LONDON 2036:
AN AGENDA FOR JOBS AND GROWTH

LONDON FIRST


TO STAY OPEN FOR BUSINESS LONDON NEEDS TO:
Stay open for commerce and trade
Ensure firms can recruit international talent
Protect and grow its strengths in financial and professional services
Boost international travel and tourism to London


TO SUPPORT THE KNOWLEDGE ECONOMY WE NEED TO:
Strengthen digital connectivity
Improve funding and regulation for innovative SMEs


TO ADDRESS THESE WEAKNESSES, LONDON NEEDS TO
CV
Invest in transport and infrastructure
Accelerate housing delivery
Develop Londoners' employability


LONDON SHOULD WORK WITH THE OTHER CITY-REGIONS TO:
Support London's significant net tax transfer to the wider UK
Form an urban agenda to overcome common barriers to growth, such as digital connectivity and transport
Build complementary supply chains across the UK
Support UK based firms to identify opportunities to innovate and grow, and develop new export markets

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London First

We are a non-profit organisation with the mission to make London the best city in the world to do business. We work with business leaders, national and local government to support London's global competitiveness within the UK.

FOREWORD

Foreword

In 2015 London First and the London Enterprise Panel, the business-led advisory body to the Mayor of London, published **London 2036: an agenda for jobs and growth**[1].

The context was London's rising population which we described as a testimony to London's success as the city where global business can find talent and where global talent can find opportunity. And we were clear that this success had been driven by the ingenuity of Londoners, past and present, rather than by planning or public policy, and that this must remain the case. Yet as cities grow the infrastructure, architecture and systems that enable them to function smoothly and remain cohesive become ever more important.

At London First – the independent business organisation with the mission to make London the best city in the world in which to do business – we had been looking at the approach other global cities take to managing and supporting growth. A common theme is a city plan to identify the strategic interventions that deliver the best returns. Accordingly, we were delighted to work with the London Enterprise Panel to create such a business-led agenda for London. London has been well served by previous analysts. Our challenge was not to identify new opportunities or challenges but rather to distil the issues facing a city economy the size of a country's down to a small number of key priorities for action.

The analysis and resulting areas for action were designed to be long-term and to transcend the electoral cycle; however the vote by the British people in June 2016 to leave the European Union led us to decide to refresh the work. In particular, we have looked at the opportunities and challenges for London's economy as we move to leave the EU, and the ways in which the linkages between London and the wider the UK economy might be strengthened. In undertaking this work we were again supported by McKinsey & Company and are again extremely grateful for that support.

There is no single agency we can call upon to deliver against the priorities we have identified: this is a call to action for London as a whole. Some issues should be business led, others require coalitions to make a case to central government, while others are in the hands of London government. However, we believe that the Mayor of London, through his forthcoming economic development strategy, is well placed to convene, coordinate and drive this agenda by supporting or building coalitions across government, business and wider society.

We look forward to working with the Mayor, with our members and with institutions across the UK to drive delivery across the priorities set out here - not just for benefit of London business or Londoners, but to drive economic prosperity for the country as a whole in an ever more uncertain and competitive world.

John Dickie
Director of Strategy and Policy
London First

[1] London First, **London 2036: an agenda for jobs and growth, 2015**. Available at http://londonfirst.co.uk/wp-content/uploads/2015/01/London-First-Report_FINAL_e-version.pdf

EXECUTIVE SUMMARY

Executive summary

An agenda for London's economy

This report on behalf of London's business community aims to identify the agenda on which London's Mayor, business and wider stakeholders should focus in order to maximise job creation and economic growth over the next 20 years. The report refreshes a document first prepared in 2014 and takes account of the considerable economic and political changes since then, most notably the UK's vote to leave the European Union.

The report has been produced by London First after consultation with businesses and other interested groups across London, with three considerations in mind.

First, its scope is tightly **focused on jobs and economic growth.** This is not an overall strategy for London – that is covered by the current Mayor's vision, A City for All Londoners, and existing statutory strategies.

Second, it describes an **agenda for London as a whole** rather than just for London government. This agenda will be delivered only with support from both public and private sector stakeholders from across London and the rest of the UK. This said, the Mayor is well placed to coordinate, convene and direct other London actors.

Third, it seeks to identify **the priorities for action,** drawing together common themes from existing work into an up-to-date and integrated agenda.

The work has been organised around four strands of activity: a review of the changing global context in which London is operating; extensive data analysis looking at London's strengths and weaknesses; a review of London's relationship with the broader UK economy; and wide consultation with hundreds of London's leaders in 2014, 2015 and 2016. We hope this agenda will command broad support and serve London well for the long term, across economic and political cycles.

The goal

London's success as a global business hub cannot be taken for granted following the UK's vote to leave the EU in June 2016. The city is at the beginning of a period of significant uncertainty, which has the potential to deter investment and reduce growth. London's economic success matters: income growth not only improves living standards, it also funds measures to improve opportunity, public services and infrastructure not just in London but across the whole of the UK. Jobs growth will be critical to maintaining employment, given the anticipated relocation and automation of jobs across the income spectrum.

This agenda is designed to deliver a London economy with:

- **the fastest income growth among cities of its scale and type**, with growth in Gross Value Added (GVA) per head that is faster over the long term than that of New York, Paris or Tokyo, and that delivers more benefit to the wider UK;

- **job creation and growth that translates into opportunity**, with employment rates higher than equivalent rates in similar international cities and growing economic links with the rest of the UK driving wider prosperity; and

- **diversity and resilience**, with strong performance across a wider range of economic sectors in order to improve the city's resilience against crises.

To meet this goal we have identified three core themes for London's economy: to secure its existing leadership position as the global business and financial hub; to fuel more diverse growth through creativity and technology; and, to address the challenges of inclusion, infrastructure and governance. The proposed priority areas for action for each theme are summarised below.

A. Staying open for business: The Global Hub

1. **Stay open for commerce and trade:** forge new trading relationships with international partners and remain open to investment from across the world.

2. **Stay open to international talent:** remain open to, and an attractive location for, international talent, complementing efforts to improve Londoners' employability.

3. **Protect and grow London's financial and professional services:** build on London's status as a global hub for finance and professional services.

4. **Boost international travel and tourism.** Expand air capacity and exploit London's reputation as a tourist destination, increasing visit frequency and helping the city to serve as a gateway to the whole country.

B. Fuelling innovation and growth: The Creative Engine

5. **Strengthen digital connectivity:** appoint a new Chief Digital Officer and team to drive improvement in London's digital infrastructure, creating a new strategy to deliver ubiquitous, high-speed, reliable and affordable digital connectivity, as well as to identify and implement smart city initiatives.

6. **Improve funding and regulation for innovative small-medium sized enterprises (SMEs):** expand access to scale-up funding opportunities for firms with high growth prospects, filling the gap between start-up funding and flotation, underpinned by a forward-looking regulatory environment.

C. Addressing weaknesses: The City that Works

7. **Invest in transport infrastructure and services to tackle long-term impediments to growth:** enable improved job creation and productivity through investment in the transport network, establishing financing mechanisms that will enable London to invest for the long term.

8. **Accelerate housing delivery:** change governance and improve incentives, coordination, capabilities and funding across the Greater London Authority (GLA) and the boroughs to substantially increase the number of new homes built for Londoners.

9. **Develop Londoners' employability:** dramatically scale up skills efforts to ensure that everyone who grows up in London can access employment in a changing and increasingly competitive labour market.

And across all of these themes

10. **Support UK-wide growth:** ensure a growing London works ever more effectively, in cooperation with other city-regions, to drive growth across the country.

What this agenda could deliver

Given the specific focus of this plan, the ultimate measure of its success will be jobs and GVA growth. By 2036, London's economy should reflect progress against each of the themes we have identified. If this is achieved in a way that means London grows 1% faster annually than current projections, this is worth 1.4 million jobs and £146 billion of extra income.

What now?

Other cities face similar challenges. Some have similar strengths. Many have similar ambitions. However, London uniquely combines a realistic aspiration to be the leading global hub for business at the same time as being the leading capital of creativity and technology. It has to pursue these aspirations while managing the implications of the vote to leave the EU, and within the constraints of a complex city governance model.

Achieving the goals – the fastest income growth among our peers, higher employment rates, and a more diverse and resilient economy – will require focused implementation. Each of the priority areas identified in this agenda needs to be translated into a programme of action that brings together a broad set of stakeholders: local and national, private and public. No single body has all the levers London requires to drive success and different priorities can have different leaders. However the Mayor of London, through his economic development strategy, is well placed to coordinate and drive this agenda as a whole by building coalitions across government, business and wider society.

Successful delivery would mean more employment opportunities and a greater variety of work opportunities for Londoners; easier and faster growth for business owners; more affordable housing and better transportation; and London playing its part in delivering a stronger economy for the UK as a whole.

01.

OUR PURPOSE AND APPROACH

Purpose of this report

This business-led report aims to identify where London's Mayor and wider stakeholders should focus to maximise job creation and economic growth in London between now and 2036. It comprises an economic agenda that should inform the GLA's own thinking and the industrial strategy being developed by the UK government. It gives careful consideration to unlocking the potential of different economic sectors across London. It has been produced by London First, with analytical support provided by McKinsey & Company.

Three considerations have framed our approach to this report.

First, our scope is tightly **focused on jobs and economic growth**. This is not a new or comprehensive strategy for London. We do not consider important issues such as health, leisure or the environment except in so far as they directly influence the economy, for example in the way London's position as a cultural centre drives its success in the creative industries. Our conclusions are consistent with the current Mayor's overall vision for London[2], but our work has a much narrower focus and establishes a more detailed set of delivery priorities to drive jobs and economic growth.

Second, this report describes an **agenda for London as a whole** rather than just for the GLA or broader London government. Many of the most important issues driving London's economy are not in the control of London's government, and this agenda will only be delivered with support from all stakeholders: private, public, local, regional and national. We recognise that most of London's historic success has been unplanned and future economic opportunities will similarly flow from market forces. Our goal is to identify the places where something more is required, recognising the complex inter-relationships between actions by both the private and public sectors across every part of London's economy.

Third, this report seeks to identify **the priorities for action** rather than to define all of the potential areas that could support economic success. This agenda focuses on areas where new action is needed, either because the issue has not received attention or because there is a gap between the issue's importance and the level or effectiveness of existing interventions. We seek to draw together the common themes from existing work into an up-to-date and integrated agenda for London. Many of the challenges we describe are not new and have been examined extensively in the past, however there is not yet sufficient action being taken in response to them.

This agenda and suggested actions will require involvement from a broad set of stakeholders and an investment of time and energy from groups across London. The Mayor and GLA will need to provide leadership and coordination.

[2] Mayor of London, **A City for All Londoners,** 2016

Consultation with stakeholders

The first version of this report, published in January 2015, was informed by extensive consultation with a wide range of stakeholders from across London. Those consulted then included business leaders of small, medium and large-sized companies, educational leaders, key figures in the governments of both the UK and London, as well as third-sector representatives, economists and urban experts. Consultation took place in a range of formats, notably roundtables, individual interviews and sector-specific groups, with around 400 people engaged in the report's development and many hundreds more involved since the launch.

This consultation process was designed to ensure the 2015 report benefited not just from the latest data on London but also from qualitative input from experts, not least from the community of leaders who will ultimately need to deliver against the priorities identified.

For this updated agenda, we have convened an advisory group of business leaders who have acted as an invaluable sounding board. We have also conducted a series of bilateral meetings and other stakeholder events.

The scale of the prize

Economic success for London matters. Income growth not only improves living standards for London's workforce, it also fuels our ability to invest in creating opportunity, improving public services and investing in infrastructure – not just in London but across the whole of the UK. Jobs growth will be critical to maintaining employment, given the relocation and automation of jobs across the income spectrum.

