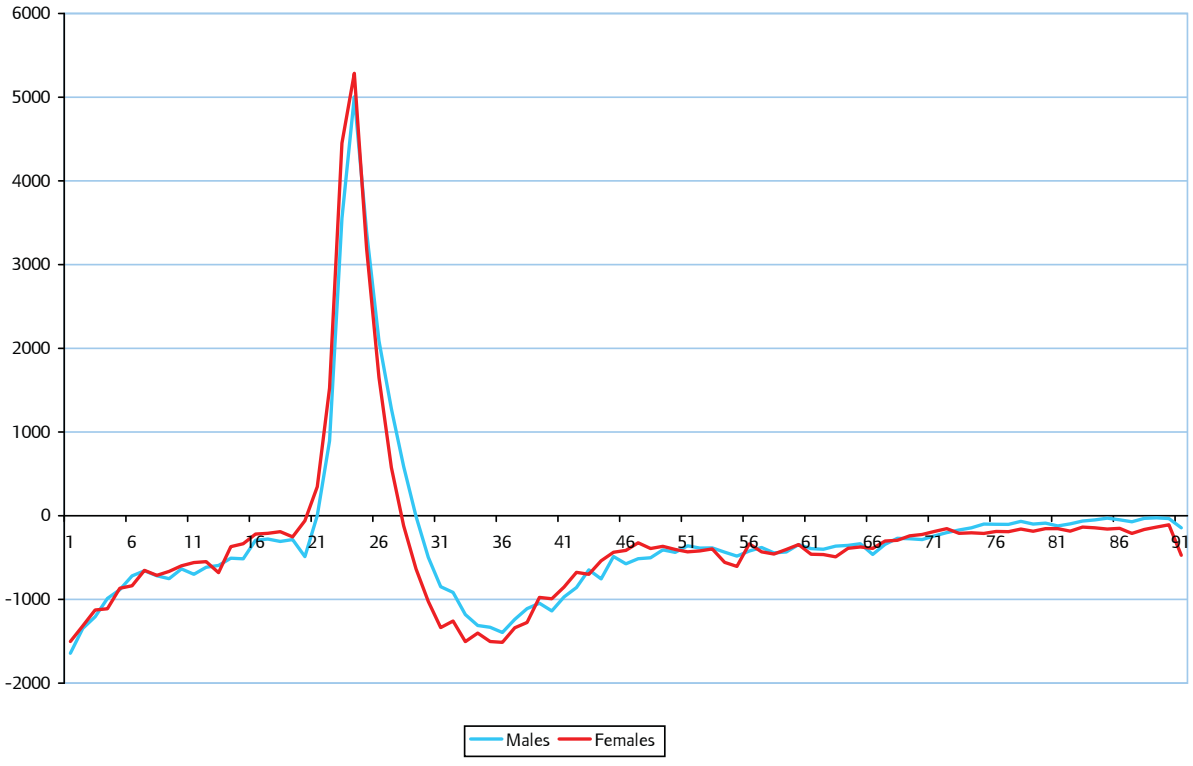


City	Perception
New York	79%
London	60%
Paris	53%
Tokyo	20%
Beijing	9%
Hong Kong	9%
Shanghai	7%
Moscow	6%
Rome	4%
Singapore	4%
Los Angeles	3%
Berlin	2%
Milan	2%
Sao Paulo	2%
Frankfurt	2%
Mumbai	2%
Dubai	2%
Mexico City	2%
Barcelona	2%

Source: Ernst & Young Global Cities Attractiveness Survey 2008

London is particularly attractive to young migrants in the UK starting their career.

Net domestic migration by age of migrant, 2001



Source: Census 2001, ONS

Note: many individuals commute into London on a daily basis, which may mean that large numbers of those moving out of London may actually continue to work in London

Culture and entertainment

Lifestyle assets, such as cultural and entertainment offerings, add to the quality of life and well-being potential a city offers to its residents and visitors. In the 2008 PWC Cities of Opportunity study London came joint second in the quantity and quality of its lifestyle assets.

	Entertainment	Hotel rooms	Housing	City brand	Skyline impact	Number of international tourists	Commute time
20 New York 106	**20**	16	15	17	19	16	3
19 Hong Kong 101	10	14	15	11	**20**	17	14
19 London 101	**20**	19	15	19	6	**20**	2
17 Paris 98	**20**	17	8	18	3	19	13
16 Singapore 92	7	8	19	12	16	18	12
16 Sydney 92	**20**	6	**20**	**20**	9	7	10
14 Toronto 91	14	11	19	16	12	12	7
13 Los Angeles 86	**20**	7	15	15	5	8	16
12 Tokyo 85	13	18	15	14	13	6	6
11 Houston 83	13	15	19	8	8	2	18
10 Chicago 81	15	9	15	13	17	4	8
9 Dubai 77	5	10	15	10	11	15	11
8 Beijing 75	2	**20**	4	9	10	11	19
7 Seoul 74	5	4	6	7	18	14	**20**
6 Frankfurt 69	13	3	19	6	2	9	17
5 São Paulo 62	9	13	4	1	15	5	15
4 Shanghai 55	3	5	6	5	14	13	9
3 Mexico City 43	7	12	2	3	4	10	5
2 Johannesburg 29	9	2	8	4	1	1	4
1 Mumbai 16	1	1	1	2	7	3	1

Each city's score (here 106 to 16) is the sum of its rankings across variables. The city order from 20 to 1 is based on this score. See maps on pages 10–11 for an overall indicator comparison.

High
Medium
Low
Highest rank in each variable

Source: PWC Cities of Opportunity 2008

Note: Each city's score (from 106 to 16) is the sum of its markings across variables. The city order from 20 to 1 is based on this score.

Appendix D: The outlook for economic growth

Historic and projected employment by sector and borough in London

GLA Economics[7] estimate that London's employment could reach 5.45 million by 2031. Employment has been projected forward at the sectoral and borough[8] level.

Historic and forecast employment levels at the 12 sector level

GVA Growth = 2.5% p.a. (000s)													
	Primary & utilities	Manufacturing	Construction	Wholesale	Retail	Hotels & restaurants	Transport & communications	Financial services	Business services	Public Admin	Health & education	Other services	Total
1982	55	666	250	281	332	181	424	265	511	294	652	189	4,099
1983	52	626	246	278	333	180	409	270	538	291	656	191	4,071
1984	50	596	254	281	349	188	406	275	573	286	666	202	4,124
1985	48	569	257	276	357	192	394	283	608	279	678	211	4,152
1986	45	531	254	270	360	191	380	297	635	276	686	210	4,134
1987	43	502	269	269	366	193	383	314	671	275	705	214	4,204
1988	41	478	284	267	371	199	380	331	716	271	733	221	4,291
1989	40	473	295	258	369	203	379	326	743	259	723	225	4,292
1990	38	440	287	246	367	205	383	325	759	264	666	244	4,224
1991	36	381	258	228	352	189	368	314	732	267	612	268	4,004
1992	35	358	225	216	349	184	350	300	715	262	598	258	3,851
1993	32	338	199	214	348	188	341	292	742	254	589	263	3,800
1994	28	336	193	220	370	205	341	302	791	247	586	288	3,907
1995	23	333	202	232	362	217	327	313	833	240	576	296	3,954
1996	22	326	198	229	356	214	333	321	870	240	586	310	4,004
1997	20	327	192	245	363	235	346	319	906	240	605	318	4,115
1998	20	330	214	255	390	254	358	320	971	237	602	334	4,285
1999	23	325	197	259	408	275	365	336	1,020	226	612	354	4,401
2000	27	326	214	265	412	284	373	348	1,100	227	628	363	4,566
2001	25	303	212	257	410	289	372	360	1,132	213	639	372	4,586
2002	23	276	210	251	398	296	359	346	1,078	234	658	377	4,506
2003	18	267	214	240	398	307	359	345	1,084	238	690	366	4,526
2004	18	254	217	234	398	310	346	330	1,084	235	713	361	4,500
2005	20	240	218	226	405	314	353	326	1,142	248	727	369	4,588
2006	24	234	227	220	410	312	346	323	1,182	240	724	390	4,632
2007	29	224	242	215	402	305	342	334	1,222	229	731	400	4,676
2008	28	215	239	214	403	313	341	334	1,249	226	733	411	4,706

GVA Growth = 2.5% p.a. (000s)													
	Primary & utilities	Manufacturing	Construction	Wholesale	Retail	Hotels & restaurants	Transport & communications	Financial services	Business services	Public Admin	Health & education	Other services	Total
2009	27	207	236	213	404	320	339	334	1,274	224	735	422	4,736
2010	26	199	233	212	406	328	337	335	1,299	221	737	434	4,767
2011	25	192	230	211	407	336	335	335	1,323	218	740	446	4,797
2012	24	184	227	210	409	344	334	335	1,346	216	742	458	4,828
2013	23	178	225	209	410	352	332	335	1,368	213	744	470	4,859
2014	23	171	222	208	412	361	330	335	1,390	211	746	483	4,890
2015	22	164	219	207	413	369	328	335	1,411	208	748	496	4,922
2016	21	158	216	206	415	378	327	336	1,431	206	751	509	4,953
2017	20	152	214	205	416	387	325	336	1,451	203	753	523	4,985
2018	20	146	211	204	418	397	323	336	1,470	201	755	537	5,017
2019	19	141	208	203	419	406	322	336	1,488	199	757	552	5,049
2020	18	135	206	202	420	416	320	336	1,505	196	760	567	5,082
2021	18	130	203	201	422	426	318	336	1,522	194	762	582	5,114
2022	17	125	201	200	423	436	317	337	1,538	192	764	598	5,147
2023	16	121	198	199	425	447	315	337	1,553	190	766	614	5,180
2024	16	116	196	198	426	457	313	337	1,567	187	769	631	5,213
2025	15	112	193	197	428	469	312	337	1,581	185	771	648	5,247
2026	15	107	191	196	429	480	310	337	1,594	183	773	665	5,280
2027	14	103	189	195	431	491	308	337	1,606	181	775	683	5,314
2028	14	99	186	194	433	503	307	338	1,617	179	778	702	5,348
2029	13	96	184	193	434	515	305	338	1,628	177	780	721	5,383
2030	13	92	182	192	436	528	304	338	1,637	175	782	740	5,417
2031	12	89	179	191	437	540	302	338	1,646	173	785	760	5,452

Source: GLA Economics

Historic and forecast employment numbers by borough

('000s)	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
1982	76	108	73	126	104	233	363	166	142	103	78	96	88	73	68	77	132
1983	73	107	73	122	104	233	360	163	140	102	77	95	87	72	69	77	129
1984	72	109	75	121	106	238	360	163	140	104	78	95	88	73	71	79	131
1985	72	110	75	120	107	240	360	163	142	106	77	93	88	75	73	79	131
1986	71	111	74	119	108	240	356	163	143	108	76	91	86	76	74	78	128
1987	72	114	75	120	110	245	361	166	147	112	75	91	86	79	76	79	128
1988	71	114	77	123	114	252	355	170	149	115	78	93	90	78	77	82	131
1989	70	113	80	124	116	251	331	174	146	117	79	93	92	75	77	85	135
1990	70	113	80	123	116	249	314	172	140	115	78	90	93	71	77	85	149
1991	68	111	75	116	111	239	287	163	129	106	74	84	92	66	74	81	157
1992	68	108	72	109	107	228	272	155	122	101	68	81	88	67	72	77	158
1993	67	107	71	105	105	222	270	149	119	99	62	80	86	70	70	74	162
1994	65	112	73	104	112	228	287	147	119	102	63	81	89	70	73	77	166
1995	64	113	77	100	114	233	303	140	121	101	63	83	94	66	74	80	164
1996	63	117	74	105	110	231	323	140	123	103	67	84	94	63	72	82	162
1997	64	124	75	110	112	241	318	143	128	104	71	90	96	68	77	83	173
1998	61	133	77	115	116	265	329	150	133	105	72	92	100	69	78	84	184
1999	61	134	76	117	116	275	343	151	131	108	71	92	105	68	79	85	191
2000	60	137	78	117	118	289	358	159	134	116	73	95	112	69	80	88	195
2001	56	137	76	114	116	295	358	159	133	115	73	97	119	70	80	87	192
2002	52	134	77	110	116	292	345	154	132	109	72	99	120	72	79	87	183
2003	51	133	76	110	121	285	347	154	135	108	77	103	123	77	82	89	181
2004	52	131	79	111	121	274	338	150	134	110	77	97	122	76	81	92	185
2005	53	133	78	113	124	279	337	152	135	114	77	94	128	77	84	92	201
2006	52	134	75	112	124	283	332	151	137	111	80	90	131	82	83	91	203
2007	51	134	75	111	131	290	339	150	139	110	81	92	132	85	82	85	203
2011	52	137	74	113	130	307	374	147	138	109	80	95	143	87	82	83	202
2016	52	140	74	116	129	325	401	145	138	111	80	99	149	89	83	82	202
2021	53	139	73	115	128	340	423	144	143	113	81	104	166	92	82	83	202
2026	54	145	77	119	132	350	428	149	148	118	85	108	173	95	86	87	210
2031	56	150	79	124	137	362	438	155	154	121	87	111	178	98	88	89	217

('000s)	Hounslow	Islington	Kensington and Chelsea	Kingston upon Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	Total
1982	141	128	97	71	146	72	76	85	73	61	148	57	95	76	96	572	4099
1983	138	127	97	69	146	71	75	83	73	61	148	58	94	75	98	575	4071
1984	139	130	99	68	148	72	76	82	75	63	152	61	95	75	101	588	4124
1985	141	131	103	70	143	72	76	82	72	64	152	63	99	77	102	594	4152
1986	143	131	106	72	136	72	74	81	68	63	150	64	104	77	102	591	4134
1987	147	134	111	75	133	72	75	82	65	64	152	66	110	80	105	598	4204
1988	154	140	116	78	138	73	75	79	68	65	160	70	117	80	110	600	4292
1989	160	142	118	80	141	72	76	76	72	65	166	72	122	80	113	582	4292
1990	149	140	116	78	135	71	78	75	75	66	162	72	125	76	111	563	4224
1991	130	132	110	73	124	69	78	72	74	65	152	69	122	70	104	528	4004
1992	124	126	106	70	119	67	76	70	71	63	146	64	120	69	99	511	3851
1993	123	122	106	69	118	66	76	69	69	61	145	61	120	70	98	509	3800
1994	122	127	112	72	119	65	76	69	70	65	152	62	123	71	102	533	3908
1995	121	132	114	75	116	65	76	66	70	68	156	63	122	67	104	550	3954
1996	128	136	116	83	117	62	72	69	71	70	153	66	119	66	109	557	4004
1997	132	146	126	86	119	62	74	69	73	69	156	64	129	61	109	570	4115
1998	138	149	132	83	120	66	75	72	77	72	163	67	139	62	109	599	4285
1999	140	158	134	84	123	68	77	74	77	78	172	68	148	65	112	620	4401
2000	146	170	140	87	128	72	81	77	80	83	180	72	157	71	119	628	4566
2001	147	173	144	84	131	73	81	77	80	83	183	75	161	69	122	629	4586
2002	143	170	145	80	131	76	77	76	80	83	175	73	162	68	122	611	4506
2003	138	175	138	81	136	82	78	77	82	83	171	72	166	67	127	604	4526
2004	133	175	131	80	136	80	80	79	83	81	180	72	170	67	125	597	4500
2005	133	179	134	80	137	78	83	82	81	84	188	73	180	73	126	606	4588
2006	132	182	130	86	137	76	80	85	75	93	202	73	202	74	127	609	4632
2007	134	193	129	87	136	76	81	83	76	92	217	73	206	69	127	610	4676
2011	131	206	132	85	139	77	83	88	74	90	236	72	217	68	127	622	4797
2016	129	220	138	83	141	77	83	94	73	88	246	72	251	67	127	646	4953
2021	129	233	148	83	143	77	84	100	75	87	255	71	280	68	127	674	5114
2026	133	238	151	86	148	80	86	103	79	91	264	74	290	70	131	696	5280
2031	138	243	154	89	154	83	87	107	81	95	274	77	300	73	136	718	5452

Source: GLA Economics

Historic and projected population numbers by London borough

GLA Demography 2010 has estimated that London's population could reach 8.8 million by 2031. The table below shows how this is broken down at the borough level.