London has the potential to step up its economic performance, and should aspire to be a city economy with:

- **the fastest income growth among cities of its scale and type**, with growth in GVA per head that is faster over the long term than that of New York, Paris or Tokyo, and that delivers more benefit to the wider UK;

- **job creation and growth that translates into opportunity**, with employment rates higher than equivalent rates in similar international cities and growing economic links with the rest of the UK driving wider prosperity; and

- **diversity and resilience**, with strong performance across a wider range of economic sectors in order to improve the city's resilience against crises.

As we describe in Chapter 2, London does not meet these aspirations today.

Small differences in performance translate into very large economic impacts over time. By 2036 the difference between growing jobs at 1% a year (GLA projections) and growing jobs at 2% a year would be worth 1.4 million jobs. Equally, a shift from 2.9% annual growth in GVA to 3.9% would generate an additional £146 billion[3].

Predicting future economic performance is of course fraught with challenge – but these numbers give a sense of the size of the prize for London, and the national importance of getting it right.

[3] Employment forecast from GLA, GVA forecast from Oxford Economics, 1% uplift starting in 2017

Approach and methodology

This work looks at London's performance between now and 2036. This timescale is long enough to drive change and see results across a city of London's complexity but short enough to keep this work firmly grounded in the existing realities of the city.

This agenda has been developed to be consistent with critical GLA assumptions and projections. We have sought to develop priorities to inform the Mayor's statutory strategies for the economy, transport and housing. However, this document describes a business-led agenda for economic growth; it is not a GLA strategy. We hope it will provide evidence and an agenda for future strategy revisions.

The long-term priorities for London's economy identified in this report are founded in several parallel strands of analysis, reflected in the structure of this report.

In Chapter 2 we describe London's economic starting point. We began our work by understanding the long-term trajectory that led to London's economic position today, and by looking at its performance in comparison to other cities of its scale and type.

In Chapter 3 we describe London's changing global context. We sought to put the implications of the UK's vote to leave the EU in the context of broader global economic trends and establish the overall threats and opportunities London faces. Importantly, we consider its position relative to other peer cities.

In Chapters 4 and 5 we describe London's economic strengths and weaknesses. This material is based on an extensive fact base we created, drawing together existing research and new analysis to understand London's strengths and weaknesses across the most important factors that drive economic growth. We have sought to understand what strengths have driven London's past economic success (including whether the city can rely on them in the future) and what weaknesses challenge the city's economic success today (including whether these challenges are likely to worsen or improve).

In Chapter 6 we describe London's context within the UK. We analysed the most important inter-relationships between London and other parts of the UK, in order to understand how they affect the current economic performance of both, as well as how this could change in the future.

In Chapters 7 and 8 we articulate economic ambitions for London and the priorities for action that will be required to deliver them. The process of moving from the facts to the priorities is of course one that involves judgement, and we have sought to explain the judgements we have made. The priorities range from those which could straightforwardly be described as corrections for market failures (e.g., in the provision of infrastructure), through broader advocacy relating to existing areas of public policy (e.g., immigration), to priorities that address the governance issues that need to be resolved to support London's development.

In Chapter 9 we explore next steps and how to move towards implementation.

02.

LONDON'S STARTING POINT

London's long-term success

London has experienced a long journey of economic success. In 1500 Beijing had a population 10 times larger than London's, but by 1900 London had firmly established itself as the largest and most-successful city in the world. At that point, London's population was 50% larger than New York, its nearest rival [figure 1]. Today, others have grown to join London in the first rank of global cities and, while many are more populous, London remains one of the top five most successful cities in the world by total GVA (with its exact rank depending on precisely how city boundaries are defined).

London's long-term success has been driven by powerful fundamentals that have endured across centuries, and that have proven resilient to new circumstances. For example:

• London, as part of the UK, has seen long-term political stability and the rule of law;

• London has occupied a favourable geographic position, with a globally convenient time-zone, and widely used language;

• London has held a position at the heart of global trade, historically through its international links across the British Empire and position within the EU;

• London has benefited from, and contributed to, the long-term success of the UK economy; and

• even as it has deindustrialised, London has successfully taken advantage of new economic circumstances to become a centre of the modern service economy, capitalising on its agglomeration of talented people.

Figure 1

City growth 1500-2000

World's largest cities, 1500-2000, millions inhabitants

	1500		1600		1800		1900		2000	
1	Beijing	0.7	Beijing	0.7	Beijing	1.1	London	6.5	Tokyo	34.5
2	Istanbul	0.7	Istanbul	0.6	London	1.1	New York	4.2	Osaka	18.7
3	Vijayanagar (India)	0.5	Agra	0.5	Guangzhou	0.8	Paris	3.3	Mexico City	18.5
4	Cairo	0.4	Osaka	0.4	Tokyo	0.7	Berlin	2.7	New York	17.8
5	Tabriz (Iran)	0.3	Kyoto	0.3	Istanbul	0.6	Chicago	1.7	São Paulo	17.0
	London	0.06	London	0.2					London	8.6

Note: 2000 data sourced from the UN Population Division, by metropolitan area

Source: Tertius Chandler, (1987), Four Thousands Years of Urban Growth; United Nations, Department of Economic and Social Affairs, Population Division (2014), "World Urbanization Prospects: The 2014 Revision"

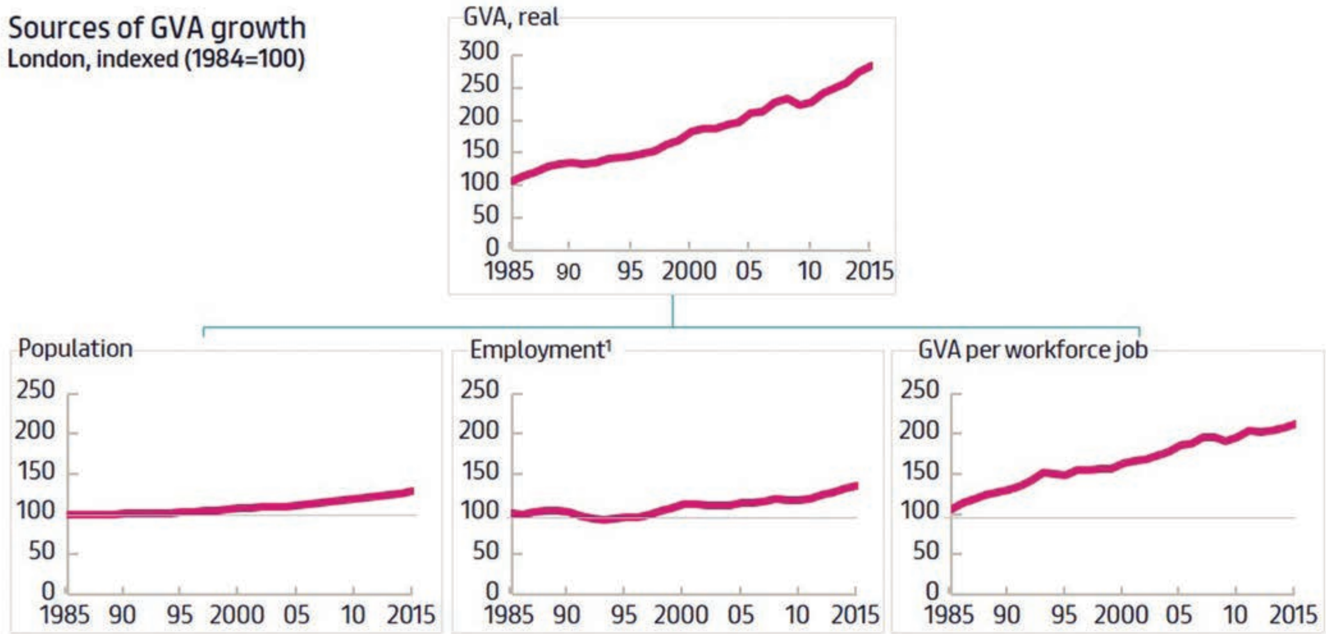
London's recent performance

Looking at the more recent past, figure 2 shows that since 1984 London has more than doubled its total output in real terms, primarily through increases in real GVA per worker, reflecting a shift to higher-skilled, higher-productivity employment. Approximately a third of the income gains are from there being more people in work and two thirds from a higher average productivity (i.e., in incomes) of those working.

The London economy has also successfully grown employment, with Q1 2016 recording the highest levels of employment since the current data began in 1992. Further, London's employment rate is catching up with the historically higher UK average.

Overall, London's population has risen rapidly in recent decades. London's population had reached 8.6 million in 1939 but then fell to a post-war low of 6.6 million by the 1981 census. It then started to grow, and to grow rapidly – and is estimated to have surpassed the pre-war peak in early 2015. Net internal migration has been negative, with more of London's residents moving to other parts of the UK than vice versa. However, this has been more than offset by net positive international migration. Given that most immigrants are young adults, this has the effect of increasing the city's birth rate, driving further growth. The city is on course to reach a population of 10 million over the next decade[4], at which point it will meet the threshold to become a global 'megacity' alongside Tokyo, New York, Beijing and others.

Figure 2



1 Employment estimates include the self-employed and are workplace based, thus include commuters

SOURCE: ONS; GLA Intelligence; team analysis

[4] Office for National Statistics (ONS) Population Projections 2016

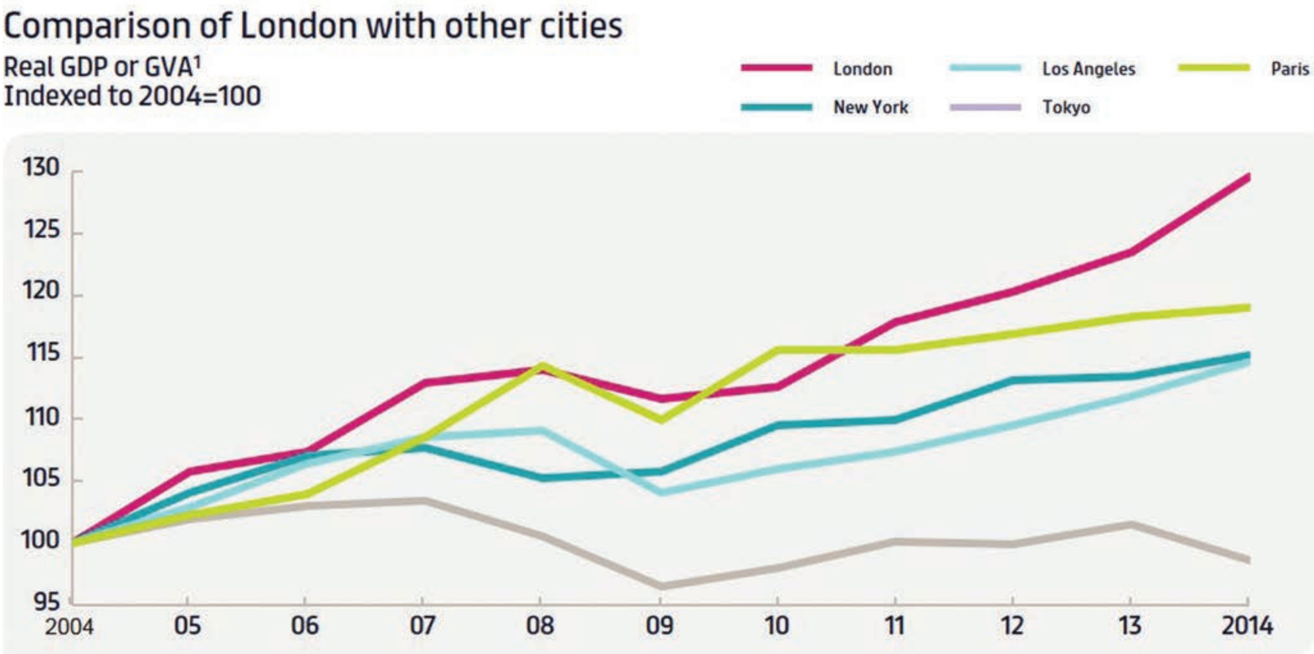
London compared with other cities

London's performance is also strong when compared with other cities in the UK and Europe, but there are some caveats.