('000s)	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
1982	161	293	218	247	298	176	7	321	284	261	214	183	149	205	200	242	233
1983	160	291	217	247	299	175	7	320	285	262	214	186	150	207	202	240	235
1984	159	293	218	247	298	176	7	317	288	261	213	186	151	203	205	240	232
1985	158	295	217	246	297	179	7	317	291	263	213	185	152	201	206	239	233
1986	157	296	218	246	295	181	7	317	292	262	214	184	152	201	207	238	232
1987	157	296	218	247	296	182	6	316	292	258	213	184	152	200	206	238	231
1988	157	290	218	246	295	179	6	314	291	257	210	185	151	200	203	236	232
1989	156	297	217	243	296	179	6	314	287	257	209	187	150	199	201	233	235
1990	157	296	217	244	296	181	6	316	286	259	211	187	152	203	201	233	236
1991	156	298	218	241	294	181	5	316	284	260	211	185	154	207	203	231	234
1992	156	297	218	240	292	179	5	317	285	261	212	187	153	206	204	229	235
1993	156	297	218	242	290	179	5	319	286	261	211	188	153	207	206	229	236
1994	157	297	219	246	290	180	5	323	286	260	210	190	154	207	207	229	239
1995	157	299	219	248	290	183	6	327	289	263	209	193	154	209	207	228	240
1996	157	303	218	252	292	186	6	329	293	265	210	193	155	212	207	227	242
1997	158	305	216	255	293	186	6	331	294	268	211	191	155	215	207	226	243
1998	161	308	216	260	292	184	6	333	296	269	212	195	156	217	207	224	244
1999	162	314	218	260	295	190	7	332	302	273	212	199	161	219	208	226	245
2000	164	316	219	265	295	196	7	334	304	275	214	203	164	220	209	225	246
2001	165	320	219	271	296	203	7	335	308	278	217	208	169	223	211	225	246
2002	167	320	219	273	297	203	8	336	309	281	218	209	171	224	212	226	246
2003	167	320	218	273	296	202	8	334	308	282	220	210	171	224	212	225	245
2004	167	320	217	272	297	202	8	333	308	283	223	212	173	225	213	226	246
2005	168	322	218	272	298	203	9	334	309	284	227	216	174	228	214	227	247
2006	169	324	218	274	299	203	9	335	310	288	231	218	176	230	216	228	248
2007	170	324	218	275	300	204	9	335	312	289	233	219	176	232	217	228	251
2008	172	325	219	276	301	206	9	337	314	291	231	221	177	234	217	229	252
2011	178	332	218	273	301	211	10	343	320	293	238	232	177	241	221	231	262
2016	194	351	218	281	300	217	11	350	329	294	261	242	179	249	222	242	268
2021	210	372	220	289	299	222	11	358	336	296	283	252	181	258	223	253	273
2026	226	393	222	296	298	228	12	366	344	297	305	262	182	267	223	264	279
2031	240	412	224	303	297	235	13	375	350	298	326	272	185	274	224	275	283

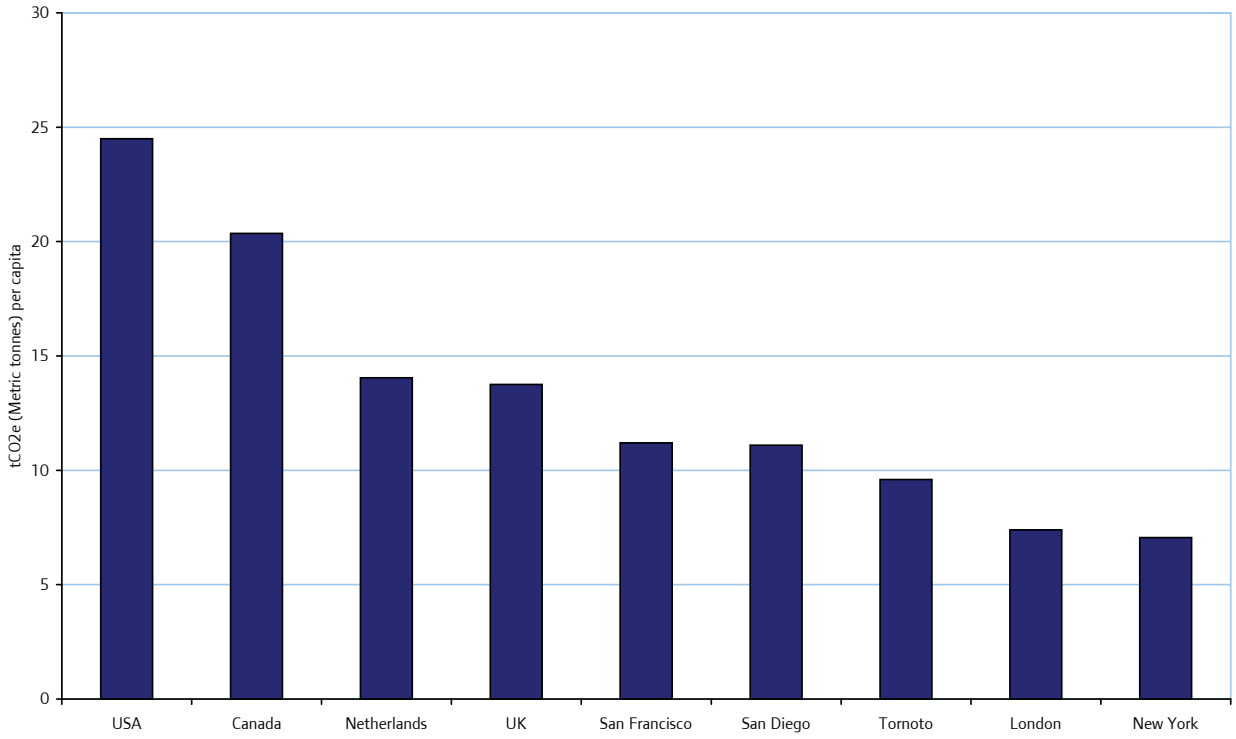
('000s)	Houn-slow	Isling-ton	Ken-sington and Chelsea	King-ston upon Thames	Lam-beth	Lewi-sham	Merton	New-ham	Red-bridge	Rich-mond	South-wark	Sutton	Tower Ham-lets	Walt-ham Forest	Wands-worth	West-minster	Total
1982	202	162	139	133	248	236	167	212	220	163	215	171	144	215	260	187	6765
1983	199	161	138	133	247	235	166	210	218	163	216	170	143	215	260	185	6753
1984	197	163	141	133	247	237	166	209	217	162	217	170	143	215	261	183	6755
1985	196	166	143	133	248	238	167	209	218	162	217	171	145	216	262	181	6767
1986	196	165	144	132	251	239	168	206	217	162	218	170	150	216	261	178	6774
1987	195	165	141	130	251	239	167	208	219	163	219	170	156	214	262	176	6766
1988	193	165	135	132	249	238	168	209	219	160	219	170	159	213	261	172	6729
1989	199	165	141	133	249	237	168	210	219	162	222	171	161	212	261	176	6752
1990	202	169	143	136	246	238	170	212	222	165	228	170	164	214	261	183	6799
1991	204	172	144	136	255	240	171	216	222	167	227	170	166	216	262	185	6829
1992	202	173	142	136	256	240	172	219	224	165	228	171	167	217	262	181	6829
1993	202	173	142	136	255	240	174	222	225	165	231	173	169	218	261	177	6845
1994	202	173	140	136	257	242	176	225	227	165	232	173	172	220	261	174	6874
1995	204	173	141	138	257	240	178	228	229	167	237	174	175	220	260	174	6913
1996	206	175	141	139	260	243	181	230	233	169	237	176	180	220	261	179	6974
1997	210	176	142	141	260	244	182	231	235	170	239	177	185	220	261	182	7015
1998	212	178	143	144	264	247	182	235	236	170	242	178	188	222	261	185	7066
1999	214	176	148	146	267	250	185	241	238	173	248	179	194	221	264	189	7154
2000	215	178	155	147	270	252	188	246	240	173	253	181	197	221	268	197	7237
2001	217	180	161	149	275	255	191	251	242	174	258	181	202	223	272	203	7337
2002	218	183	162	149	278	256	191	252	244	175	260	181	206	224	274	205	7376
2003	218	183	162	150	278	257	191	253	244	176	261	181	207	223	274	205	7379
2004	220	185	163	150	280	259	191	257	244	177	261	181	208	222	276	207	7404
2005	221	187	165	151	283	261	193	258	246	179	265	182	216	222	280	208	7471
2006	222	189	166	152	286	264	195	259	248	182	267	183	221	223	283	210	7527
2007	226	191	167	153	288	265	195	259	250	183	271	183	227	224	285	211	7571
2008	230	197	167	153	290	266	196	261	252	184	275	184	230	226	287	213	7622
2011	237	206	171	155	298	273	198	268	260	186	285	186	248	229	299	218	7798
2016	242	211	176	158	307	284	199	290	268	189	304	185	271	234	309	223	8058
2021	246	217	180	160	315	295	199	313	277	191	321	185	294	239	319	228	8316
2026	250	223	184	162	323	306	200	337	285	192	339	185	316	244	328	230	8569
2031	254	231	187	165	330	317	201	360	294	194	357	185	339	249	338	233	8818

Source: GLA Demography 2010

Appendix E: Risks and opportunities from climate change

'London's Environmental Effectiveness' (GLA Economics 2008) finds that London has relatively low greenhouse gas emissions per capita compared to other cities.

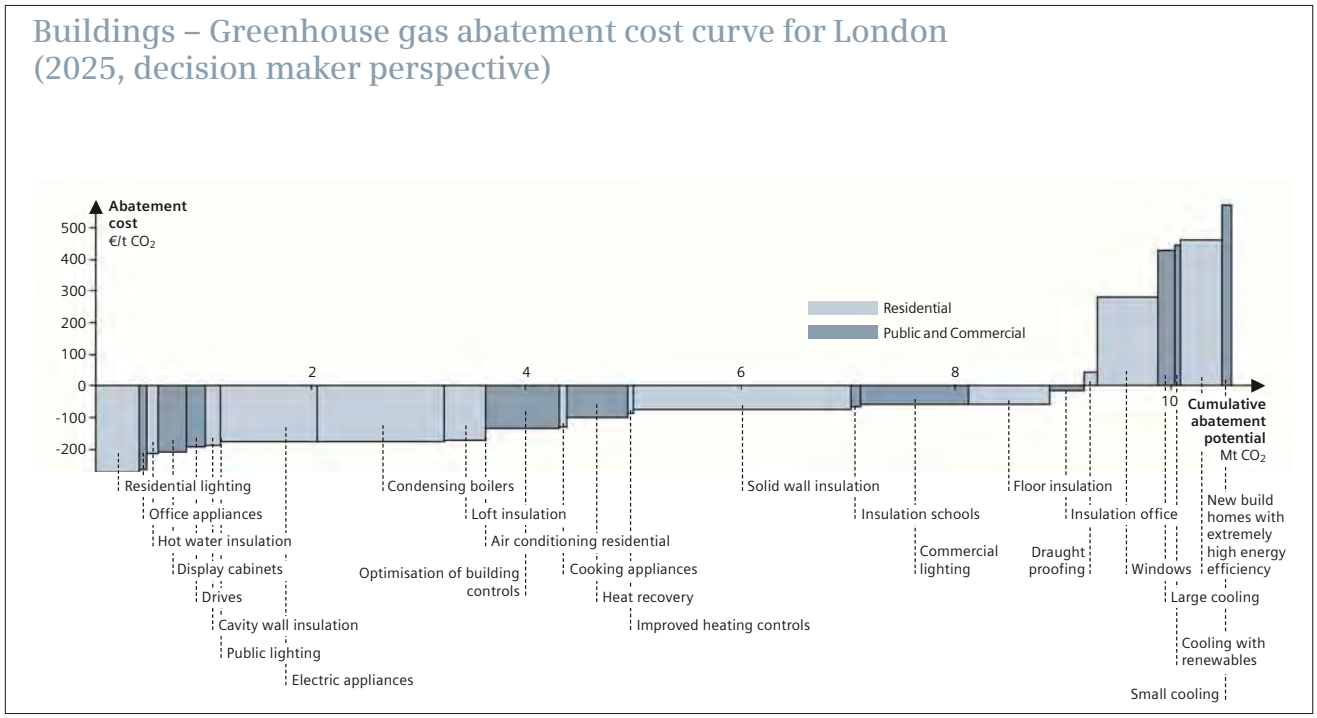
Greenhouse gas emissions per capita in London and New York compared to other cities and countries



Source: GLA Economics 2008

Nonetheless, London is committed to reduce its greenhouse gas emissions by 60 per cent by 2025 (on 1990 levels). Given this, it is important that the city is able to recognise the most cost-efficient ways of achieving its targets, and, according to work by McKinsey & Co.[9], there are a number of measures to reduce emissions in London which pay back over and above the initial investment over the period to 2025. Reducing residential and commercial/industrial building emissions presents the single largest area for potential savings of carbon. It is also the single largest sector in which London can cut the greatest quantity of CO_2 emission with a net financial saving.

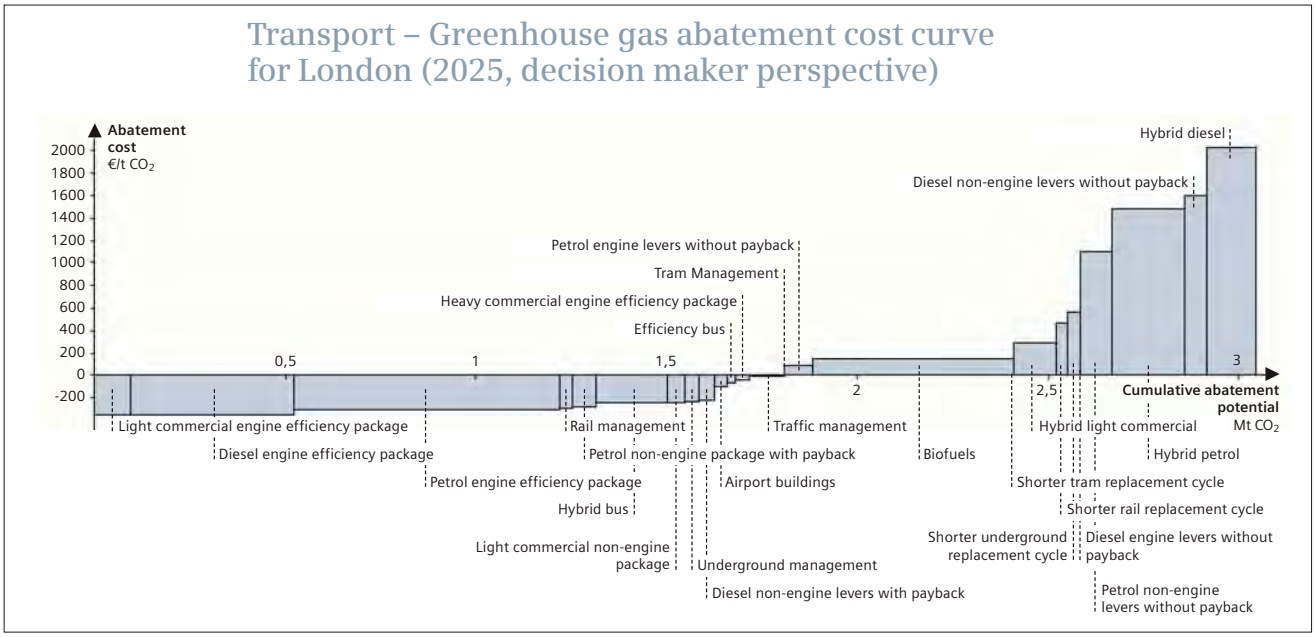
Buildings - greenhouse gases abatement cost curve for London – 2025 decision-maker perspective



Source: McKinsey & Co. (2008)

Annual transport-related carbon emissions in London are estimated to be just over a quarter of the capital's total emissions, with passenger transport and road freight accounting for over 90 per cent of this. Almost 2mt CO_2 of transport-related emissions can be cut in London with a net saving through certain mechanisms such as vehicle efficiency packages.