In terms of overall economic growth, figure 3 shows London's lead over its peers. However, it is worth noting that London's GVA per employee lags significantly behind other top-performing cities. This largely reflects a weaker improvement in productivity per worker as the UK continues to underinvest in the public and private capital which would make its workers more efficient[5,6]. London's productivity continues to be significantly higher than other parts of the UK, chiefly due to agglomeration benefits and because of the more highly skilled indigenous and migrant population[7].

Further, London's performance on unemployment looks less impressive when compared to other megacities. Comparing performance as at 2015, figure 4 indicates that London's drop in unemployment rate had also been achieved by other major cities including New York, Los Angeles and Tokyo. Were London to succeed in further reducing unemployment this would likely reduce average productivity per worker (either because of labour/capital substitution or because the marginal productivity of additional labourers is lower).

Figure 3



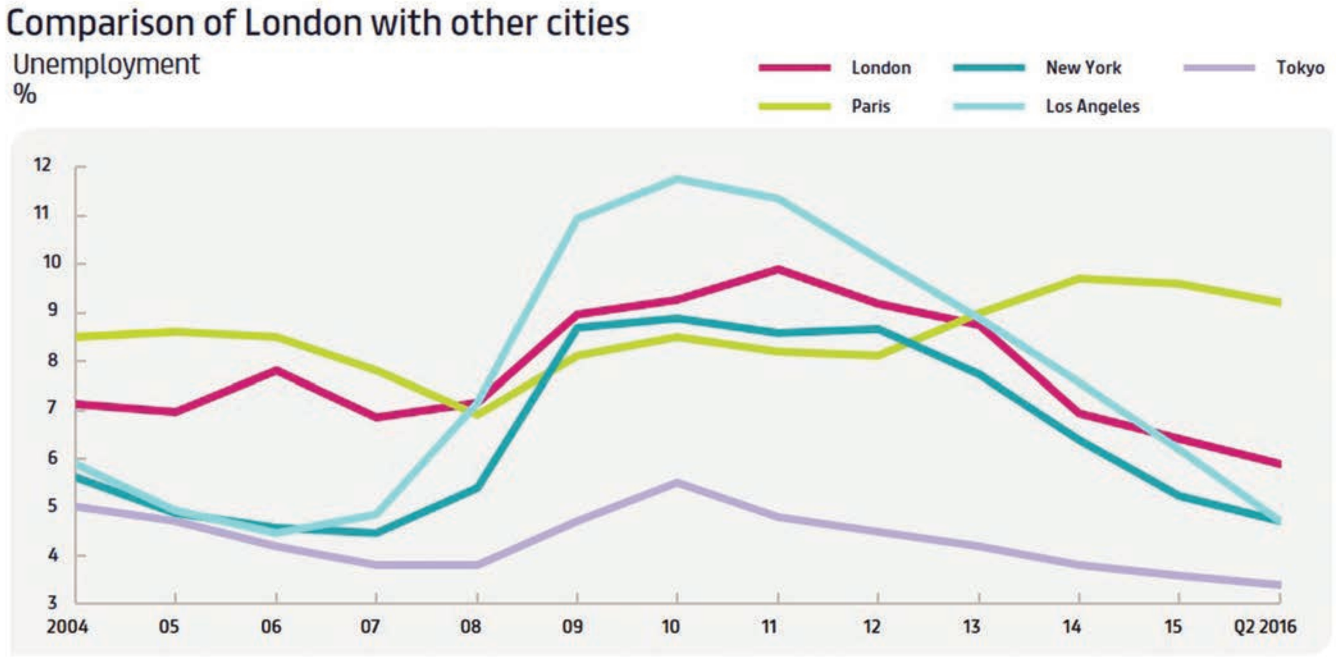
1 GVA for London and Paris only; 2014 GDP data for Tokyo is provisional
Note: Paris defined as the Parisian Region/Île-de-France; Tokyo defined at the 1 precinct level (population ~14m)

Source: ONS; Eurostat; BEA; Moody's; Japan Bureau of General Affairs; World Bank national deflators

[5] ONS, **International comparisons of productivity final estimates (2014 data)**, 2016
[6] HM Treasury, **Fixing the foundations: Creating a more prosperous nation**, 2015
[7] For an extensive discussion of the productivity puzzle, see OECD, **Economic Surveys: United Kingdom**, 2015; CBI, **A better off Britain**, 2014; CBI, **Lifting the Trophy**, 2016; and GLA Economics, **London in Comparison with other Global Cities**, 2016

02. LONDON'S STARTING POINT

Figure 4



Note: Paris defined as the Parisian Region/Île-de-France; Tokyo defined at the 1 precinct level (population ~14m); Paris data for Q2 2016 is an estimate
Source: ONS; Eurostat LFS; LAUS Bureau of Labor Statistics; Japan 's Ministry of Internal Affairs and Communication

While London has not out-performed all comparator cities on every metric this still represents a strong economic starting point, reflecting long-term success.

03.

A CHANGING CONTEXT FOR LONDON

A changing context for London

To understand the economic threats and opportunities faced by London, we have assessed the changing context and attempted to describe the kind of world economy in which London is likely to be operating by 2036. This narrative is heavily influenced by Britain's vote to leave the EU, but it is also affected by the medium and longer-term outlook for the world economy and its cities. Finally, we turn to the changing set of peer cities, and the implications for London's future success.

Particular challenges for London

London's status as the global hub cannot be taken for granted, following the UK's vote to leave the EU in June 2016. London is at the beginning of a period of significant uncertainty, during which businesses and households are likely to find it more difficult to plan for the longer term. They may postpone investment and expenditure, which in turn will slow the growth in employment and output. Government has limited scope to reduce this uncertainty, but it can take steps to reduce uncertainty in other areas. Getting to grips with long-standing challenges, such as new housing supply, inadequate skills training and underinvestment in transport, is perhaps the best way the government can support firms and consumers and support their commitment to London.

Unless the UK can secure access with limited tariffs or barriers to export markets in the EU and globally, there will be consequences for business activity in London. Reduced access to the EU Single Market is likely to affect London's finance and professional services sector in particular. If the UK leaves the Customs Union, businesses of all sizes face new costs in reorganising supply chains and managing movement across customs frontiers. Weaker sterling may increase the competitiveness of some sectors, but at the same time it will raise costs for major importers and reduce purchasing power for consumers.

Although it is hard to predict the shape of the eventual settlement on free movement of people, restrictions on migration are likely to hit international businesses and innovative creative and digital firms. International students and researchers, who sustain London's world-beating universities, face a more uncertain immigration and funding regime. At the other end of the market, the withdrawal of lower-skilled labour may exacerbate vacancy rates in lower-paid sectors such as social care and construction, given the relatively low overall rates of unemployment.

London's top talent, global headquarters and foreign direct investment are being courted by global peer cities such as San Francisco, Hong Kong and Dubai. European cities such as Frankfurt, Paris and Madrid are also actively seeking to attract businesses from London.

These challenges are not insurmountable. In this report, we discuss the ways in which London can overcome them and develop the resilience to capitalise on new opportunities.

Global risks

The outlook for the global economy is uncertain. Across the world, the trend towards increased flows of trade, money and people is looking less certain. The era of 'easy growth' fuelled by credit and demographics is probably over, with global economic growth set to slow by almost half, from 3.6% to 2.1%, in the next 50 years[8]. Recently, global trade growth has slowed, alongside a slowdown in leading emerging market economies (such as Brazil, Russia, China and South Africa) and subdued demand across the world. In developed economies, productivity growth has been decelerating for decades[9].

Alongside widespread opposition to free trade deals such as the Trans-Pacific Partnership and Transatlantic Trade and Investment Partnership, the World Trade Organization estimates that protectionist trade measures among the G20 are multiplying at their fastest rate since 2008[10]. National governments are experimenting with alternative economic strategies in response to these challenges. Even where there is political support, e.g., the Canada/EU trade deal, these agreements often take five to 10 years of negotiations.

Strained by growing inequality, the historic global economic consensus is being tested, particularly around migration and security. Global flows of people are facing new restrictions, as developed economies seek to control the scale of immigration in response to the concerns of those left behind by globalisation. In addition, forced migration from refugee crises across the world has altered these patterns substantially – the United Nations High Commission for Refugees (UNHCR) estimates that there are 65.3 million forcibly displaced people, more than at any other time in recent history, including World War II[11]. Further, the recent terrorist attacks in Paris, Brussels and Istanbul – following hard on the 10-year commemoration of the 7 July bombings in London – mean that security risks remain front of mind.

[8] McKinsey Global Institute, **Turbulence Ahead**, 2016
[9] OECD, **The Productivity-Inclusiveness Nexus**, 2015
[10] World Trade Organization, **Report on G20 trade measures**, June 2016
[11] UNHCR, **Global Trends**, 2015

A positive longer-term outlook

And yet, despite the economic risks, the longer-term outlook for global cities remains positive. Immediate challenges notwithstanding, emerging markets are set to catch up with developed ones. The world's economic centre of gravity will therefore continue to shift eastward, as pictured in figure 5.

Below, we describe some key trends we expect to see over the medium to long term.

First, we anticipate that **global cities will continue to grow in size and economic significance**, particularly those such as London that are built around a concentration of very highly skilled people. Looking at cities around the world, there is no evidence of an iron law that diseconomies of scale must inevitably occur beyond a certain city size, providing the city is well managed and supported by the necessary infrastructure[12]. Economic modelling by the McKinsey Global Institute shows that the bulk of growth will occur in small and medium-sized cities in the developing world such as Tianjin, which is expected by 2025 to have a GDP higher than that of Sweden[13].

Second, **the world will see the continuing rise of disruptive innovation:** for example, the further reach of the mobile internet, the cloud and the internet of things; and the growth of advanced

Figure 5

Future city landscape

2025 city rankings

Developing regions
Developed regions[1]

Rank	GDP[2]	Total population	Children[3]	Total households	Households with annual income over $20,000[4]
1	Tokyo	Tokyo	*Cairo*	Tokyo	Tokyo
2	New York	*Shanghai*	*Kinshasa*	*Shanghai*	*Shanghai*
3	London	*Beijing*	*Karachi*	*Beijing*	*Beijing*
4	Los Angeles	*Mexico City*	*Dhaka*	Osaka	Osaka
5	*Shanghai*	*Sao Paulo*	*Lagos*	*Chongqing*	New York
6	*Beijing*	*Chongqing*	*Mumbai*	*Sao Paulo*	London
7	Osaka	*Mumbai*	*Delhi*	New York	Rhein-Ruhr
8	Houston	*Dhaka*	*Mexico City*	London	*Mumbai*
9	Chicago	*Delhi*	Tokyo	*Mexico City*	*Cairo*
10	Rhein-Ruhr	*Cairo*	*Kolkata*	*Tianjin*	*Sao Paulo*
11	Paris	New York	*Manila*	Rhein-Ruhr	*Mexico City*
12	Tianjin	*Karachi*	*Sao Paulo*	*Mumbai*	*Moscow*
13	Dallas	Osaka	New York	*Guangzhou*	*Chongqing*
14	Washington, D.C.	*Kolkata*	*Lahore*	*Cairo*	*Delhi*
15	*Guangzhou*	*Lagos*	*Buenos Aires*	*Lagos*	*Tianjin*
16	*Shenzhen*	London	London	*Shenzhen*	Paris
17	*Chongqing*	*Tianjin*	*Jakarta*	*Wuhan*	Los Angeles
18	Nagoya	*Buenos Aires*	*Baghdad*	*Moscow*	*Guangzhou*
19	Boston	*Manila*	Los Angeles	*Delhi*	*Shenzhen*
20	*Mexico City*[5]	*Guangzhou*	*Istanbul*	Paris	Seoul
21	*Singapore*	*Kinshasa*	*Kano*	*Dhaka*	*Kolkata*
22	*Sao Paulo*	Los Angeles	*Dares Salaam*	Los Angeles	*Istanbul*
23	San Francisco	*Shenzhen*	*Bangalore*	*Buenos Aires*	Nagoya
24	Seoul	*Istanbul*	Osaka	*Rio de Janeiro*	*Dhaka*
25	Atlanta	*Rio de Janeiro*	*Lima*	*Kolkata*	*Lagos*

1 Developed regions comprise the US, Canada, Western Europe, Australasia, Japan and South Korea
2 GDP in predicted real exchange rate
3 Population below age 15
4 Households with annual incomes greater than $20,000 in purchasing power parity terms
5 Mexico City Metropolitan Region

[12] See discussion in McKinsey Global Institute, **Urban world: Cities and the rise of the consuming class**, June 2012
[13] McKinsey Global Institute, **No ordinary disruption**, 2015

robotics, hydraulic fracturing, autonomous vehicles and 3D printing. Patterns of work will change dramatically too, with the rise of flexible work enabled by 'gig economy' players such as TaskRabbit and Deliveroo. Economic growth driven by innovation and technology is here to stay, and cities which are well equipped to adjust to new ways of working will prosper more than others[14]. Cities will also have to contend with the disruption caused by such innovation (for instance, increased uptake of Uber affecting both demand for overall road space and other taxi services specifically), and design appropriate policy responses.

Third, we expect that, even if re-shoring brings some manufacturing employment back to advanced economies as a whole, **large-scale manufacturing will not return to high-cost cities such as London**. Changing technology will drive niche and high-value manufacturing towards cities, for example in close-to-market prototyping through 3D printing. However, these pockets are unlikely to generate significant employment, particularly since the economic reasons to locate outside cities for lower costs will become more compelling if employment grows.

Fourth, we believe the **returns to highly skilled work will increase**. More and more jobs will face potential substitution by technology. Increases in computational ability, machine learning and advanced user interfaces are increasing the range of technology. Industries such as finance and life sciences are now leveraging digital technology in R&D and commercial functions. As a consequence, returns to the very highest skilled workers (those who are able to manage, lead and organise this technology) will continue to increase. While this promotes growth, it removes middle-skilled jobs, which are likely to constitute a shrinking portion of the workforce[15] over the coming years.

There are a number of other forces at work that will have major impacts on the global economy in the coming 20 years: for example, an ageing population in both the OECD and China; rising geostrategic competition between nations; and a drive to extend environmental controls.

[14] McKinsey Global Institute, **Disruptive technologies: Advances that will transform life, business, and the global economy**, May 2013
[15] McKinsey Global Institute, **The world at work: Jobs, pay, and skills for 3.5 billion people**, June 2012

A changing set of peers

Reflecting this changing global economy, London can expect a changing set of peer and competitor cities.

Today the largest city economies in the world (always depending slightly on how city boundaries are defined) are London, Los Angeles, New York, Paris and Tokyo. Among this group, which are comparable with London's overall economic scale and levels of income per head, the only city that looks like a true peer to London is New York. New York uniquely shares London's internationalism, strength as a business and financial centre, and economic diversity.

However, in terms of pure economic scale, this group of cities will not stand out for much longer. By 2025, as figure 5 shows, Shanghai and Beijing are likely to have more middle-class households[16]. By 2036, cities such as Tianjin and Sao Paulo are expected to have comparable overall GDP.

This growth in other cities is not necessarily a threat to London. Other cities represent opportunities for London (as markets, sources of talent and sources of investment) as much as they offer competition. In terms of overall peers to London, it is also hard to see another city emerging with the broad range of characteristics shared by London and New York.

Figure 6

City participation in global flows

Hub in at least 4 major flows

Rank[1]	Flow: Goods Proxy: Ports	Goods, services, people Airports	Financial Financial centres	People Migration[2]	Data and communication Online traffic
1	Shanghai	Chicago	London	Dubai	Frankfurt
2	Singapore	Atlanta	New York	Brussels	London
3	Shenzhen	Los Angeles	Singapore	Toronto	Amsterdam
4	Hong Kong	Dallas/Fort Worth	Hong Kong	Auckland	Paris
5	Ningbo	Beijing	Tokyo	Sydney	New York
6	Busan	Denver	San Francisco	Los Angeles	Los Angeles
7	Qingdao	Charlotte	Boston	Singapore	Stockholm
8	Guangzhou	Las Vegas	Chicago	London	San Francisco
9	Dubai	Houston	Zurich	New York	Miami
10	Tianjin	London	Washington DC	Melbourne	Tokyo
11	Rotterdam	Paris	Sydney	Amsterdam	Singapore
12	Kuala Lumpur	Frankfurt	Luxembourg	Frankfurt	Milan
13	Kaohsiung	Amsterdam	Toronto	Paris	Hong Kong
14	Dalian	Istanbul	Seoul	Stockholm	Moscow
15	Hamburg	Toronto	Montreal	Montreal	Hamburg
16	Antwerp	San Francisco	Shanghai	Rotterdam	Madrid
17	Xiamen	Phoenix	Osaka	Chicago	Washington DC
18	Los Angeles	Tokyo	Dubai	Madrid	Vienna
19	Tanjung Pelepas	New York	Frankfurt		Brussels
20	Long Beach	Philadelphia	Vancouver		Prague
21	Laem Chabang	Minneapolis	Taipei		Copenhagen
22	Saigon	Guangzhou	Shenzhen		Warsaw
23	Bremen	Mexico City	Geneva		Budapest
24	New York	Miami	Melbourne		Beijing
25	Yingkou	Shanghai	Los Angeles		Taipei

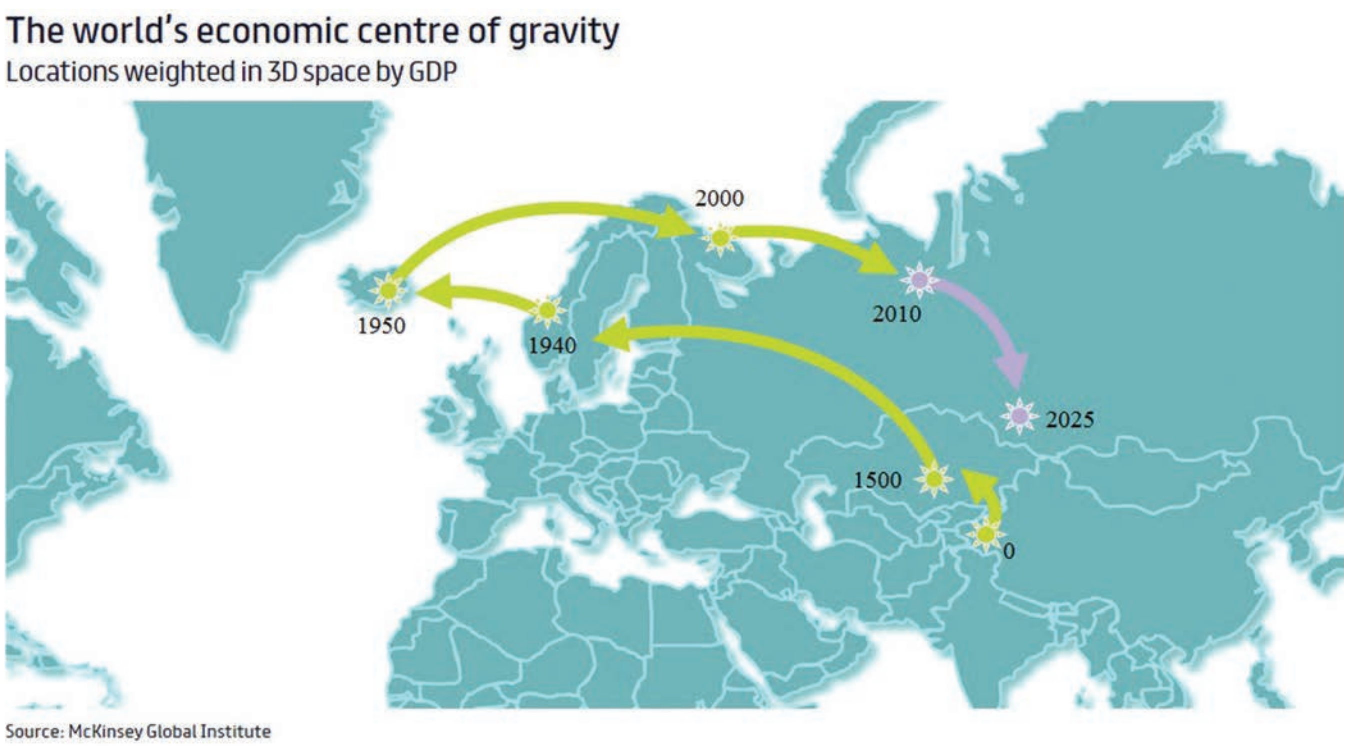
1 Rankings come from different years: ports (2014), airports (2014), financial centres (2016), migration (2007) and online traffic (2013)
2 Major cities by share of foreign-born residents (min 20%, max 83%)
Source: AAPA; Airports Council International; Global Financial Centres Index; International Organisation for Migration; Telegeography; McKinsey Global Institute analysis

[16] Cities defined by contiguous urban area, not administrative boundary

However, individual cities are likely to threaten London on specific aspects of its strength, even if they remain smaller in overall scale and scope. A number of smaller cities already hold extremely strong positions in particular aspects of global competition – see figure 6. For example, London already faces strong competition from Singapore as a location for global business and talent, Dubai as a hub for global travellers, and from the West Coast of the United States as a centre for innovators and entrepreneurs.

Many of these competitor cities can use their greater political autonomy to pursue global businesses, talent and investment more actively. Singapore, for example, has successfully sought out and attracted foreign direct investment through its Economic Development Board, a high-performance agency that provides a single point of government service for international investors and has control or influence over the full range of economic levers to attract specific international targets. Dubai has used a combination of zero corporation tax and the adoption of English law to build a financial services hub in under a decade.

Figure 7



03. A CHANGING CONTEXT FOR LONDON

London is thus likely to face a broad set of competitors by 2036. One hypothesis, to give a picture of this diversity, is listed below:

- **Peers for overall economic scale:** Tokyo, New York, Shanghai, Los Angeles, Beijing (potentially Sao Paulo, Tianjin)

- **Peers as global centres for finance and business:** New York, Tokyo, Singapore, Hong Kong (potentially Dubai, Seoul, Frankfurt)

- **Peers as hubs for technology, education and innovation:** New York, San Francisco, Tel Aviv, Boston, Singapore (potentially Berlin, Bangalore, Shanghai)

The competitive challenge for London is less that "new Londons" will emerge as true peers and compete with London across all fronts, but more that a range of specific areas of strength will come under attack from a range of competitors, many of whom are more specialised.

Rising peer cities, taken together with an uncertain economic outlook, highlight the urgency of the task ahead: of building on London's strengths, addressing strains and creating the impetus to adapt in a changing world. London's continued pre-eminence is no longer a given. But concerted action in the areas we describe in this report can help London navigate the next two decades successfully.

04.

LONDON’S PLATFORM FOR GROWTH

London's platform for growth

London's economic performance has been driven by a set of complementary strengths, which, in combination, delineate its unique position in the world economy. Given our analysis of London's changing context - and in particular the vote to leave the EU - we believe the need for each of these strengths has the potential to become more, not less, significant in the future. Therefore the economic priorities we set out for the city begin with sustaining and developing these platforms for growth:

- London has **the highest-talent population in the world** with a higher proportion of graduates than any other major city, underpinned by more world-leading educational institutions than anywhere else and an environment that attracts talented people from around the world;

- London is **the leading global hub for business**, with more large international subsidiaries located here than any other city in the world, lured by a business-friendly environment and access to a global network of opportunities;

- London holds **the strongest position in financial and professional services**, a combination that has driven impressive jobs and GVA growth;

- London is **a world-leading centre for technology, creativity and entrepreneurship**, benefiting from the rich and mutually supporting connections between its positions in technology and the creative industries; and

- London is **the global capital for international tourism**, the most visited city in the world.

Each of these strengths is discussed below, along with an assessment of how London might protect and sustain them for the future.