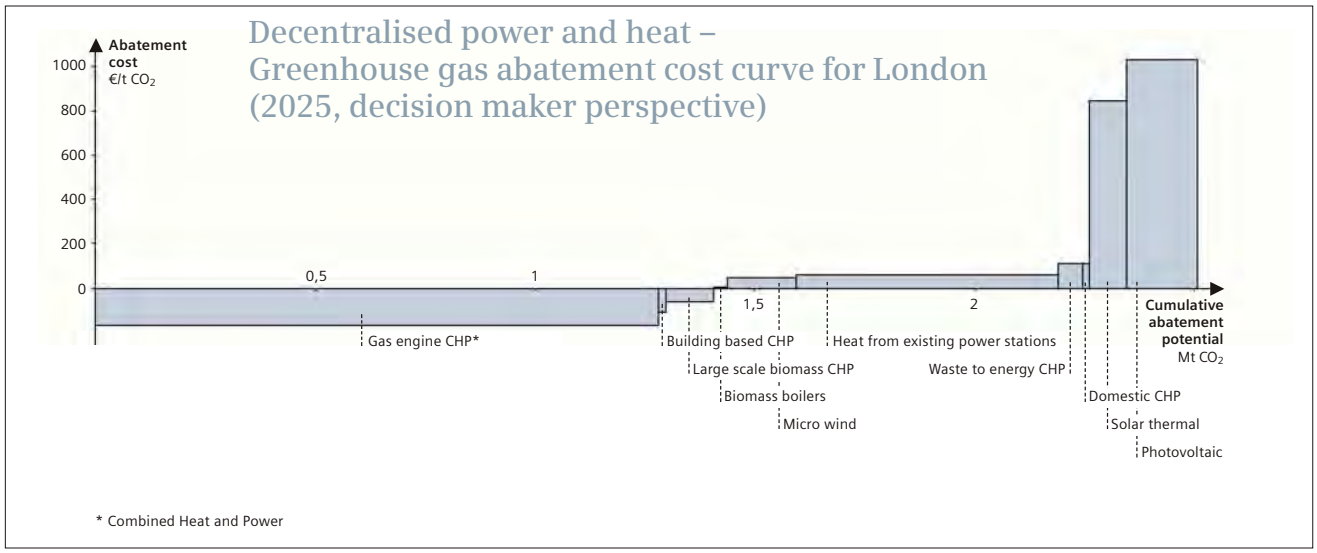
Transport - greenhouse gases abatement cost curve for London – 2025 decision-maker perspective



Source: McKinsey & Co. (2008)

There are also measures with negative abatement costs to London in the generation of power and heat. As a result of the UK's grid mix's carbon intensity relative to other developed nations, London has a higher carbon intensity of energy than either New York or Tokyo, according to this McKinsey study. The study suggests that gas engine CHP has the potential to significantly reduce CO_2 at a net saving to London's economy.

Decentralised HP - greenhouse gases abatement cost curve for London – 2025 decision-maker perspective



Source: McKinsey & Co. (2008)

Without significant intervention worldwide to reduce greenhouse gas emissions countries around the world place one another under increased risks from global warming and its associated costs. As things already stand, Munich Re 'Megacities, Megarisk' study finds that the UK is currently under large natural disaster risk, predominantly in the form of winter storms.

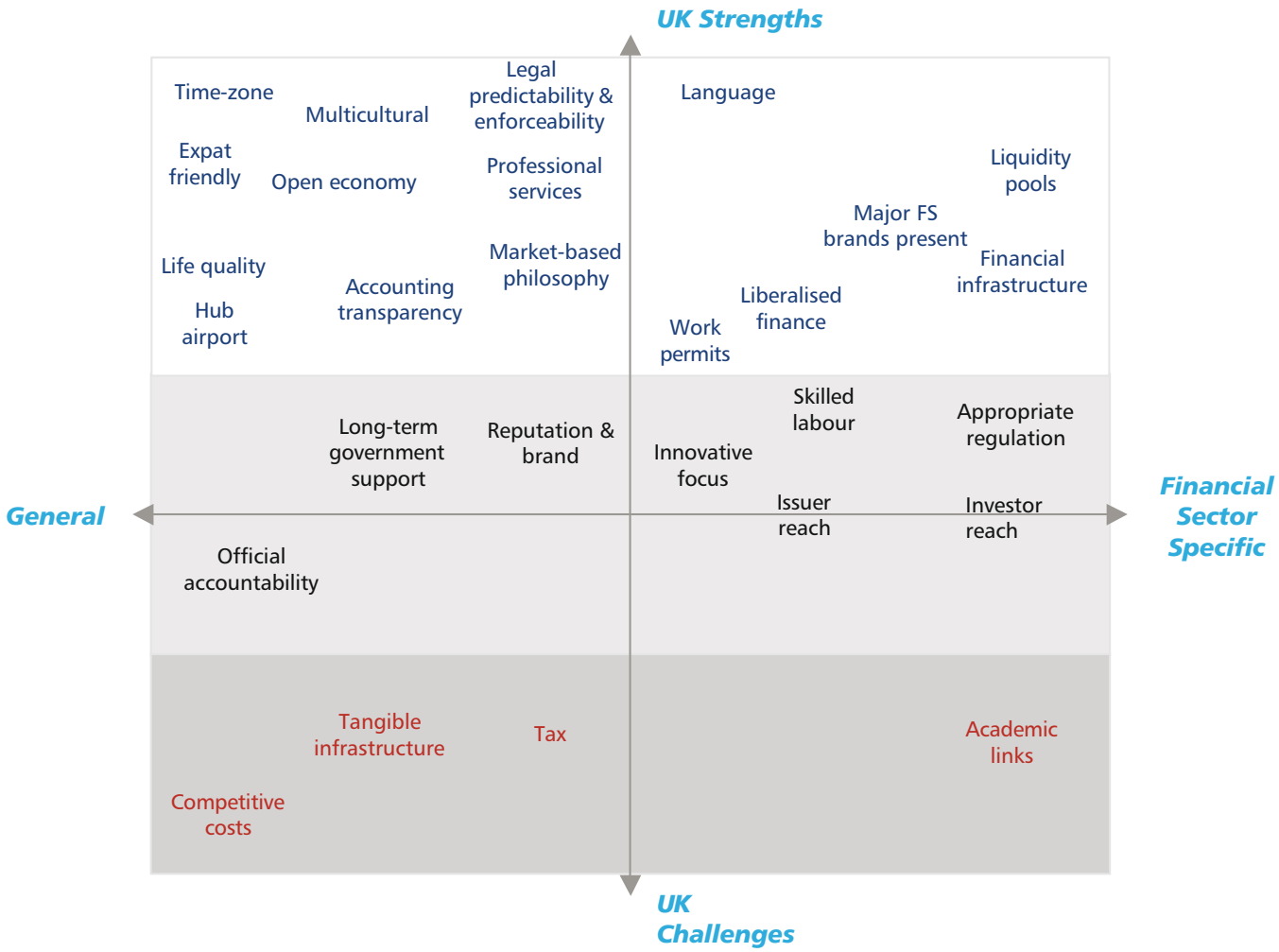
Megacity	Country	Population (mill.) (1)		Area (km²) (2)	City GDP in % of country's GDP (3)	Natural hazards (4)								Risk index (5)
		As at 2003	Forecast for 2015			Earthquake	Volcanic eruption	Tropical storm	Winter storm	Thunderstorm/ hailstorm/tornado	Flood	Tsunami	Storm surge	
Tokyo	Japan	35.0	36.2	13,100	40									710.0
New York	USA	21.2	22.8	10,768	<10									42.0
Seoul, Inchon	South Korea	20.3	24.7	4,400	50									15.0
Mexico City	Mexico	18.7	20.6	4,600	40									19.0
São Paulo	Brazil	17.9	20.0	4,800	25									2.5
Mumbai	India	17.4	22.6	4,350	15									5.1
Los Angeles	USA	16.4	17.6	14,000	<10									100.0
Delhi	India	14.1	20.9	1,500	<5									1.5
Manila, Quezon	Philippines	13.9	16.8	2,200	30									31.0
Calcutta	India	13.8	16.8	1,400	<10									4.2
Buenos Aires	Argentinia	13.0	14.6	3,900	45									4.2
Osaka, Kobe, Kyoto	Japan	13.0	13.2	2,850	20									92.0
Shanghai	China	12.8	12.7	1,600	<10									13.0
Jakarta	Indonesia	12.3	17.5	1,600	30									3.6
Dhaka	Bangladesh	11.6	17.9	1,500	60									7.3
Rio de Janeiro	Brazil	11.2	12.4	2,400	15									1.8
Karachi	Pakistan	11.1	16.2	1,200	20									3.1
Ruhr area	Germany	11.1	11.1	9,800	15									14.0
Cairo	Egypt	10.8	13.1	1,400	50									1.8
Beijing	China	10.8	11.1	1,400	<5									15.0
Lagos	Nigeria	10.7	17.0	1,100	30									0.7
Moscow	Russian Fed.	10.5	10.9	1,100	20									11.0
Paris	France	9.8	10.0	2,600	30									25.0
Istanbul	Turkey	9.4	11.3	2,650	25									4.8
Chicago	USA	9.2	10.0	8,000	<5									20.0
Lima	Peru	7.9	9.4	550	50									3.7
Washington, Baltimore	USA	7.6	8.6	9,000	<5									16.0
London	UK	7.6	7.6	1,600	15									30.0
Bogotá	Colombia	7.3	8.9	500	20									8.8
Teheran	Iran	7.2	8.5	500	40									4.7

None Low Medium High

Source: Munich Re.

Appendix F: Risks to London's attractiveness to business and people

Although the UK is one of the most attractive countries in the world there are some areas where improvements can, and should, be made to at least sustain this position. Set out in the figure below[10] the UK's strengths and weaknesses are.

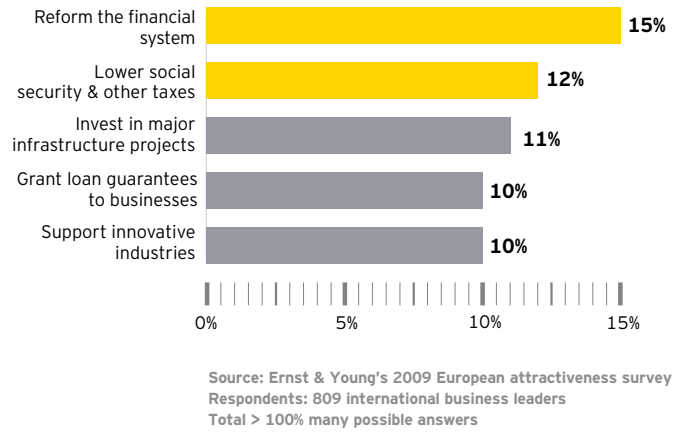


Source: HM Treasury

Financial market regulation

According to the Ernst and Young European Attractiveness Survey (2009) reform in the financial system is the most expected government initiative in Europe. However, this was not a reform that international decision markers believe would make Europe a real leader in international competitiveness and attractiveness.

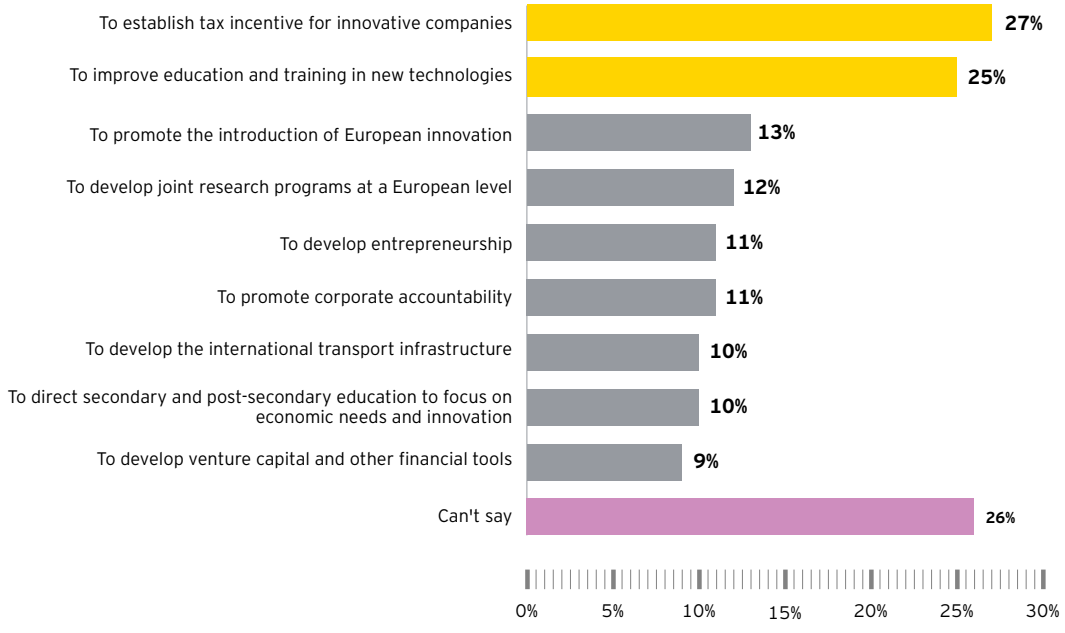
Top 5 actions expected from European governments to stimulate growth



Source: Ernst & Young's 2009 European attractiveness survey
Respondents: 809 international business leaders
Total > 100% many possible answers

Source: Ernst & Young (2009) European Attractiveness Survey

Reforms to make Europe a real leader in international competitiveness and attractiveness



Source: Ernst & Young's 2009 European attractiveness survey
Respondents: 809 international business leaders
Total > 100% many possible answers

Source: Ernst & Young (2009) European Attractiveness Survey

Higher costs of doing business

A number of surveys highlight the relative expense of London. For example, the PWC Cities of Opportunity 2008 ranks London toward the lower end of its table, with the highest cost of business occupancy and second highest cost of living.

	Cost of business occupancy	Cost of living	Purchasing power	Total tax take
20 Houston 65	16	18	18	13
19 Johannesburg 64	**20**	**20**	9	15
18 Chicago 62	13	17	19	13
17 Dubai 60	15	14	11	**20**
17 Los Angeles 60	11	16	**20**	13
15 Toronto 52	9	15	14	14
14 Mexico City 49	19	19	4	7
13 Singapore 44	12	6	7	19
12 New York 43	4	9	17	13
11 Sydney 42	10	7	16	9
10 Frankfurt 38	5	12	13	8
10 Sao Paulo 38	18	11	5	4
8 Seoul 36	6	3	10	17
7 London 31	1	2	12	16
6 Hong Kong 30	2	4	6	18
6 Tokyo 30	8	1	15	6
4 Shanghai 29	14	10	3	2
3 Beijing 28	17	8	1	2
2 Mumbai 25	7	13	2	3
1 Paris 21	3	5	8	5

Each city's score (here 65 to 21) is the sum of its rankings across variables. The city order from 20 to 1 is based on this score. See maps on pages 10–11 for an overall indicator comparison.