The highest-talent population in the world

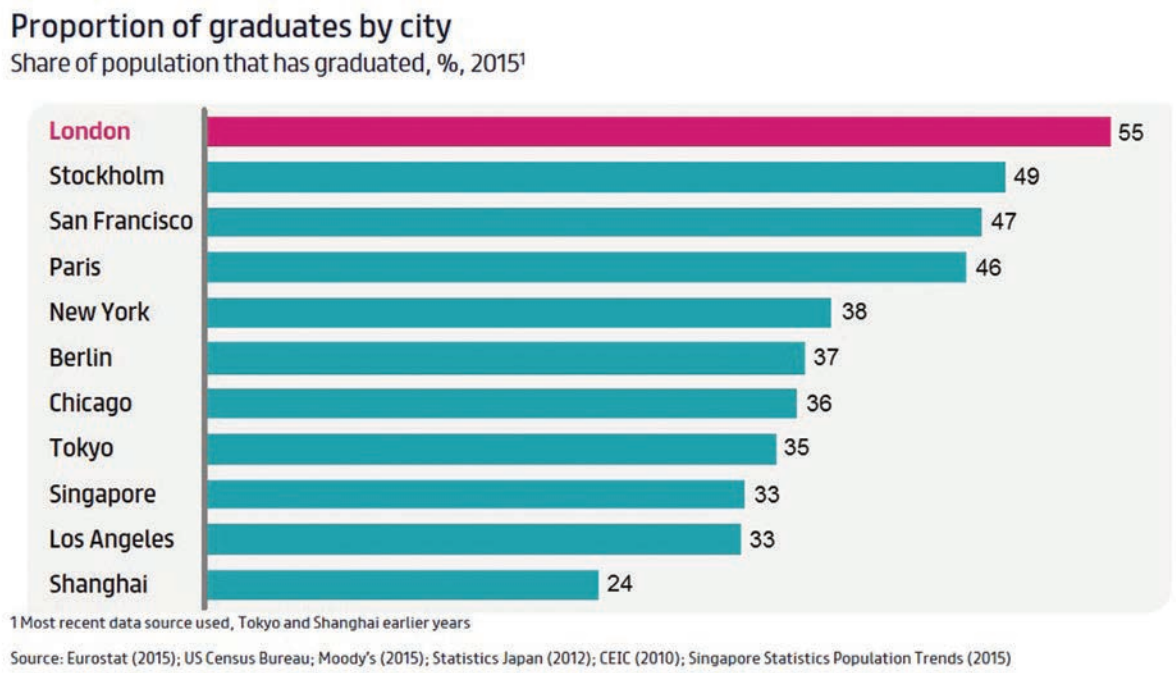
London arguably houses the greatest concentration of talented people in the world. For example, 55% of London's population aged 21 and over are graduates – significantly higher than any other major world city, as shown in figure 8.

On the one hand, this strength in talent reflects London's world-leading position in tertiary education. London has the largest number of leading educational institutions of any city in the world[17]; and more international students than any of its peers[18], reflecting both the strength and depth of its leading institutions. In addition, London has improved its once-mediocre secondary school performance to lead England in pre-university education[19].

On the other hand, London's talent pool also reflects the city's historic ability to attract top talent from elsewhere, for education, employment and entrepreneurship. Today, over a third of Londoners are foreign-born. It is not just the economic opportunities that make the city attractive, but London's fundamental appeal as a place to live. For example, London has a liberal culture, true political and religious freedom, a long-term role as a cultural capital, and a physical environment that is rich in both natural and architectural beauty.

This combination of economic opportunity and cultural and environmental appeal means London has a clear lead as the most popular city in the world when global employees are asked where they would consider moving to for work[20]. While smaller cities such as Vancouver, Copenhagen and Sydney may beat London in narrowly defined quality-of-life indices[21], London's combination of qualities makes it the most attractive overall.

Figure 8



[17] QS, **Best Student Cities**, 2016
[18] World Cities Culture Forum, **World Cities Culture Report**, 2014
[19] Joint Council for Qualifications regional data
[20] BCG and The Network, **Decoding Global Talent**, October 2014
[21] Mercer, **2016 Quality Of Living Worldwide City Rankings Survey**, 2016

Box 1: Immigration and London

Immigration has been beneficial to London's economy, driving growth in GVA, jobs and cultural capital[22]. Economic immigrants attracted to live in London are more likely to be graduates and more likely to be employed. They are less likely to claim state benefits or remain out of work, training or formal study[23].

In the year to March 2016, net migration to the UK was 327,000, with EU and non-EU migrants making up roughly equal proportions as seen in figure 9[24]. While EU migrants can currently enter the UK under free movement rules, those from the rest of the world must meet visa requirements set out by the Home Office. Following the vote to leave the EU, migration from the bloc may be restricted; however, the form that new rules might take is unclear.

The Government classifies international students as migrants, despite many arguing that they are in fact temporary visitors as they leave the UK at the end of their course or transfer into a different migration route if, for example, they secure a job. This makes students subject to the Government's net migration target, which acts as a **de facto** cap on non-EU students and has led the Government to implement a series of restrictive changes to visa rules. Universities have argued that this has deterred some students, particularly from South Asia. This is a concern, given the prize at stake: London is the most popular city in the world for international students, with around 110,000 currently studying in the city[25]. International students are positive contributors to London's economy, providing a net benefit of £2.3 billion a year and supporting 70,000 jobs in total[26]. Some graduates of London's leading universities stay on to start a business or move into skilled employment, creating further economic benefits. Attracting international students to London must remain a priority following EU exit.

The picture is complicated somewhat by the different types of immigration, described below.

1. Highly skilled migrants

The UK has the most highly educated migrants in the EU – more than half of all foreign-born residents are graduates[27]. Talented migrants fill skills gaps in the economy, particularly in STEM-based (science, technology, engineering and mathematics) occupations[28]. They are also highly entrepreneurial and are nearly 50% more likely to start a business than are UK citizens[29].

Skilled migration is widely acknowledged as a major contributor to London's economy, particularly in the scientific, creative and digital industries[30]. The Government has recognised this through the creation of the Tier 1 Exceptional Talent visa, to attract talent from across the world to science and technology clusters. To maintain the economic benefits of skilled migration, London must continue to attract talent from across the world, including from the EU following the vote to leave.

[22] London is not unusual in this respect. Two thirds of urban economic growth is typically determined by population flow. McKinsey, **The power of collective action: Forging a global role for mayors**, 2016
[23] UCL Centre for Research and Analysis of Migration (CReAM), Dustmann & Frattini, 2015
[24] ONS, **Migration Statistics Quarterly Report**, August 2016
[25] London First, **London Calling**, 2015
[26] London First, **London Calling**, 2015
[27] Eurostat, **People in the EU: who are we and how do we live**, 2015
[28] Home Office Shortage Occupation List
[29] Global Entrepreneurship Monitor 2015
[30] Tech City UK, **Tech Nation 2016 report**

2. Mid-skilled and lower-skilled migration

Migrants also fill a range of other roles in the labour market, including:

- cyclical sectors, where it is hard to generate and train a pipeline of native workers because the number of jobs varies dramatically from peak to trough, e.g., construction;

- sectors where in principle enough UK workers could be trained, e.g., nursing, but where in practice it appears difficult to match local supply with demand; and

- lower-paid sectors where local workers appear to be unwilling to undertake the roles, e.g., social care or hospitality.

The Government has sought to curb lower-skilled migration from outside the EU through changes to the points-based visa system and the closure of several unskilled visa routes. EU migrants, particularly from countries that acceded after 2004, therefore make up the bulk of incoming lower-skilled workers.

There is substantial evidence that the number of jobs in the labour market does not remain constant with migration[31] – migrants create jobs as well as competing for them. However, migration can increase demand for public services such as school places in areas where they settle in large numbers. In addition, there is some evidence of negative distributional impacts, with minor reductions in the wages of UK workers in low-paid sectors due to increased competition[32].

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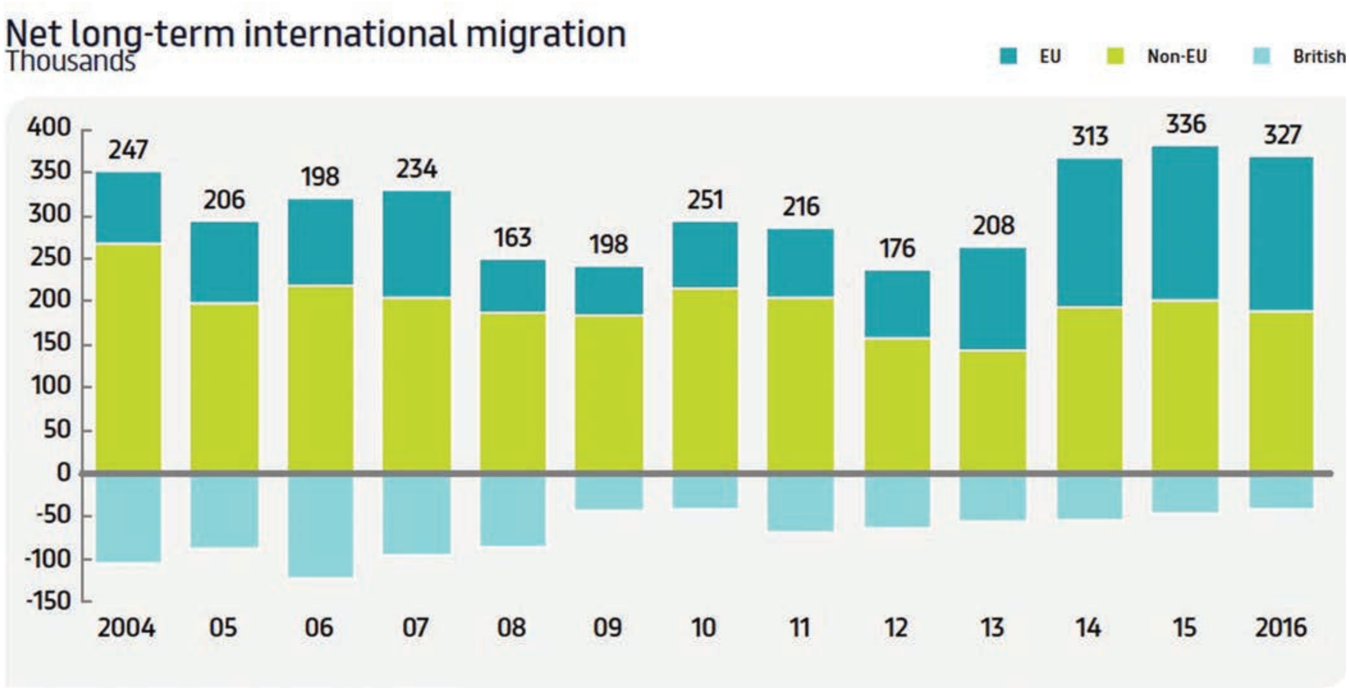
Lower-skilled immigration may be the target of new restrictions following EU exit. Given this, the challenge for London will be to train low-income Londoners to fill roles previously filled by migrants as described in the second category above, while bolstering public services to support continued recruitment in those areas where immigration will remain a key component of the labour force.

[31] Migration Observatory, **The Labour Market Effect of Immigration**, 2015
[32] Bank of England, **The impact of immigration on occupational wages**, December 2015
[33] Migration Observatory, **The Labour Market Effects of Immigration**, 2015
[34] Bank of England, **The impact of immigration on occupational wages**, December 2015

Figure 9



Note: 2015 and 2016 figures are provisional to end of Q1

Source: ONS Migration Statistics Quarterly Report, August 2016

As talent becomes an ever more important driver of economic performance, London's strength in this area is a critical foundation for its success. Looking at potential threats to London's position, two areas stand out.

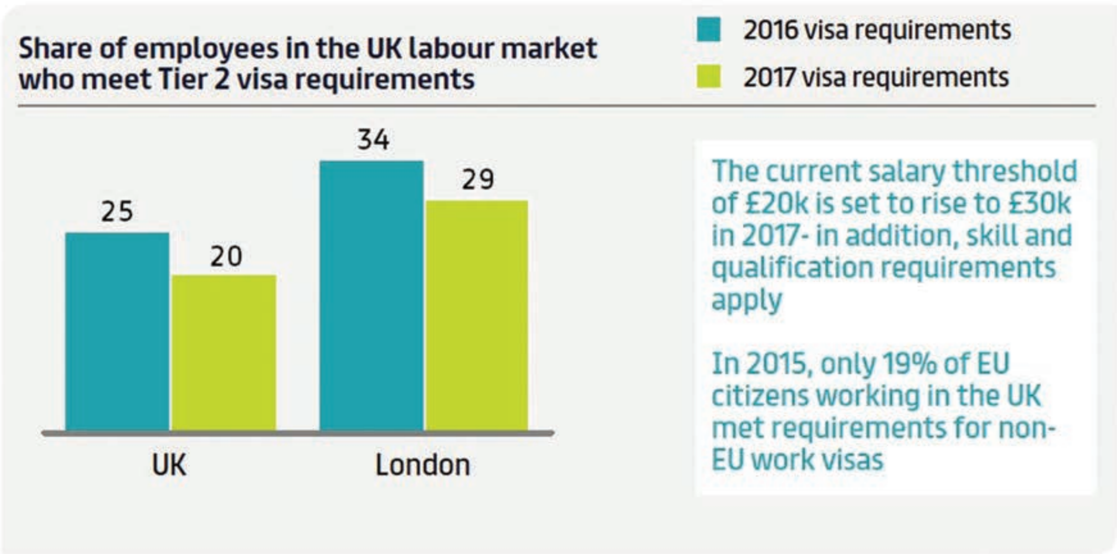
First, post-referendum restrictions on skilled migration may impede London's ability to attract talent from Europe and the wider world. A work permit system for EU migrants would make it harder for firms to recruit from abroad as only 19% of EU workers in the UK are paid enough to meet the current salary thresholds of £20,000 for Tier 2 visas[35] [figure 10]. More broadly, talented workers and students may choose other cities if London fails to maintain its reputation for diversity and openness.

Second, further rises in the cost of living, particularly housing, will reduce the attractiveness of London.

[35] Migration Observatory, **Potential Implications of Admission Criteria for EU Nationals Coming to the UK**, 2016

Figure 10

Only one in four UK workers meet the current requirements for non-EU work visas; this falls to one in five EU workers



Source: Migration Observatory, Potential Implications of Admission Criteria for EU Nationals Coming to the UK, 2016

The leading international hub for business

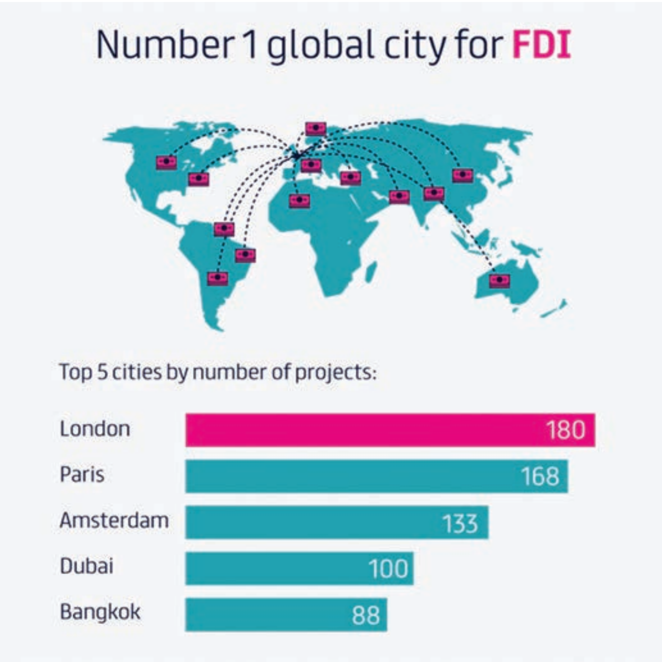
Defining and measuring relative performance as a global business hub is an art rather than a science. A number of indices seek to do this: looking across them, London holds the global leadership position as a centre for international business (with New York its only real peer)[36]. Looking beyond the consensus of indices, whose methodology is often contentious, two concrete indicators of London's global leadership as an international hub for business are that:

- London attracts more foreign investment projects than any other city in the world, as shown in figure 11[37]; and

- London attracts more billion-dollar foreign subsidiaries than any other city in the world, as shown in figure 12. While the locations of company headquarters tend to be driven by where the company is founded, the locations of large subsidiaries reflect the cities that international companies see as attractive business locations.

[36] For example, London is ranked: number one in the Global Power City Index, 2016; number one in PwC's Cities of Opportunity index, 2016; and number one in the AT Kearney Global Cities Index, 2016
[37] IBM, **Global Location Trends, 2016 Annual Report**, 2016

Figure 11



SOURCE: IBM Institute for Business Value, Global location Trends: 2015, Annual Report, 2015

The vote to leave the EU poses a set of challenges if London is to maintain its status as a leading global hub for business. International businesses may be discouraged from investing in London due to the uncertain economic environment in the short term. In the longer term, the implications for international businesses will depend on the nature of the UK's continuing relationship with the EU, coupled with the broader range of public policies adopted by the UK government.

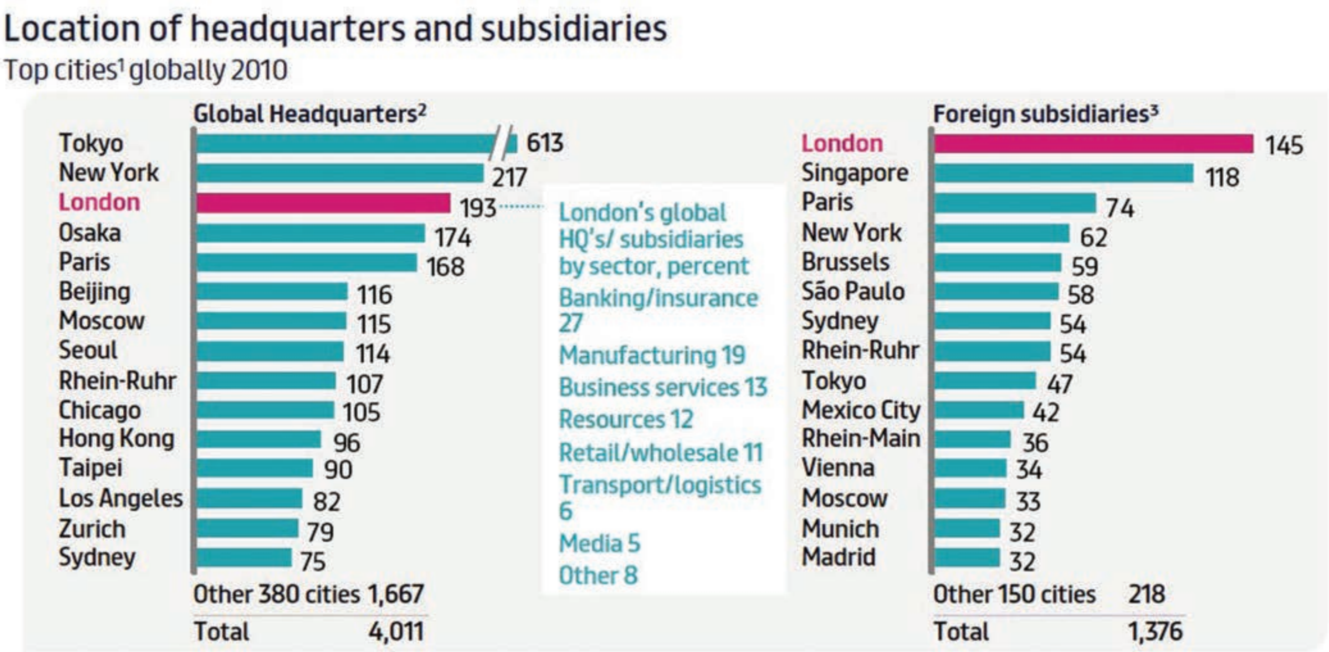
It is clear that London's future prosperity as a global hub for business hinges on its ability to trade freely and access talent from across the world. The EU is London's largest trading partner and it receives 52% of service exports and 40% of goods exports[38]. Maintaining the free movement of goods, services, capital and people, to the greatest extent possible, would support this trade and London's position as an access point to Europe for non-EU companies.

A major risk for London's status as an international business hub is that a small number of decisions may cause London's access to diminish, causing material economic loss. As the Government comes to negotiate and agree the future arrangements with the EU it is important to identify those issues that have a large economic impact and require concerted effort to secure swift and favourable arrangements, and those issues that have articulate proponents but relatively limited implications for jobs and growth.

Of course the vote to leave also creates opportunities. It is a potential catalyst for tackling existing challenges, as described in Chapter 5. And, it could create the freedom for pro-growth public policy, whether through deregulation or exemption from State Aid rules, for example in the digital sector.

[38] GLA, **Draft Economic Evidence Base**, 2016

Figure 12



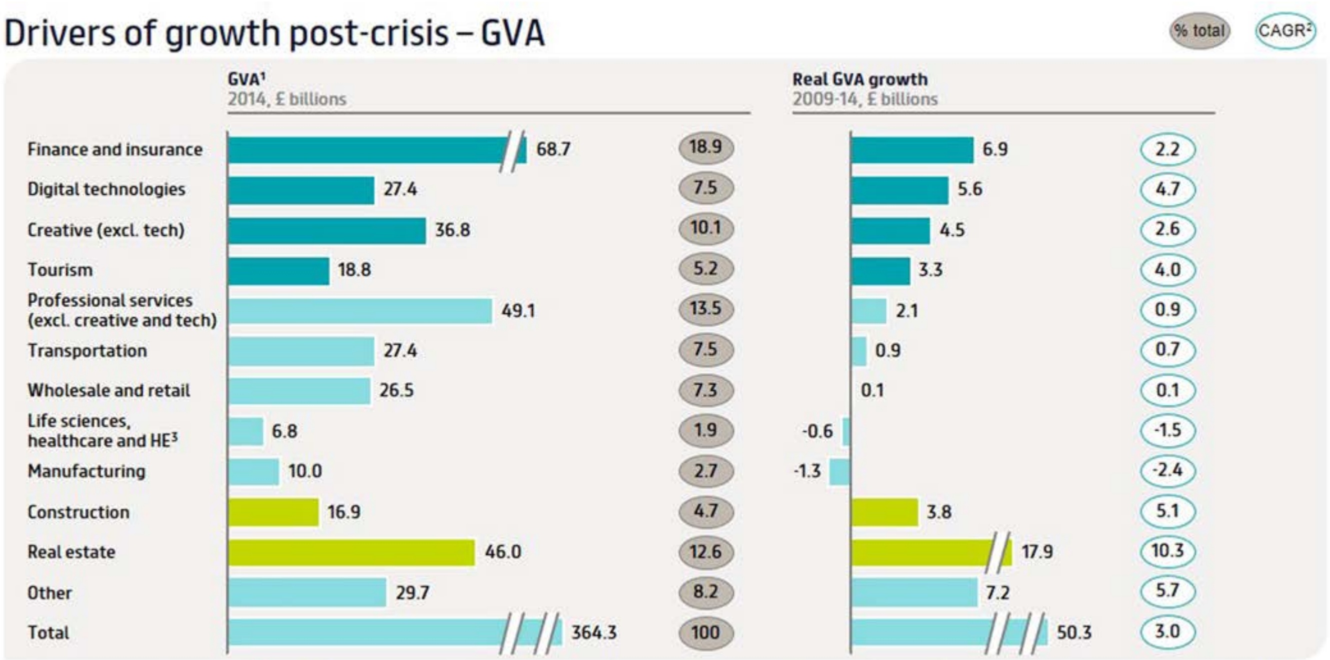
1 Metros defined as contiguous urban area, not by administrative boundaries
2 Global head office of a company with over $1bn revenue
3 Location of a subsidiary of a company (excluding the head office), where the subsidiary has revenue of over $1bn
Source: McKinsey Large Companies Database; McKinsey Global Institute analysis

London's sources of future growth and jobs

Figures 13 and 14 show the performance of different sectors since 2009. GVA in financial services has outgrown all other sectors in absolute terms, reflecting this traditionally strong sector's rebound from the losses it incurred during last decade's financial and economic crisis. Creative and digital sectors have grown quickly, pointing to an important source of future income and employment. Tourist businesses have also grown relatively quickly, especially in terms of the number of people they employ, despite the relatively high value of sterling across much of the period. These are the areas on which London should focus in creating further growth in GVA and employment.