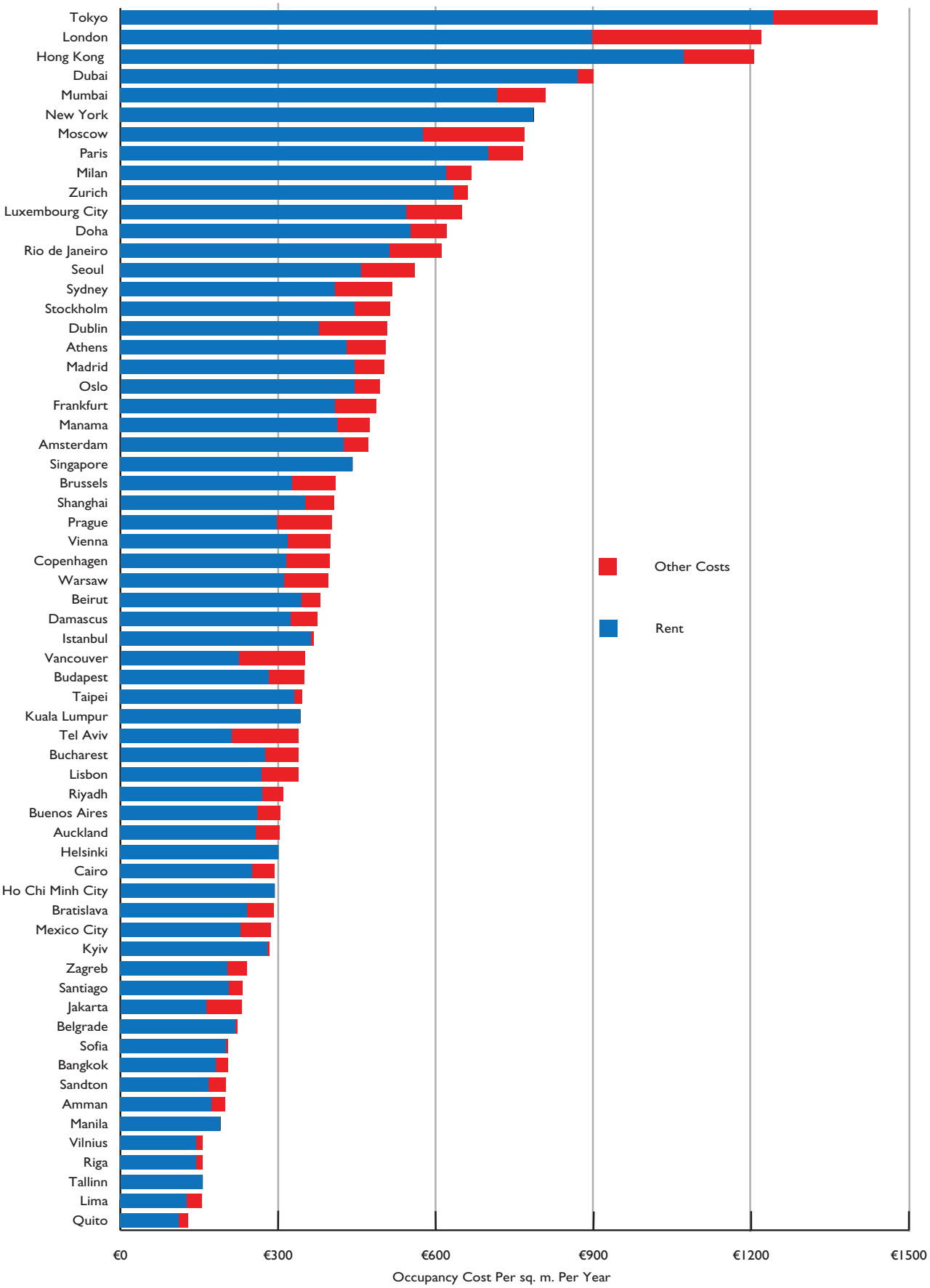
High
Medium
Low

Highest rank in each variable

Source: PWC Cities of Opportunity 2008

Note: Each city's score (from 65 to 21) is the sum of its markings across variables. The city order from 20 to 1 is based on this score.

Cushman & Wakefield's 2010 Office Space Across the World also finds that London is amongst the most expensive locations worldwide (and first most expensive within Europe).



Source: Cushman & Wakefield 2010

Risks to attracting people to London

The UK tends to rate poorly relative to other developed countries in rankings based on quality of life indicators. A number of such rankings are set out in the table below.

Index	Focus	UK's Rank (Number of countries in the sample)
European Quality of Life Index	Based on disposable income, average weekly working hours, hours of sunshine, retirement age, life expectancy, GDP/head, education spending (as a % of GDP), and number of statutory holiday days.	10th (10) (2009)
PWC Cities of Opportunity: Health, Safety & Security Index	Based on levels of crime, number of hospitals, healthy living expectancy, infant survival rate, natural disaster risk, and political and social environment.	11th (20) (2008)
Economist Global Liveability Index	Based on 30 factors across stability, healthcare, culture and environment, education, and infrastructure.	35th (140) (2009)
Vision of Humanity Global Peace Index	Based on material well-being, culture, education, demographics, regional and international framework/conditions, international openness, democracy and transparency, and internal and external conflicts (including crime, human rights, ad political instability).	35th (144) (2009)
UN Human Development Index	Based on a composite measure of 3 dimensions of human development: living a long & healthy life, being educated, and having a decent standard of living.	21st (182) (2009)
Legatum Prosperity Index	Based on economic fundamentals, entrepreneurship & innovation, democratic institutions, education, health, safety & security, governance, personal freedom, and social capital.	12th (104) (2009)
WEF Global Competitiveness Index	Based on a wide range of factors categorised within institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technological readiness, market size, business sophistication, and innovation.	13th (133) (2009/10)
Transparency International Corruption Perceptions Index	Survey based on the perceived level of public sector corruption in a country.	17th (180) (2009)
Heritage/WSJ Economic Freedom Index	Based on business freedom, trade freedom, fiscal freedom, government spending, monetary freedom, investment freedom, financial freedom, property rights, freedom from corruption, and labour freedom.	11th (179) (2010)

Cost of living

Traditionally London is cited as one of the world's most expensive cities, indeed, in 2008 UBS's Price and Earnings Survey found London to be the most expensive (once rent is included). However, the recent depreciation of Sterling has meant that by 2009 London had moved down to 17th position[11].

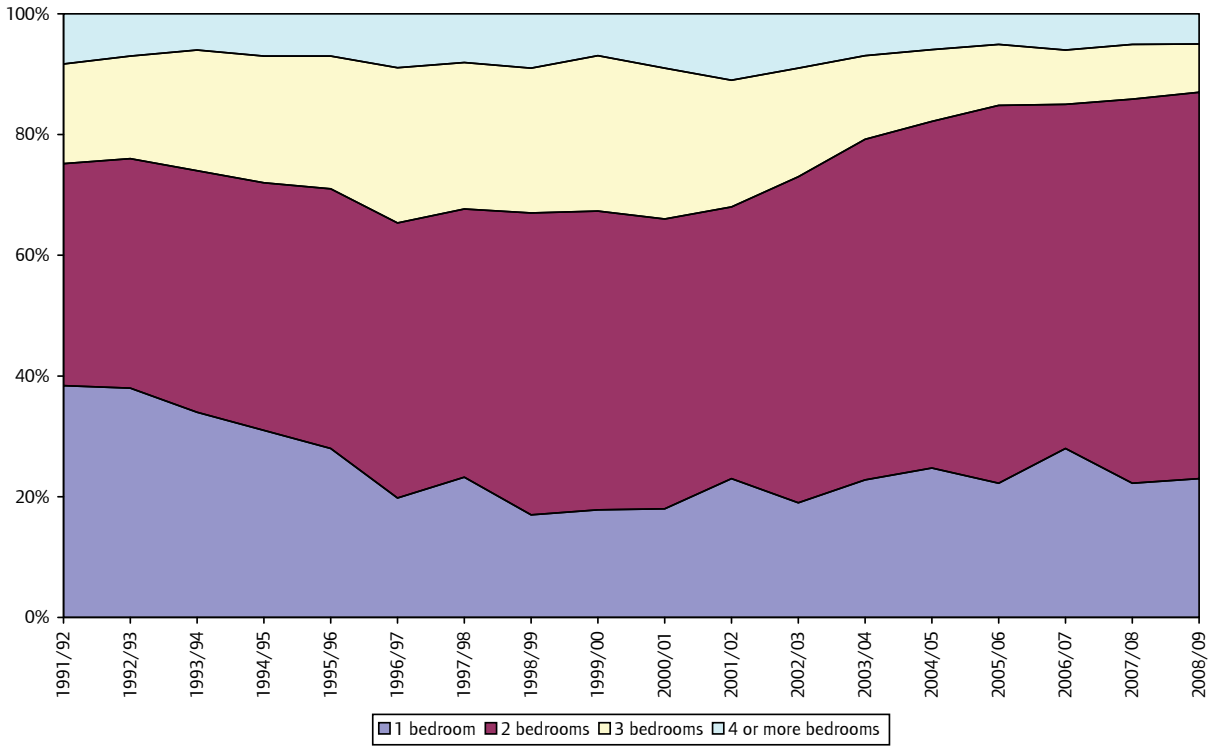
City[1]	Excl. rent New York = 100	Incl. rent New York = 100
Oslo	112.5	88.1
Zurich	108.4	84.7
Copenhagen	108.4	81.8
Geneva	106.8	85.5
Tokyo	102.0	85.3
New York	100.0	100.0
Helsinki	94.5	74.4
Vienna	93.5	68.9
Paris	93.3	76.6
Dublin	92.7	76.3
Munich	92.3	69.5
Caracas	91.0	76.6
Frankfurt	90.8	70.6
Luxembourg	90.6	69.8
Los Angeles	88.1	72.7
Stockholm	87.0	65.5
Rome	86.7	69.4
Lyon	85.2	62.2
Dubai	84.9	78.4
Brussels	84.7	67.6
London	84.6	69.9
Barcelona	83.5	65.3
Amsterdam	83.0	64.4
Singapore	82.0	70.7
Chicago	82.0	72.0
Madrid	81.0	63.1
Berlin	81.0	59.8
Hong Kong	80.9	75.2
Miami	79.3	69.6
Milan	78.9	64.4
Toronto	78.9	63.0
Montreal	76.3	59.6
Tel Aviv	75.5	57.3
Istanbul	74.2	58.9

Source: UBS 2009

1 Listed according to value of index (price level without rent)

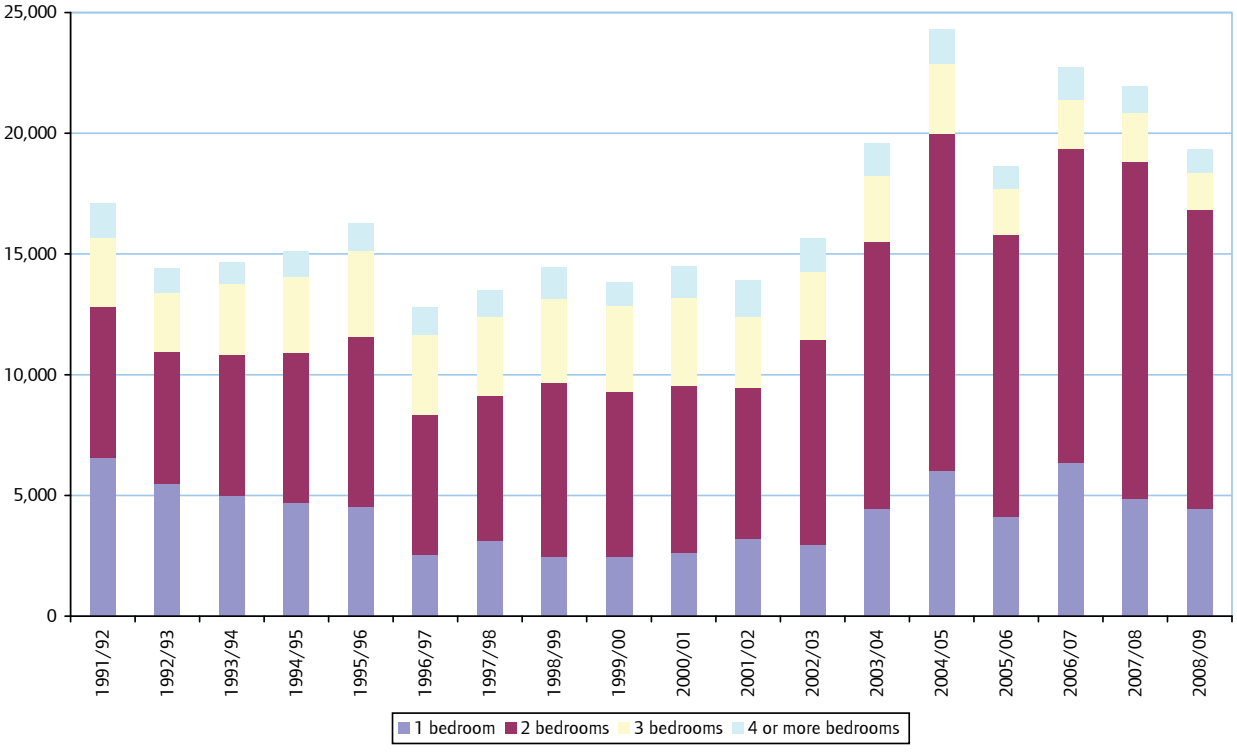
In line with the increasing trend toward smaller households the number (and proportion) of 2 bedroom dwellings in London has been rising.

Proportion of new dwellings by number of bedrooms



Source: CLG

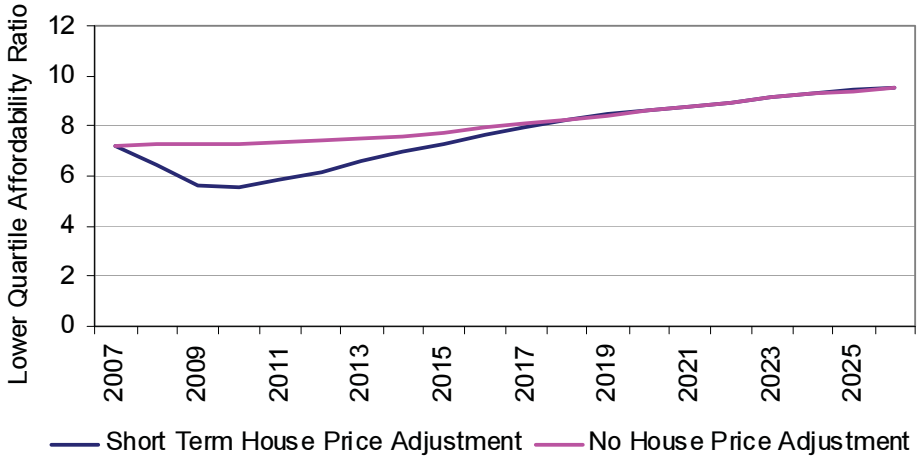
Number of housing completions by number of bedrooms



Source: CLG

Nevertheless housing supply pressures continue, and despite a recession driven short-term fall in house prices, the long-term fundamental drivers of housing demand are likely to mean that, in the absence of a large increase in supply, housing becomes progressively less affordable over the next two decades in London.

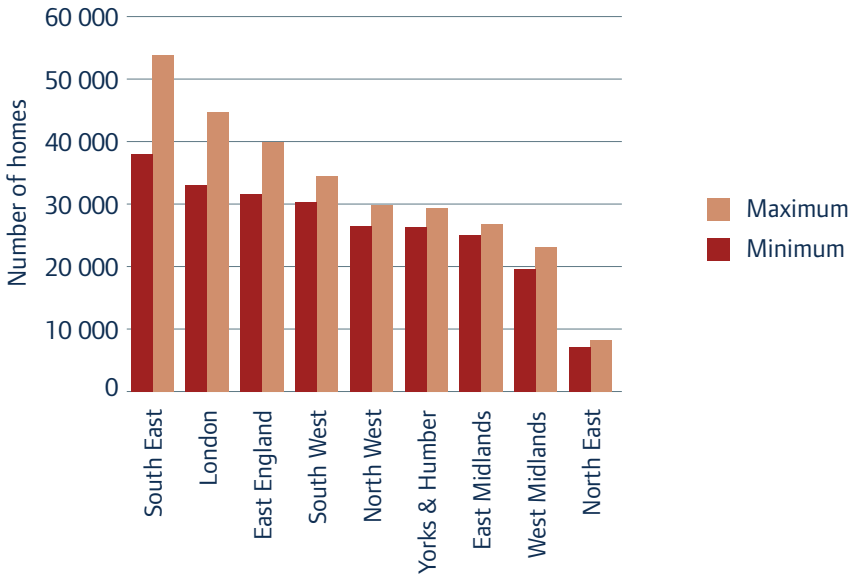
NHPAU estimates of long-term affordability



Source: National Housing and Planning Advice Unit (NHPAU)

The NHPAU estimate, that between 2008 and 2031, an average annual supply of 44,700 homes will be required in London to stabilise housing affordability at 2007 level (and 31,300 per annum to meet demographic requirements).

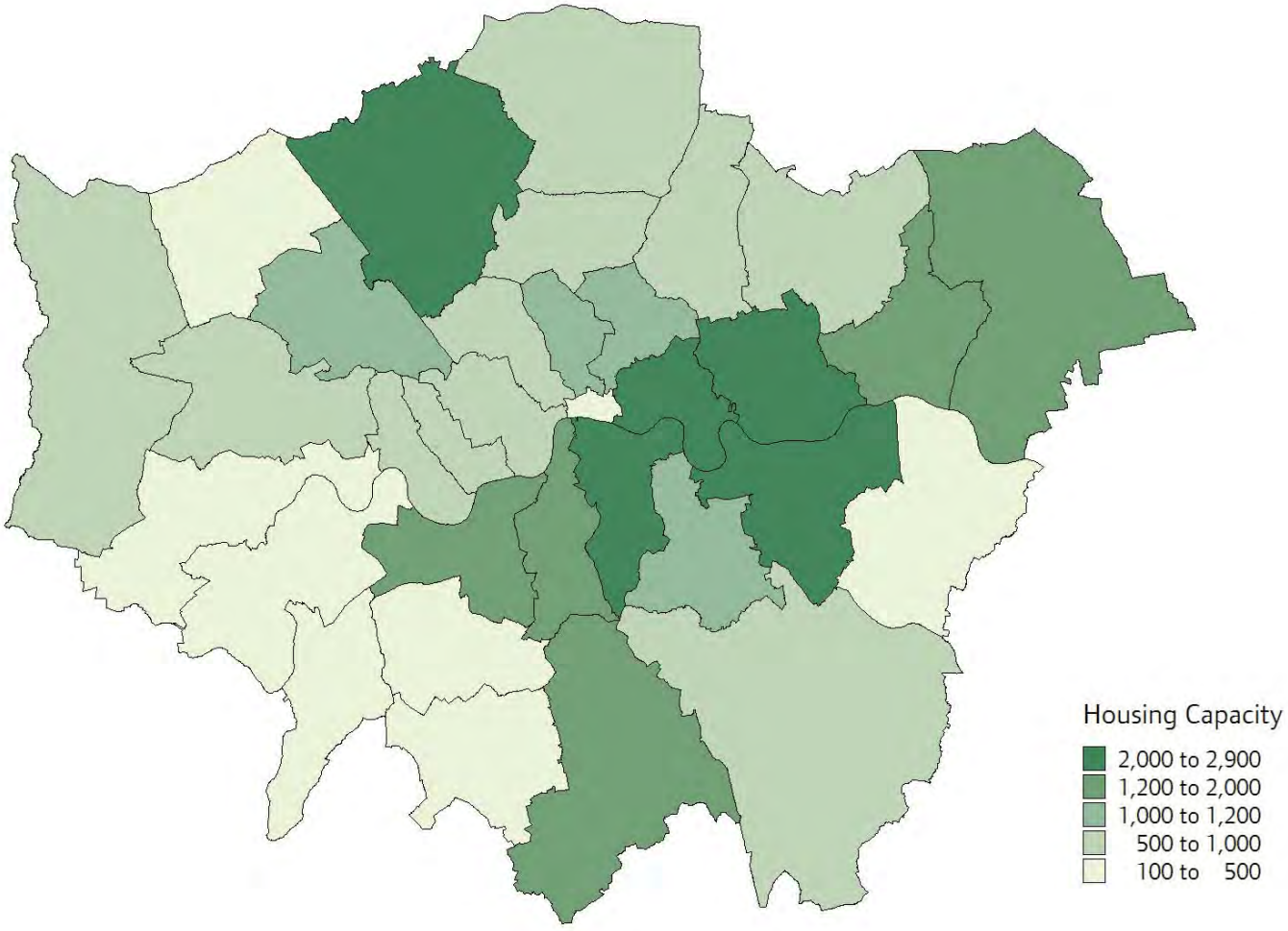
Average annual housing supply estimated by NHPAU to be required in each region, 2008 to 2031



Source NHPAU

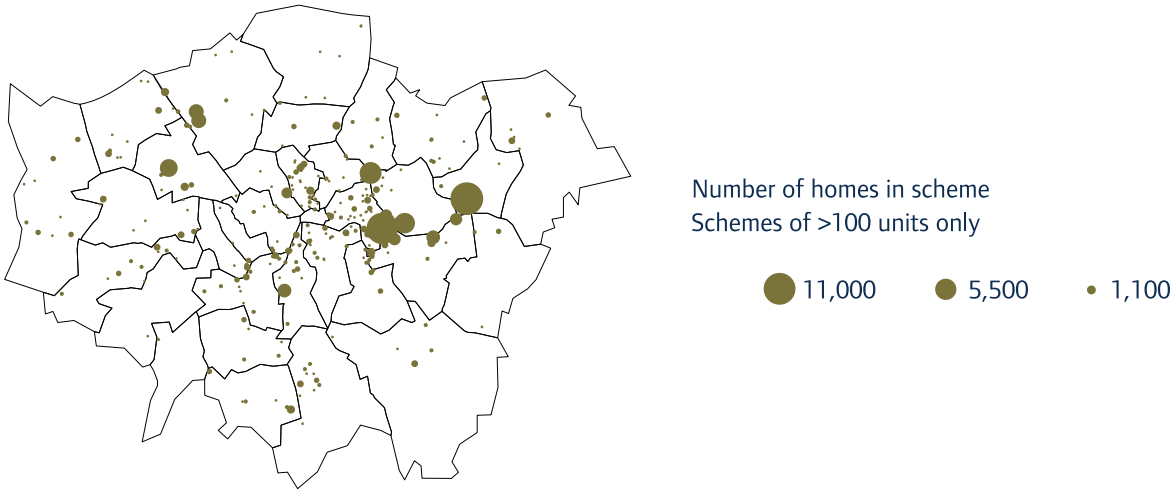
Currently, housing capacity in London is largely located in the east where there is also the greatest number of outstanding planning permissions for new homes.

Annual average housing provision monitoring targets for 2011-2021



Source: GLA

Distribution of outstanding planning permissions for new homes by scheme size, 2008



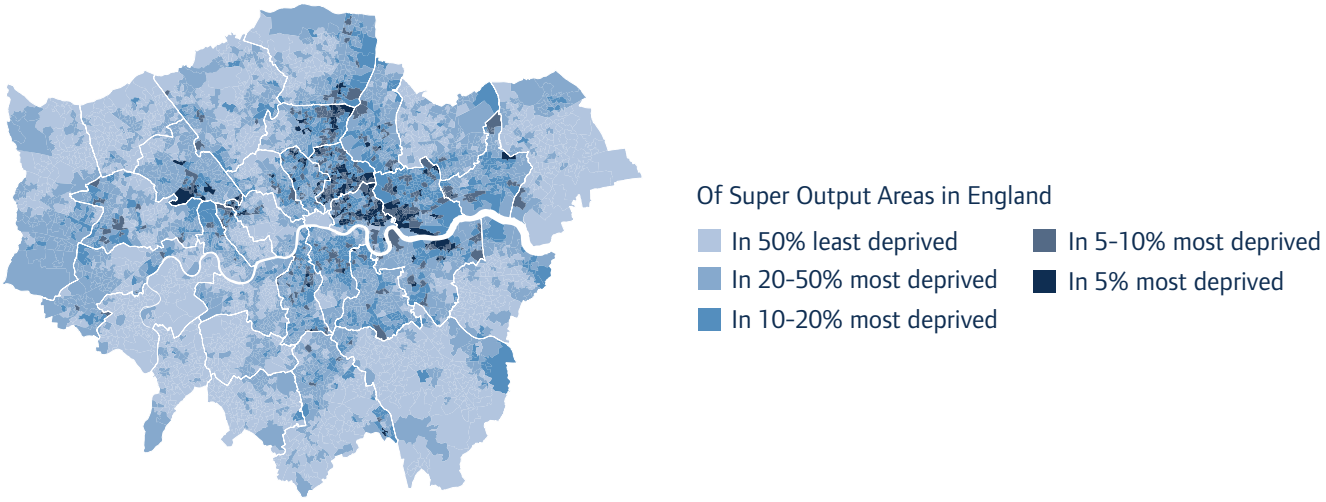
Source GLA

Note: Only sites for 100 homes or more are included

Appendix G: Socio-economic issues

Whilst parts of London are wealthy there are some parts that fall within the most deprived 5 per cent of areas in England as a whole. Based on the Indices of Multiple Deprivation (IMD) these deprived areas appear to be in the inner north and east of London.

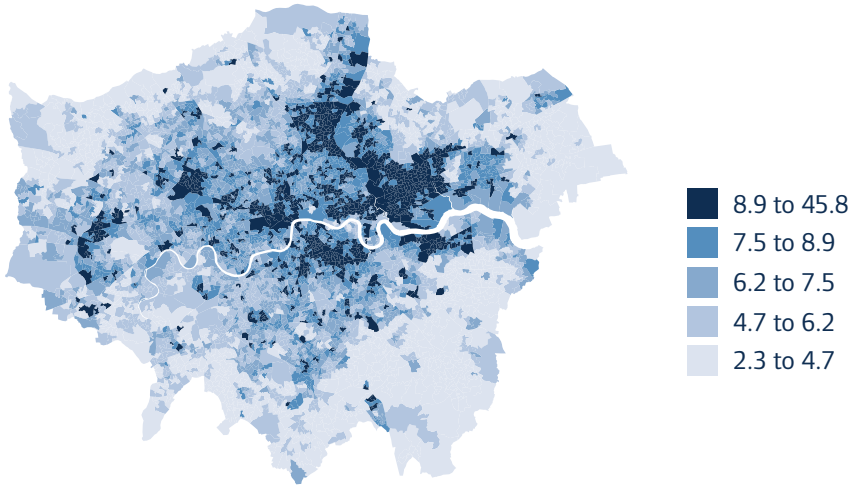
Deprivation in London, 2007



Source GLA

Unsurprisingly, these areas tend to have a disproportionate number of households in fuel poverty.

Estimated proportions of households in London in fuel poverty (equivalised residual income definition)

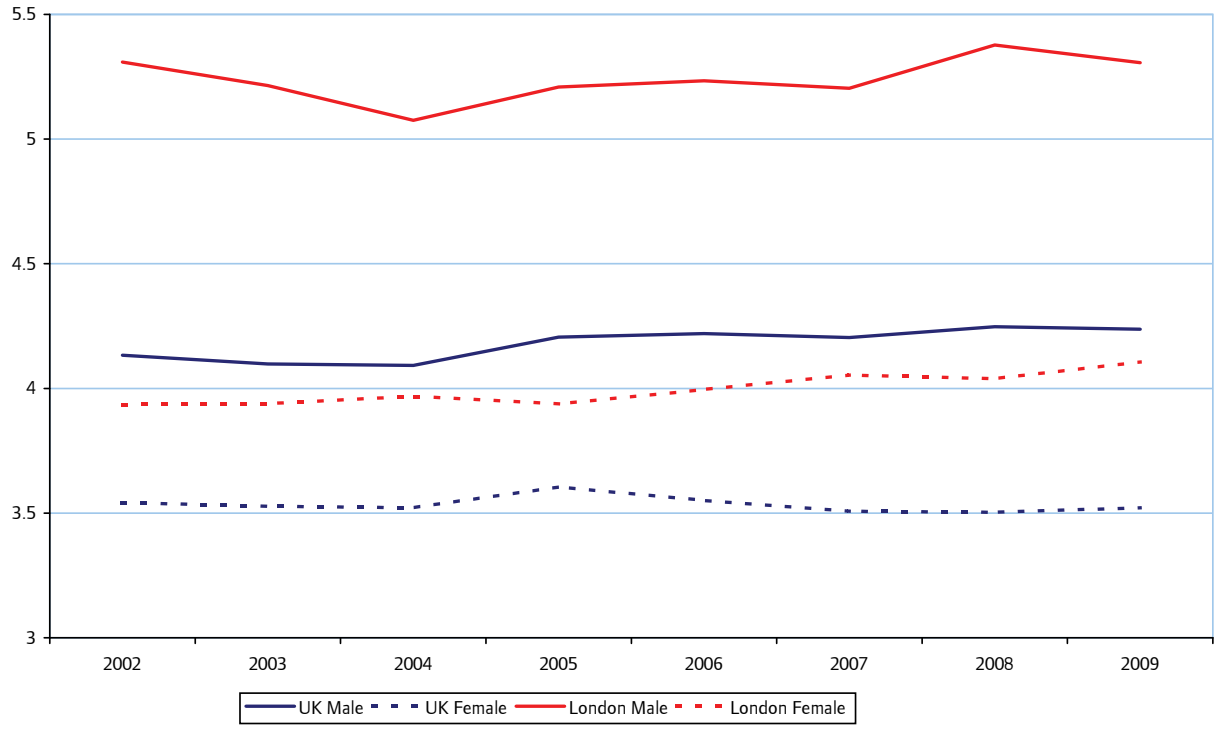


Source Centre for Sustainable Energy

Income distribution

London's polarised income distribution is significantly pronounced amongst its male population.

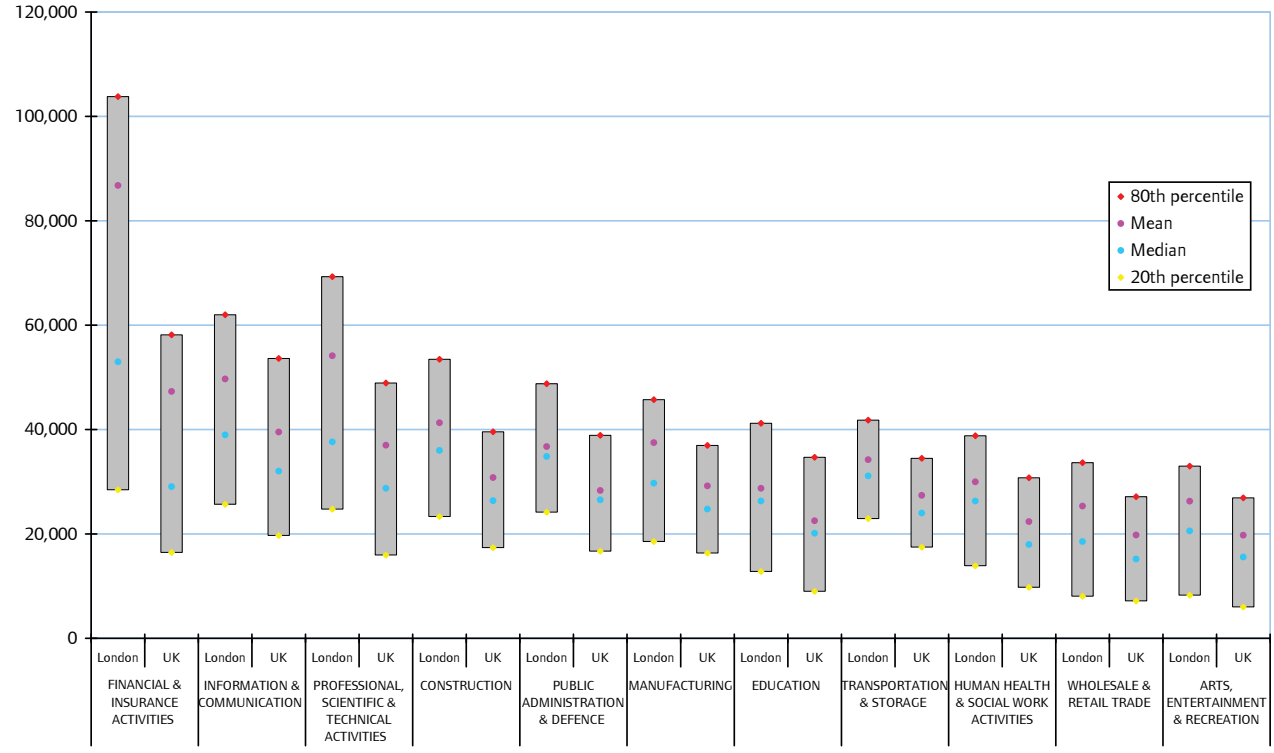
90th percentile/10th percentile hourly pay ratio