Two other sectors have also substantially increased GVA: construction and real estate. The growth in real estate is largely due to sharp rises in asset prices, while construction activity is in large part a function of growth in other sectors.

Figure 13



1 Chained to 2014 prices. Based on ONS Regional Accounts for Total, Finance and insurance, Wholesale and retail, Construction and Real estate. For the remaining industries based on the Annual Business Survey and scaled up to reflect ONS Regional Accounts data according to London's share of UK GVA per sector; 2 Compound Annual Growth Rate; 3 Growth is driven by public sector (healthcare and higher education). Research subsidies are excluded from GVA calculations resulting in negative value add in some sub-categories in some years; Note: Definition of all sectors available in technical appendix

Source: ONS Regional Accounts; ONS Annual Business Survey; team analysis

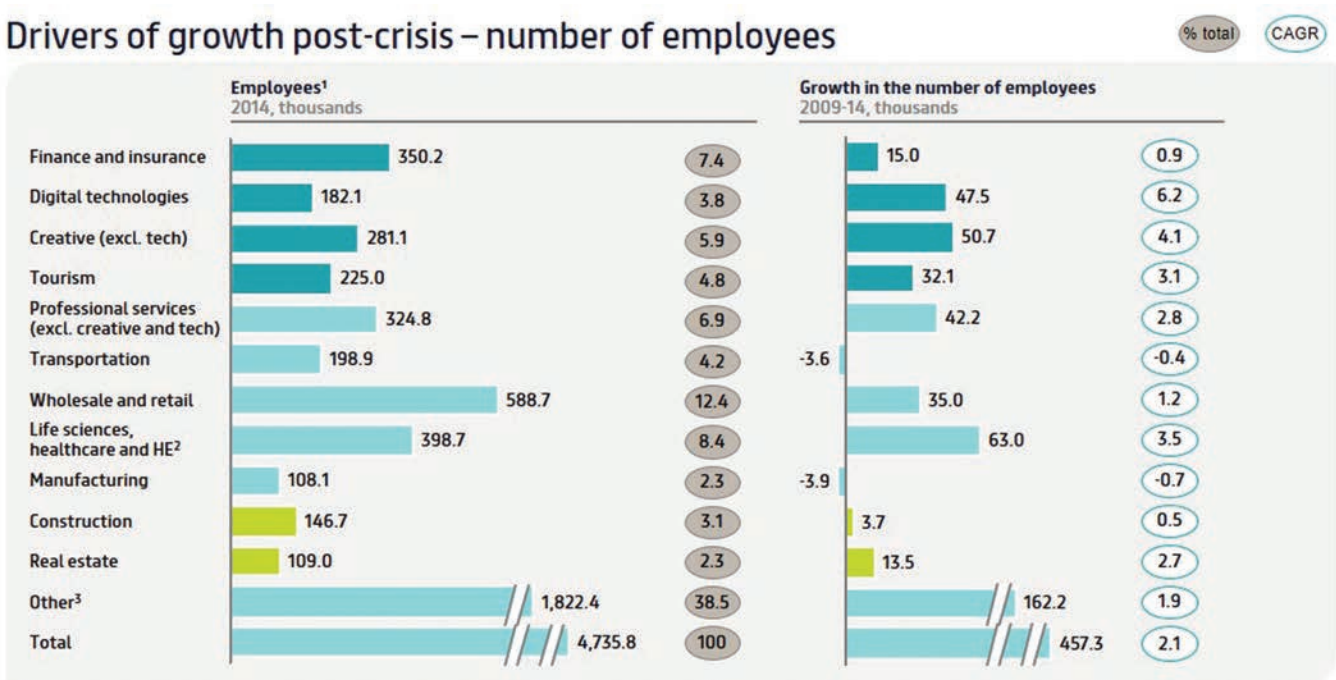
The strongest position in financial and business services

London is home to world-leading financial and business services sectors. For example, London has more employees in both financial and professional services than any other city[39], and has more offices of highly global services firms in law, accountancy and finance than anywhere else (although New York holds the top spot for consultancies and advertising firms)[40].

London's recent GVA and jobs growth has been fuelled by these industries. As figures 15 and 16 show, the financial and business services sectors were responsible for 50% of GVA growth from 2000 to 2014, and 44% of jobs growth from 2000 to 2015, reflecting long-term trends since the comparable data sets began in the mid-1990s.

Further, the financial and professional services industries produce more tax revenue than any other sector, and are significant net exporters that help to offset Britain's trade deficit[41]. Moreover, the financial services sector also sits at the centre of a highly integrated and networked cluster, instigating instructions, loans and transactions which facilitate the flow of capital, contributing to jobs and growth across London's, and Britain's, economy.

Figure 14

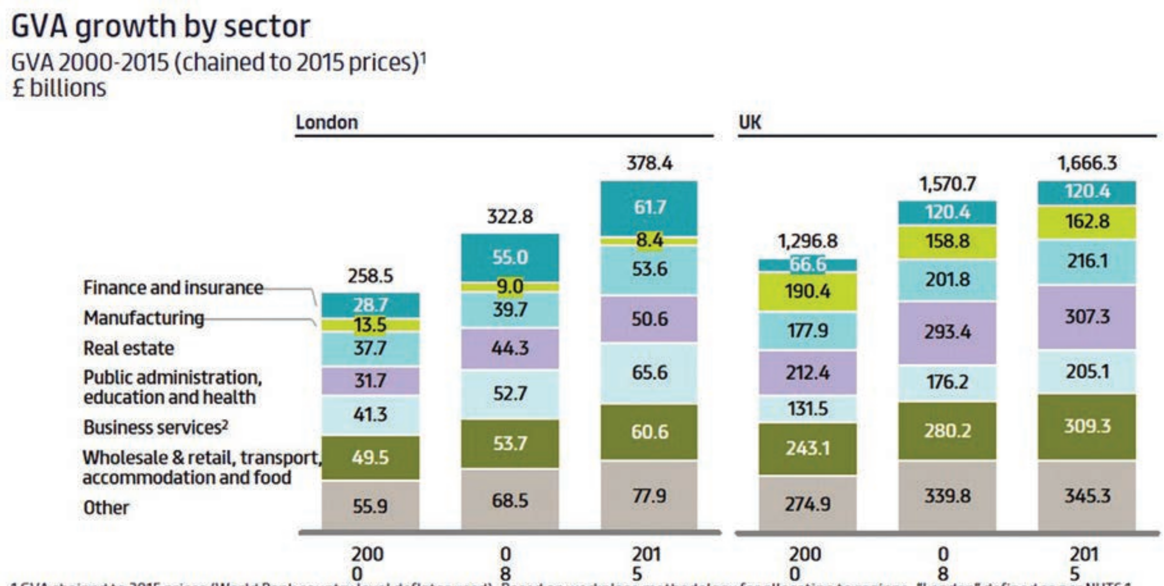


1 Workplace based measure, excludes self-employment; 2 Growth in the number of employees is driven by public sector (healthcare and higher education); 3 The largest sectors within "other" category are: Public administration and defence, Education (excl. HE), Employment activities, and Social work activities; Note: Definition of all sectors available in technical appendix

Source: GLA Economics analysis of the Business Register and Employment Survey; team analysis

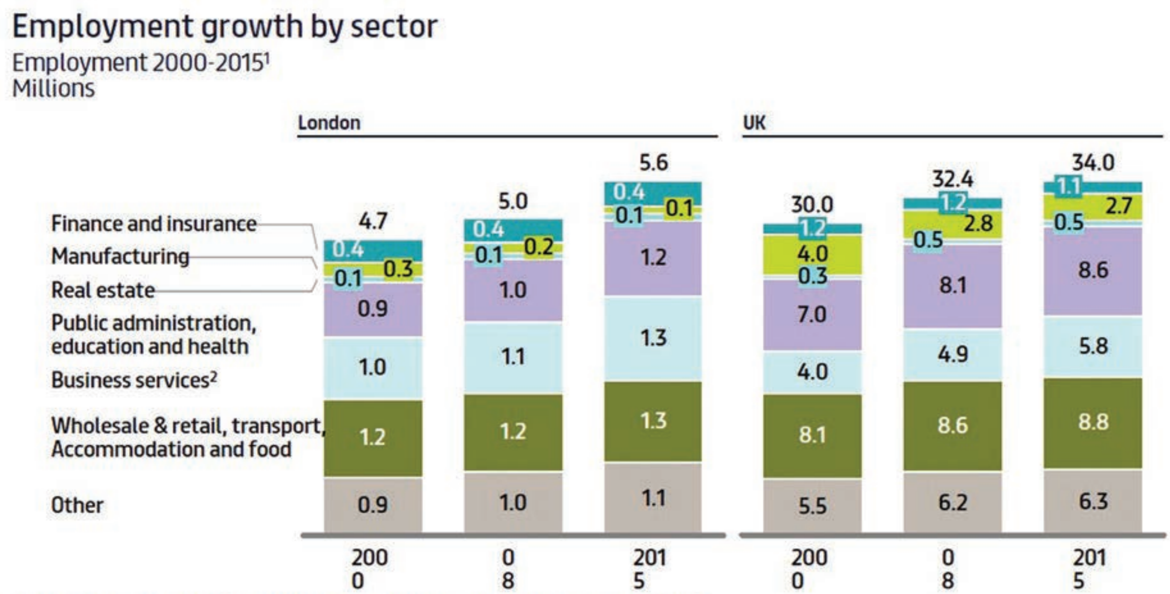
[39] Deloitte, **Globaltown: Winning London's crucial battle for talent**, 2013
[40] Taylor P.J., **Advanced Producer Service Centres in the World Economy**, 2011
[41] TheCityUK, **UK Financial and Related Professional Services: Meeting the challenges and delivering opportunities**, 2016

Figure 15



1 GVA chained to 2015 prices (World Bank country level deflator used). Based on workplace methodology for allocating to regions. "London" defined as per NUTS 1, includes Greater London. Industry classification based on SIC 2007
2 Includes professional, scientific and technical activities as well as administrative and support service activities
Source: Office of National Statistics 2016; World Bank; team analysis

Figure 16



1 "London" defined as per NUTS 1, includes Greater London. Industry classification based on SIC 2007
2 Includes professional, scientific and technical activities and administrative and support service activities
Source: Nomis, Workforce Jobs (includes the self-employed, UK total includes the armed forces); team analysis

Sustaining this strength

London's leading position in financial and professional services will be central to sustaining the capital's growth, not least because these sectors' large share of London's economy means that the absolute growth they contribute will be critical even if their growth rates slow.

The three main pressures that are affecting London's financial and professional services sectors are the global decline in profitability, hardening international competition, and the uncertainties and implications flowing from the EU referendum result.

First, financial services firms have become less profitable in recent years, following the financial crisis and driven by regulation and restructuring. For example, the UK banking sector's return on equity has fallen from 25% in 2006 to under 9% in 2015.

Second, global competition is hardening. Profit pools are migrating to emerging markets, particularly China, where retail and wholesale banking and asset management grew 19% a year between 2007 and 2014. Hong Kong and Singapore are also becoming credible alternative centres for financial and professional services after strong regional GDP growth[42,43]. In addition, the UK's trade relationship with some of these markets is weakening. For example, over the last 15years the UK has fallen from India's third-largest trading partner to its twelfth. Competition is also fierce from other developed countries, most notably from the US which is capitalising on its leading position in fast-growing sectors, particularly investment management and fintech.