Source: ASHE

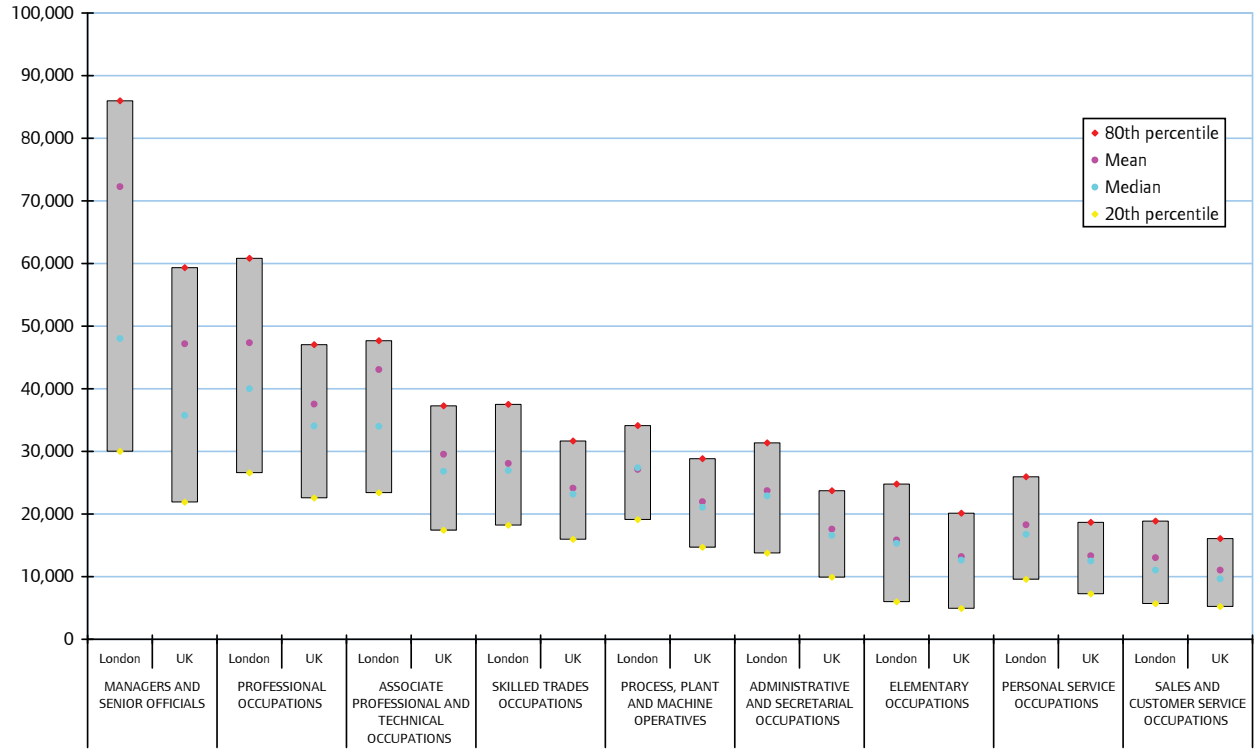
Compared to the UK, London also tends to have greater inter and intra-industry/profession pay disparities.

UK and London gross annual pay by industry, 2009 (2 digit SIC - 2007)



Source: ASHE

UK and London gross annual pay by occupation, 2009

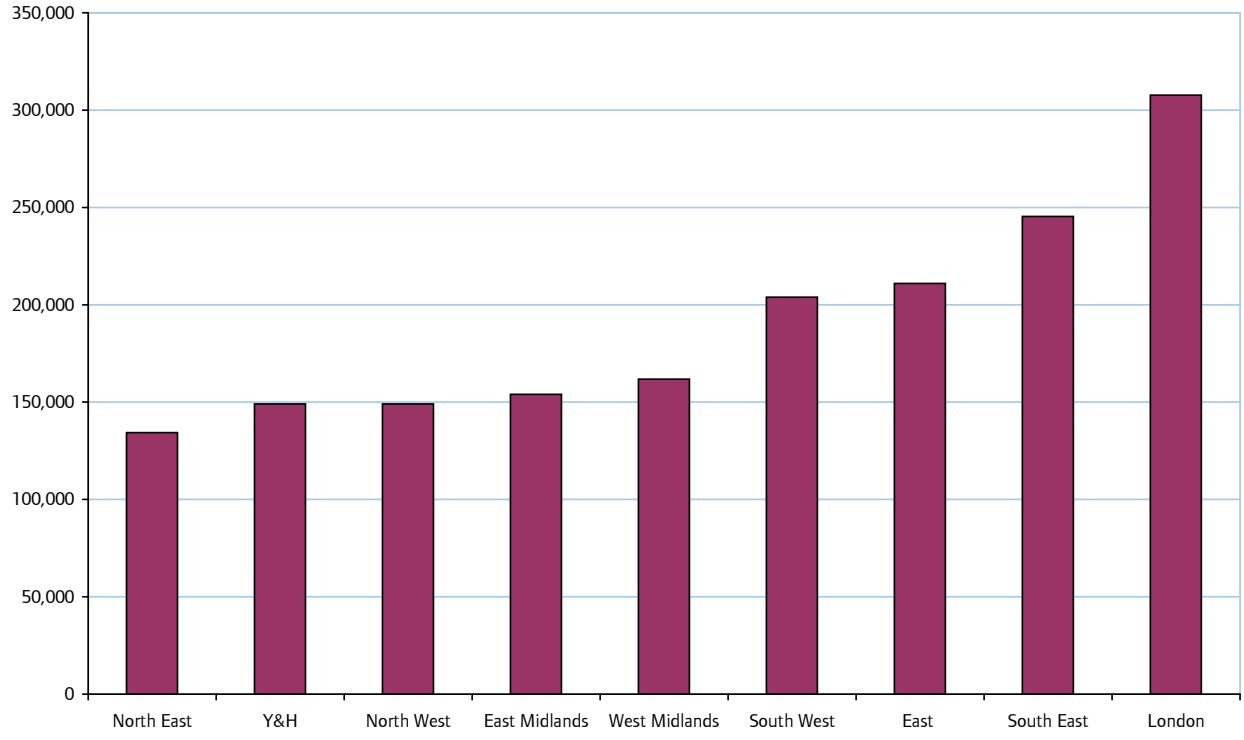


Source: ASHE

Housing

House prices in London are by far the highest of any region in England, costing on average £307,700 in 2009 Q3.

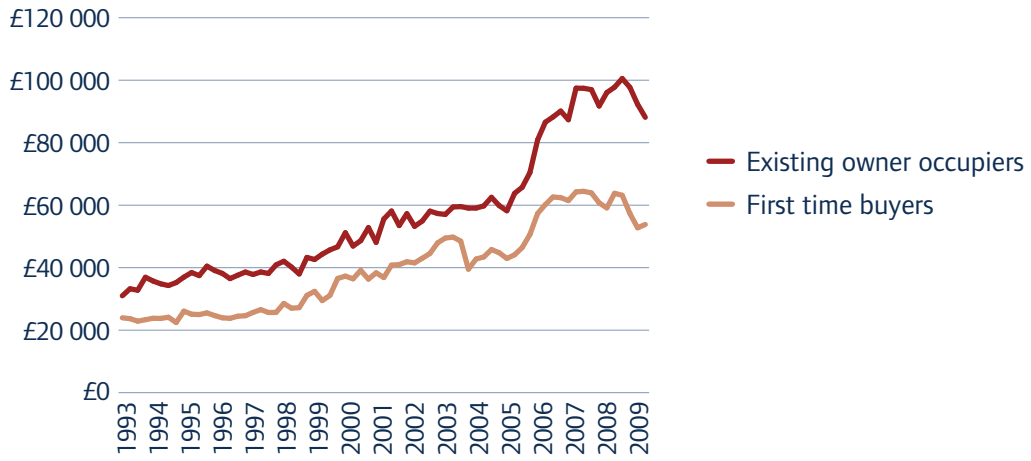
Mix-adjusted mean house prices (£) by region, 2009 Q3



Source: CLG

Increasing house prices in London have resulted in the average income of home buyers (both existing home owners and first time buyers) increasing over time. The chart below shows that the average income (including joint incomes where a couple purchased together) of those buying a house in London in early 2009 was £53,800 for first time buyers and £88,100 for existing owner occupiers.

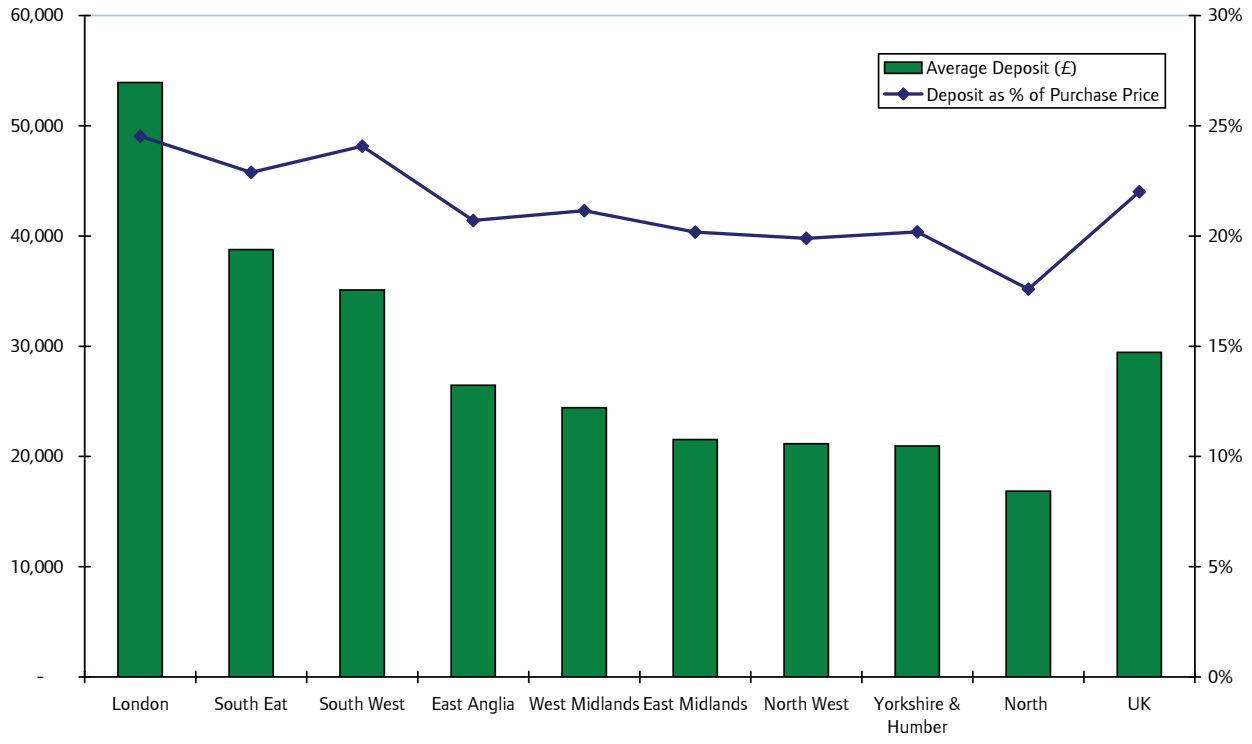
Average recorded income of home buyers in London by buyer type, 1992 to 2009



Source CLG

Although the recent recession has provided a small, possibly temporary, fall in house prices by December 2009 the average first time buyer deposit in London was significantly higher than in any other UK region, with deposit values as a proportion of the purchase price also greater.

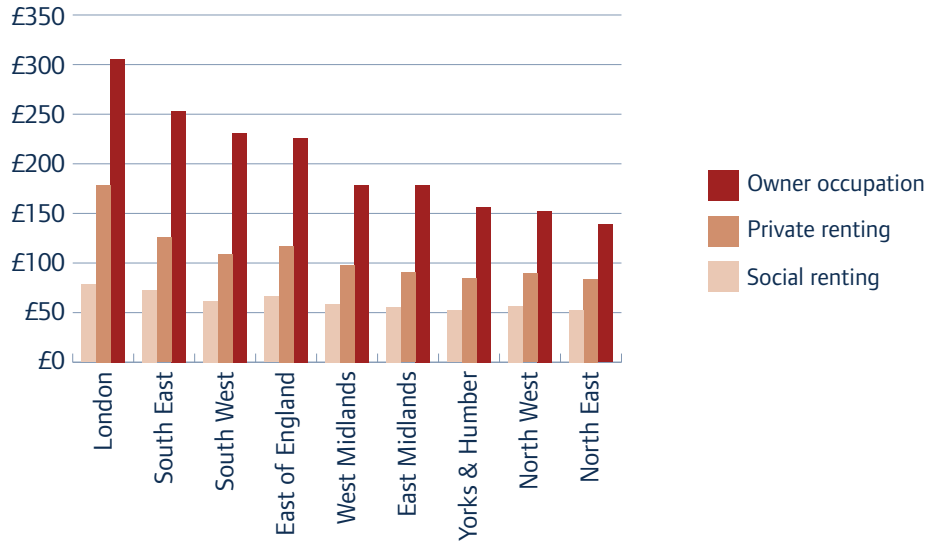
Average first time buyer deposits by region, 2009



Source: HBOS

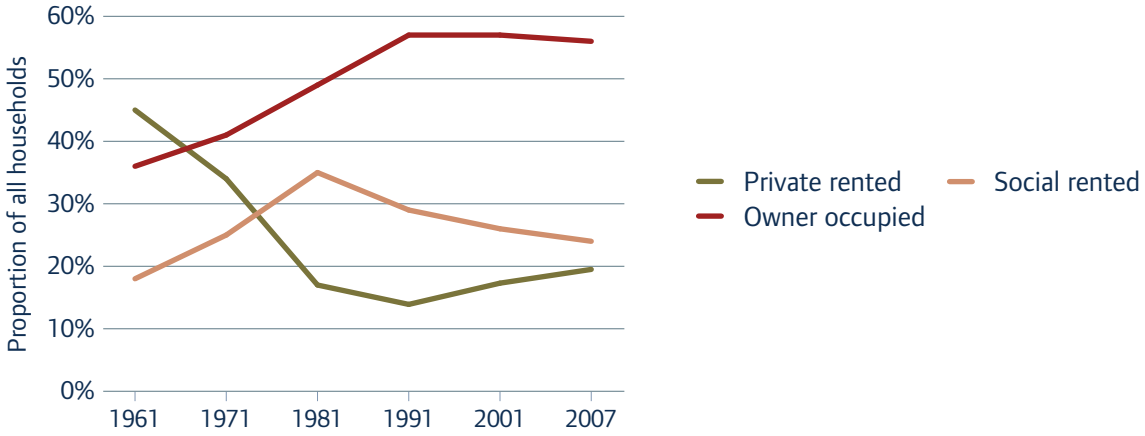
There has been an upturn in private renting since 1991.

Weekly costs of social rent, private rent and owner occupation by region, 2006/07



Source Dataspring

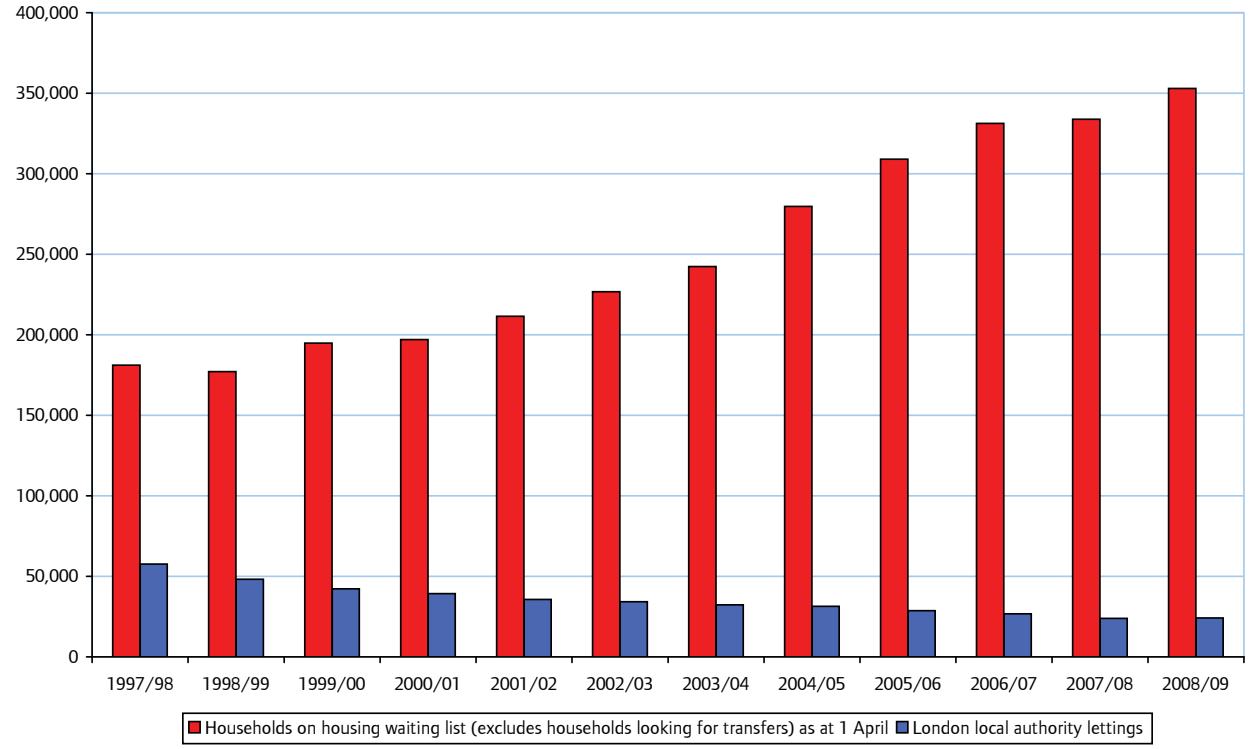
Housing tenure in London, 1961 to 2007



Source GLA

This trend is partially due to the increasing discrepancy between waiting lists and the numbers receiving social housing.

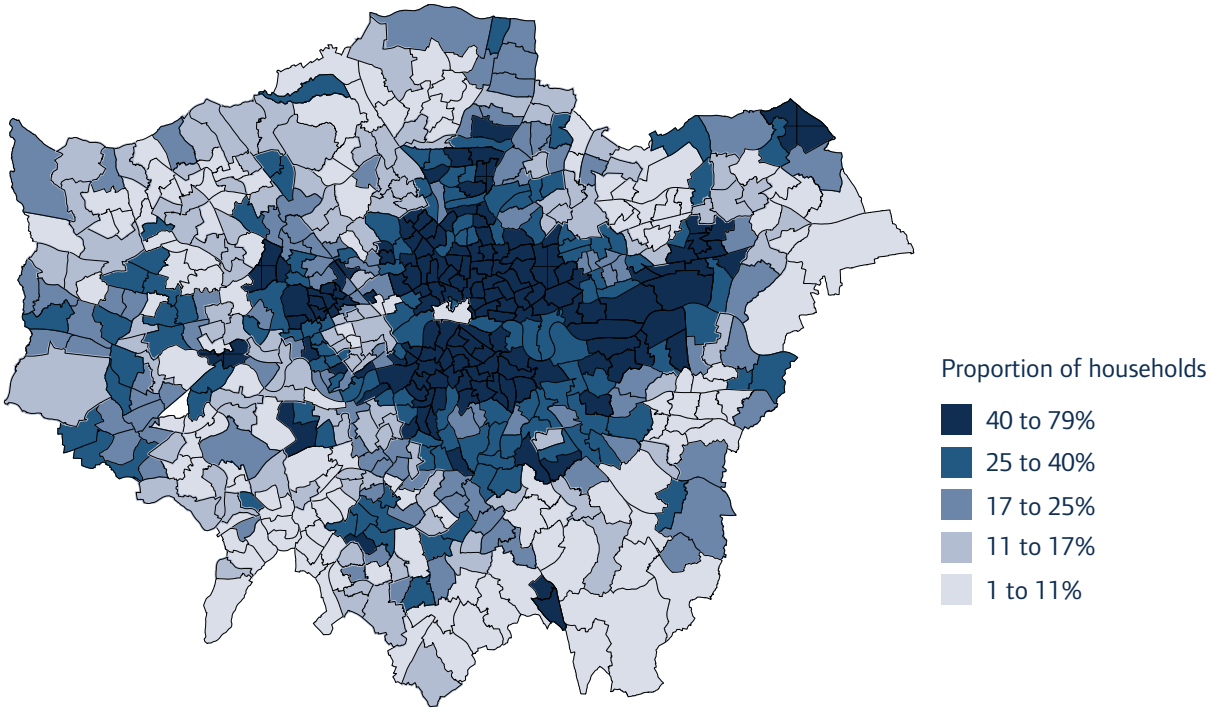
Households on local authority waiting lists and social housing lettings in London, 1997/8 to 2008/9



Source: CLG

There are large differences in the proportion of households living in social housing across London wards, and this proportion is particularly high in the East.

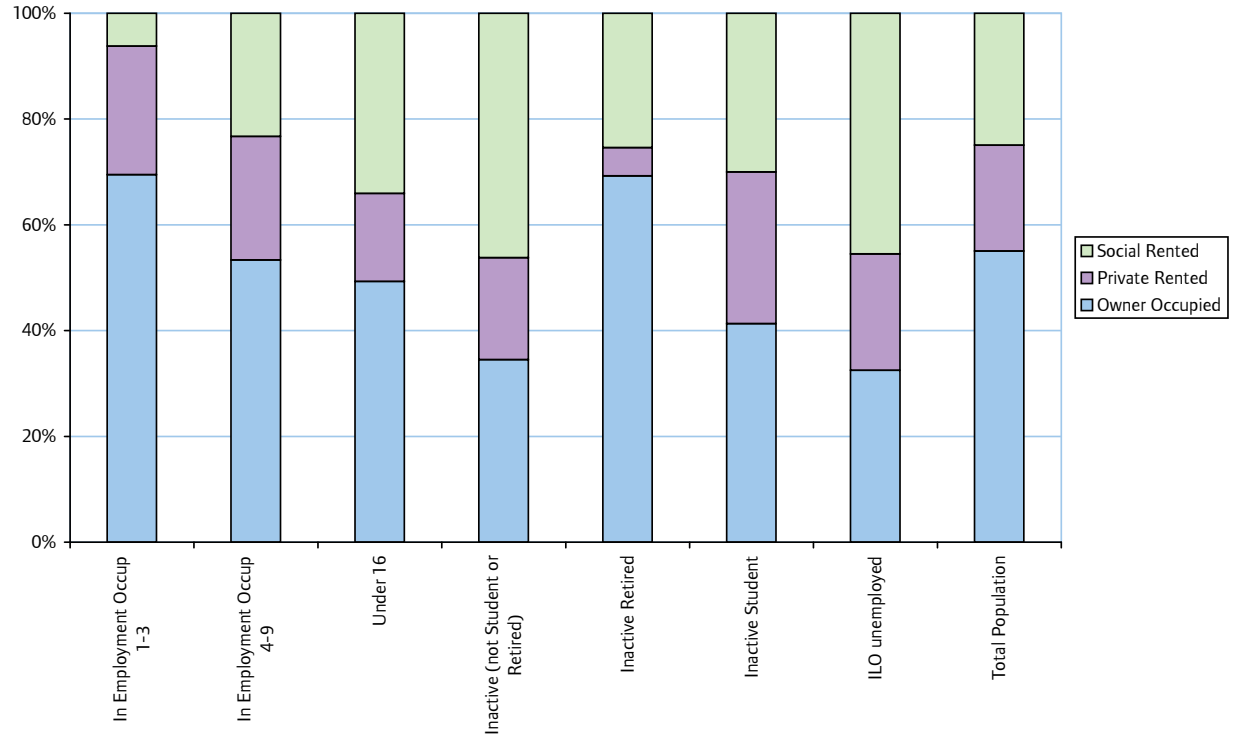
Social renting households in London by ward, 2001



Source Census 2001

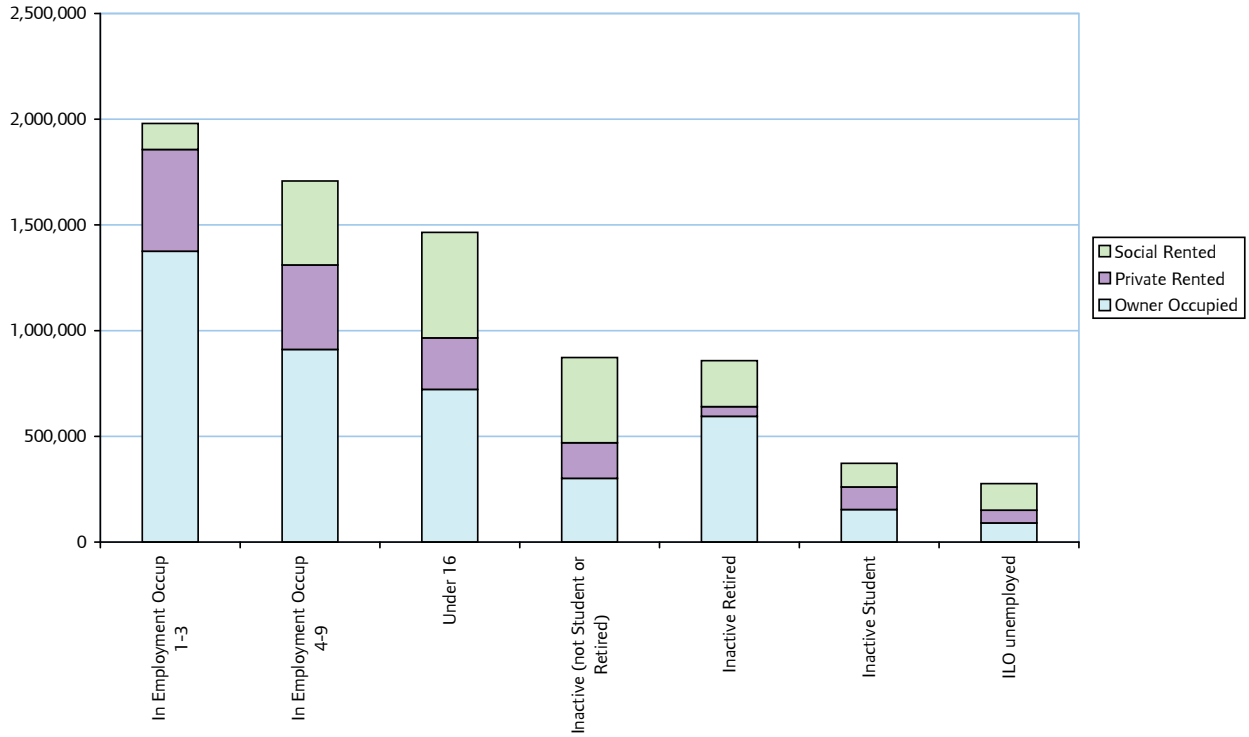
Almost half of all unemployed or economically inactive people in London live in socially rented accommodation.

Accomodation lived in by economic group: London, 2008



Source:ONS, APS 2008

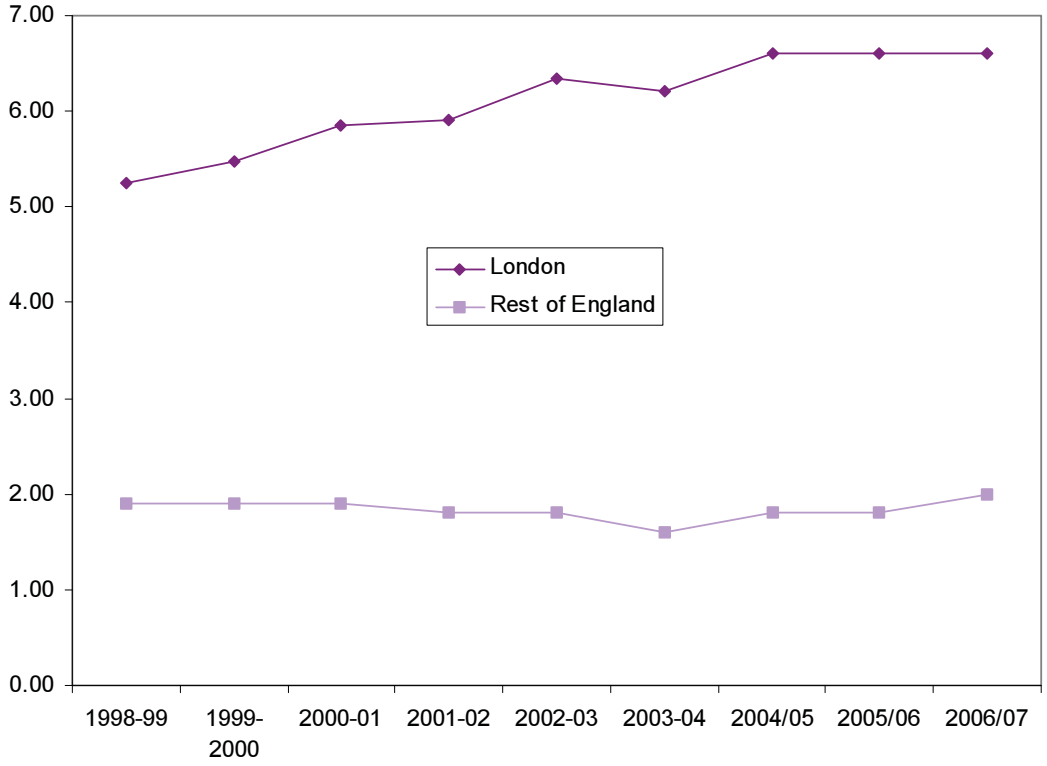
Accomodation lived in by economic group: London, 2008



Source:ONS, APS 2008

Another issue for housing in London is that of overcrowding, where the proportion of households suffering in London surpasses that of the UK.

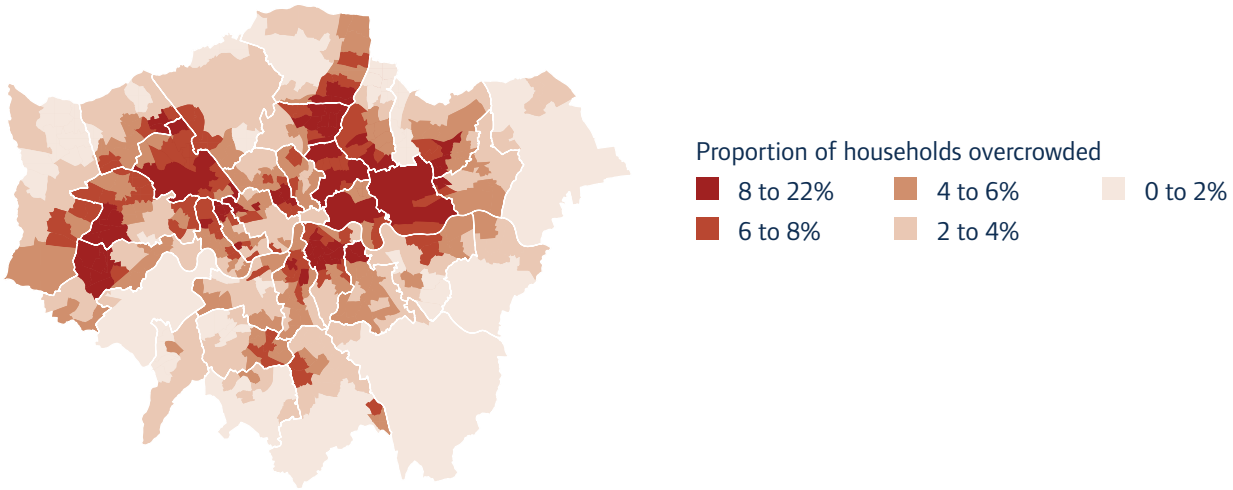
Percentage of households which are overcrowded, London and rest of England, 1998-99 to 2006-07



Source: Housing in England, Communities and Local Government

Within London, inner east London, Lambeth, Southwark, Ealing and Brent are particularly prone to overcrowding.

Overcrowding by ward, 2001



Source Census 2001

Worklessness

London has a particularly high level of worklessness amongst its working age residents compared to the rest of the UK. Looking at benefit claims, a large proportion of worklessness is due to long-term incapacity.

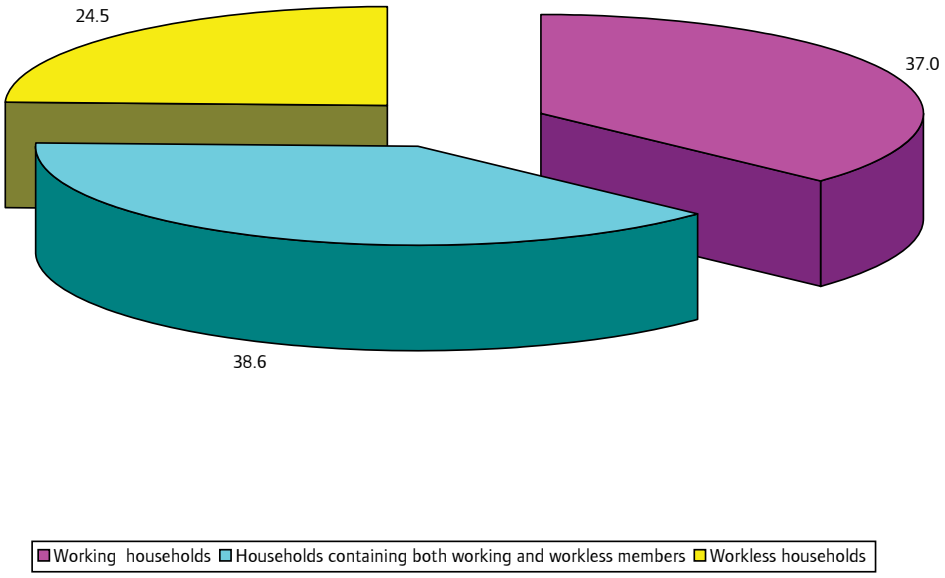
Benefit Claimants	Total	up to 6 months	6 months up to 1 year	1 year and up to 2 years	2 years and up to 5 years	5 years and over
total	789,900	204,210	84,120	78,710	125,070	297,780
job seeker	216,990	146,470	44,570	19,820	3,610	2,520
ESA and incapacity benefits	313,390	30,790	17,220	24,930	56,230	184,220
lone parent	139,350	13,700	11,630	18,260	36,090	59,670
carer	42,980	3,840	3,670	6,080	11,690	17,700
others on income related benefit	29,870	6,510	4,350	5,780	8,680	4,550
disabled	38,290	2,150	1,860	3,280	7,250	23,750
bereaved	9,030	750	820	570	1,530	5,360

Source: Nomis, August 2009

Child poverty

Nearly 25 per cent of children in Greater London, in April-June 2009, lived in workless households (where neither parent is in employment, or in single-parent households the single-parent was unemployed).

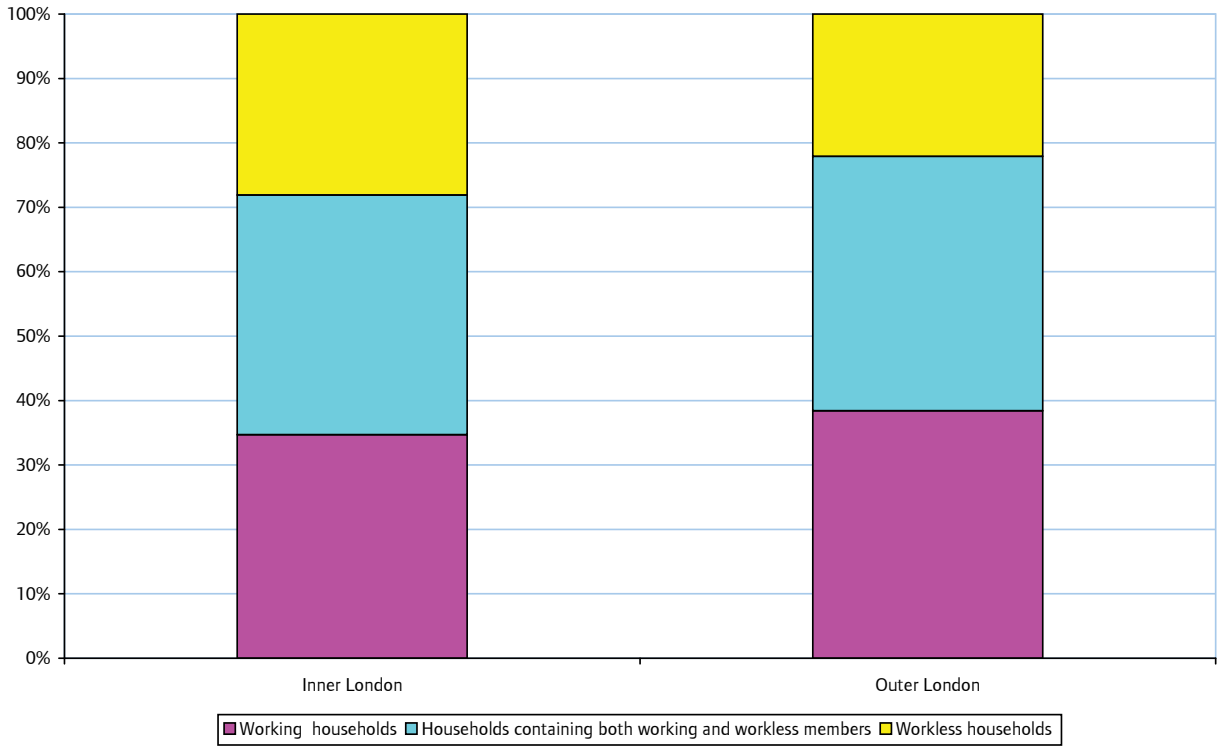
Children living in working-age households by combined economic status of households, Greter London, April-June 2009



Source: DWP

For Inner London this proportion is much higher.

Children living in working-age households by combined economic status of the household, April-June 2009



Source: DWP

Although the percentages of children in working age workless households has fallen for Inner London since 1997, these rates remain significantly higher than any other English region.

Percentage of children in workless working age households in London, 1997-2009

Source:LFS

Children living in working-age households by combined economic status of the households across the UK, April-June 2009

	Working households	Households containing both working and workless members	Workless households	Total
North East	48.5	30.6	20.9	100.0
North West	50.0	30.6	19.4	100.0
Yorkshire and the Humber	53.8	28.1	18.1	100.0
East Midlands	56.4	28.9	14.8	100.0
West Midlands	49.0	31.6	19.4	100.0
East of England	55.1	32.7	12.1	100.0
Greater London	37.0	38.6	24.5	100.0
Inner London	34.7	37.2	28.1	100.0
Outer London	38.4	39.5	22.1	100.0
South East	57.6	30.8	11.6	100.0
South West	58.9	27.4	13.7	100.0

Source: LFS

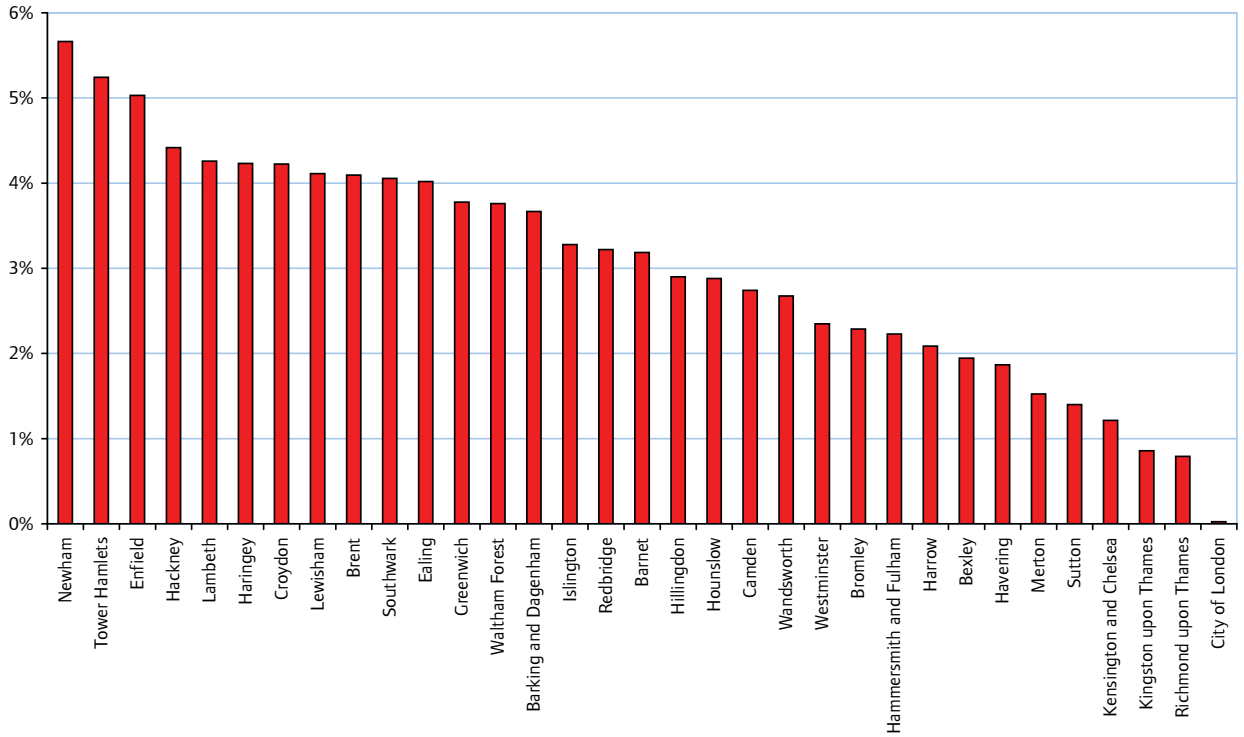
This trend is also evidenced by the percentage of children living in households on key benefits across England, where the average for Great Britain stood at 19.1 per cent in 2007, London was significantly greater than this.

Percentage of children living in families on key benefits by region, August 2007

Source: Department for Work and Pensions (5% sample)

There are some significant variations in child poverty across the London boroughs. Based on the number of children living in out-of-work households on benefits, a third of boroughs house 50% of the London total.

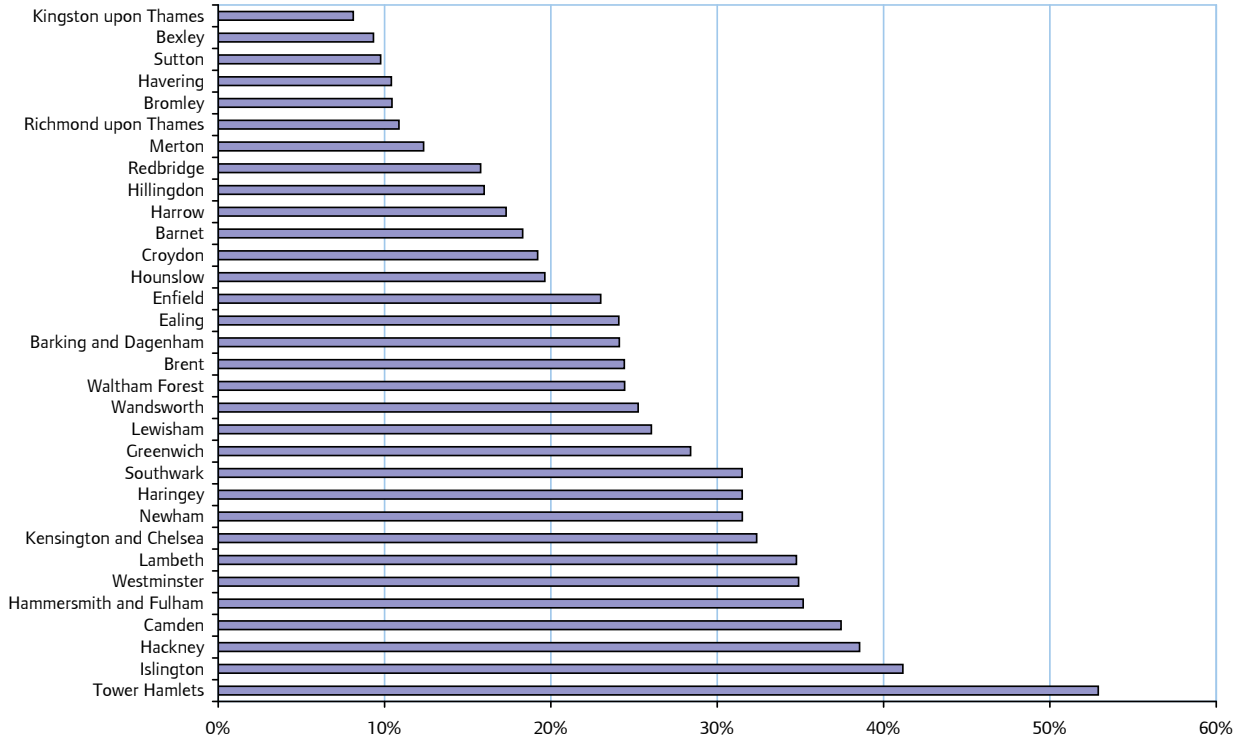
Local authority share of 0-15 year olds living in out-of-work benefit households at May 2008



Source: DWP

Looking at the percentage share of children eligible for free school meals we can again see the discrepancy in child poverty rates across London.

Percentage share of children eligible for free school meals, by borough 2008



Source: DCSF

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Chapter 1: Trade and London's economic specialisation

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5 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. The higher the index of specialisation above 1.00, the greater the degree of specialisation.

By contrast if the index of specialisation is less than 1, then this shows that the rest of GB has a greater share of its total jobs in the sector being examined than does London. The closer the index of specialisation gets to zero, the smaller London's role in the sector being considered is compared to the rest of GB.

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26 2008 figure

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Chapter 5: Risks and opportunities from climate change

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Chapter 7: Socio-economic issues

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Appendix 2: Further evidence

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4 This survey is based on a two-fold methodology:
- The real attractiveness of Europe for foreign investors, which is based on the Ernst & Young European Investment Monitor (which tracks FDI projects that have resulted in new facilities and/or the creation of new jobs), and
- The perceived attractiveness of Europe and its competitors by foreign investors, based on a survey of 809 international decision makers, between Feb & March 2009

5 To assess both the image and reality of cities, this survey is based on a two-fold methodology:
- The *perceived* attractiveness of global cities is gauged by interviews with 508 international decision makers during March and April 2008, and
- The *actual* attractiveness is based on the location of the world's 2,000 largest companies' headquarters (as ranked by Forbes).

6 In collaboration with the Partnership for New York City, PWC have composed a ranking of 20 cities from 51 variables, using publically available information (collected during Q2 and Q3 2008) and extensive research. Some of the finance data used in the research relates to market conditions before the credit crisis.

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- Site capacity – reflecting the expected availability of business sites for jobs to locate in across London; and,
- Transport accessibility – reflecting the changes in accessibility across London expected to flow from various improvements in London's transport infrastructure.

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Hindi

यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Vietnamese

Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন্ নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Urdu

اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاھتے ھیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ।

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

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