Third, the mobile nature of the financial and professional service sectors makes the UK's exit from the EU a particularly significant challenge, the scale of which will largely depend on the precise arrangement around access to the Single Market, coupled with the rules over movement of people.

In the context of these pressures, TheCityUK has identified a set of priority service areas where there is a clear opportunity for partnership across industry, government and regulators to promote rapid growth[44]:

[42] TheCityUK, **UK Financial and Related Professional Services: Meeting the challenges and delivering opportunities**, 2016
[43] For example, Hong Kong already has a 75% share of mainland Chinese IPOs and Singapore saw 10% annual growth in gross written premiums in reinsurance between 2010 and 2013, compared with 1% for the London Market
[44] TheCityUK, **Financial and Related Professional Services: Meeting the challenges and delivering opportunities**, 2016

• **Capital markets and market infrastructure**. London has a leading capital market position but faces competition. For example, Hong Kong and Singapore are capturing an increasing share of offshore bond issuance by Chinese corporates[45]. Increased effort is required, for example, to publish better information in the London market on Chinese business activity.

• **Insurance**. London is the largest global hub for commercial and specialty insurance but faces long-term challenges: for example, increased underwriting locally in emerging market centres puts 30-40% of London premiums at risk. To stay ahead, the London market should focus on innovation to develop insurance products that enable corporates to better manage emerging risks, e.g., from cyber crime.

• **Infrastructure financing**. Global demand for infrastructure is projected to reach over $90 trillion by 2030, almost doubling the estimated $50 trillion value of existing infrastructure[46]. London can take advantage of this opportunity by exporting approaches and regulatory standards to other markets, and leveraging its expertise, e.g., in green finance, to capture the investment premium for green infrastructure[47].

• **Investment management**. The investment management sector globally is forecast to grow 6% annually over the next five years, driven by an ageing population and the rise of the middle class in emerging markets[48]. London has an opportunity to strengthen its investment management market through skills development, product expertise and market liberalisation.

• **Law**. London is the legal capital of the world, largely benefiting from the primacy of English law: for example, 40% of governing law in global corporate arbitrations is English[49]. London should foster collaboration between arbitration organisations and the judiciary, and partner with government to export UK legal and regulatory standards to emerging markets, to maximise compatibility of legal frameworks and facilitate trade and investment.

[45] Dealogic
[46] McKinsey Center for Business and Environment, **Financing change: How to mobilize private-sector financing for sustainable infrastructure, 2016; New Climate Economy, Better Growth, Better Climate**, 2014
[47] Global Commission on the Economy and Climate, as quoted in McKinsey Center for Business and Environment, Financing change: How to mobilize private-sector financing for sustainable infrastructure, 2016
[48] PwC, **Asset Management 2020: A Brave New World**, 2014
[49] Queen Mary University of London, **2015 International Arbitration Survey: Improvements and Innovations in International Arbitration**, 2015

A world-leading centre for technology, creativity and entrepreneurship

A technology sector grown out of London's traditional strength

London's technology sector has had a significant impact on recent GDP and employment performance. The sector has produced many success stories in recent years:

• the high-value sales of TouchType to Microsoft and DeepMind to Google;

• the high-value listings of Equiniti and Worldpay; and

• six out of the 10 fastest-growing European 'unicorns' being headquartered in London[50].

There is no evidence that this momentum has reduced following the vote to leave the EU. Indeed since the vote, companies such as Google, with a large presence, have announced that they are increasing the scale of their footprint in London[51].

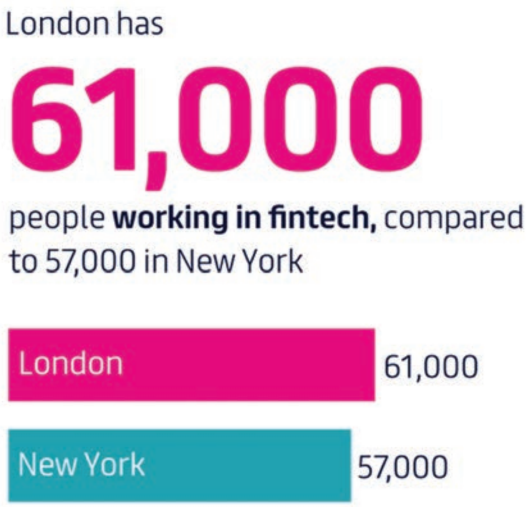
Comparing the performance of London's technology cluster to others around the world, while London's overall technology market is smaller than Silicon Valley or New York in some sectors, it is a leader in fintech:

• the UK accounts for 11% of global fintech activity, with a market size greater than California or New York[52];

• London has 61,000 people working in its fintech industry, compared with 57,000 in New York and 74,000 in the whole of California[53];

• looking across London, the South-East and East of the UK, the region as a whole has more employees in the technology and information sector than the state of California and the number is growing faster[54]; and

• London is ranked first in the European Digital City index of technology start-ups and scale-ups, ahead of Paris, Berlin and Amsterdam[55].



[50] GP Bullhound, **European Unicorns 2016: Survival of the fittest**, 2016 – they are TransferWise, VE Interactive, Anaplan, Funding Circle, Shazam, Frafetch
[51] Bloomberg, **Google to Expand London Campus Despite Brexit Questions**, 2016
[52] City UK, **UK financial and related professional services**, 2016
[53] TheCityUK, **UK financial and related professional services**, 2016
[54] Liebenau, Jonathan, Mandel, Michael, London, Digital City on the Rise, July 2014
[55] European Digital Cities Index, 2016. Available at https://digitalcityindex.eu/

04. LONDON'S PLATFORM FOR GROWTH

London's technology sector also leverages the city's existing strengths more broadly. For example, compared with San Francisco, London's technology businesses are significantly more likely to be in digital media, or sales and marketing, as well as financial services, and significantly less likely to be in more "pure-tech" sectors such as mobile and video[56].

As a result, leaders such as TransferWise and Funding Circle take advantage of London's supportive regulatory environment that encourages innovation and competition but provides certainty to users[57]. This has also led to the rise of a number of digitally focused 'challenger banks' such as Metro Bank, Atom and Monzo Bank[58]. These new banks grew lending assets by 31.5% in 2015, compared to a decline of 4.9% for the 'big five' retail banks.

London's strength in technology is also complemented by its position in science more generally: the city's world-class research clusters are leveraging the city's data and analytics expertise. For example, the new Francis Crick Institute is collaborating with the Sanger Institute on the use of computational data in genomics to accelerate clinical discoveries, while the Alan Turing Institute is partnering with HSBC on big data and analytics in economic modelling[59]. Looking beyond the M25 to the South-East region, London sits within a vibrant life sciences cluster stretching to Oxford and Cambridge, with strong links to Manchester and Leeds (see discussion in Chapter 6).

This success has been underpinned by London's attractiveness to, and openness towards, global talent: 44% of the companies identified as high potential through Tech City's 'Future Fifty' group have at least one founder from overseas[60].

[56] McKinsey and Social Genomics analysis of AngelList data
[57] London First, **London's fintech sector and the EU**, 2016
[58] KPMG, **A new landscape**, 2016
[59] Sanger Institute; see http://www.sanger.ac.uk/science/collaboration/mrc-emedlab
[60] McKinsey analysis of Tech City Future Fifty cohort; see broader UK discussion in Centre for Entrepreneurs and DueDil, **Migrant Entrepreneurs: Building Our Businesses Creating Our Jobs**, March 2014

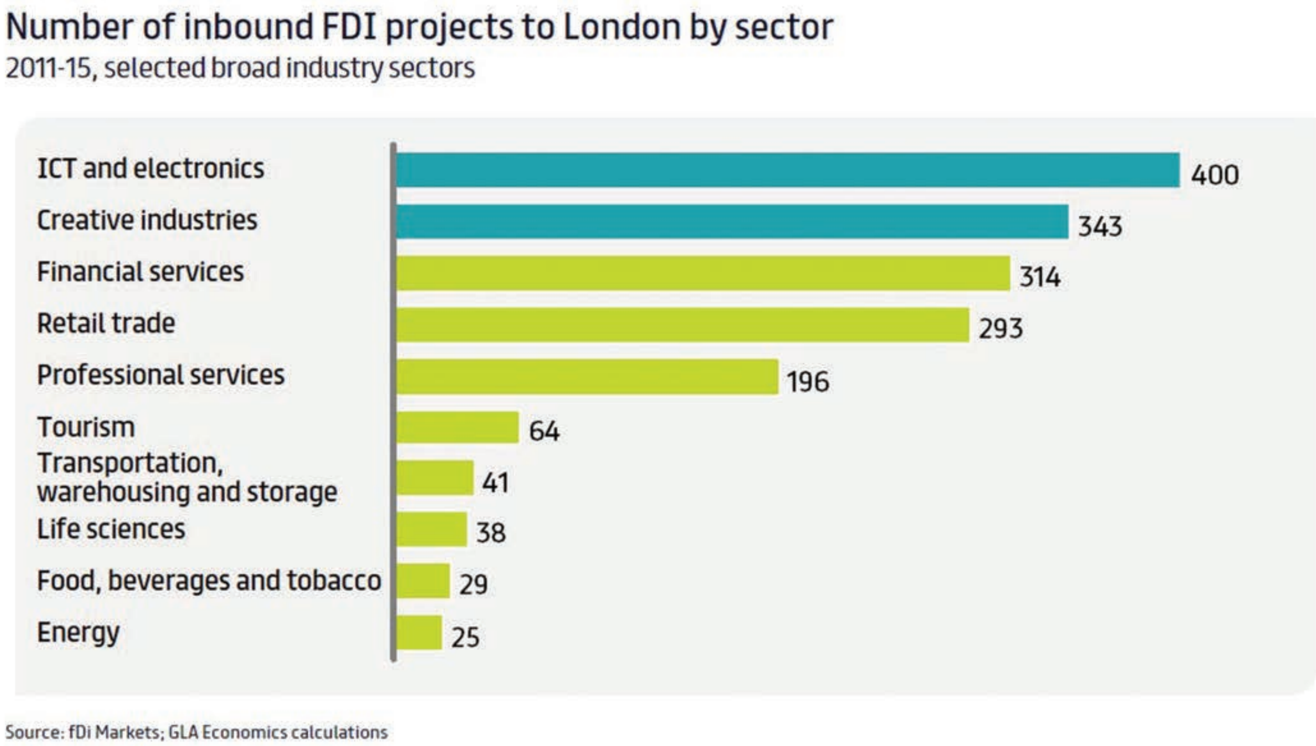
A world-leading creative economy

London has a thriving creative economy, again supported by some of the world's best talent which successfully combines both technical and creative skills. Since 2009, the GVA of creative industries in London has increased by 16.4% – today, there are 800,000 jobs in the creative economy as a whole[61]. Since 2011, the fastest growing sectors in the creative economy have been music, performing arts and visual arts[62].

This sector-based view tends, if anything, to underestimate the true impact of creative employment because not all creative roles are captured by standard industry codes, for example in-house advertising roles in firms that are not themselves part of the creative sector. Compared to the UK average of 7.4%, London's creative economy accounts for 16.3% of all jobs in the region, highlighting the importance of this fast-growing sector[63].

The growth in London's creative sector is a complement to London's position in technology. Much of the creative growth in London links to technical strength – for example, London excels in the fast-growing digital advertising market and cutting-edge film post-production. This strength has produced robust growth despite uncertainty following the EU referendum, with film and TV production growing 16.4% in the three months following the vote, against 0.5% overall GDP growth[64]. Figure 17 shows the significant inflows of foreign direct investment to the technology and creative sectors, highlighting their growing importance to London's economy.

Figure 17



[61] GLA, **Creative Industries in London**, October 2015 (which includes creative occupations in all industries)
[62] Department for Culture, Media and Sport, **Creative Industries: Focus on Employment**, July 2016
[63] GLA, **The creative industries in London**, 2015
[64] ONS Quarterly Estimates, July-Sep 2016

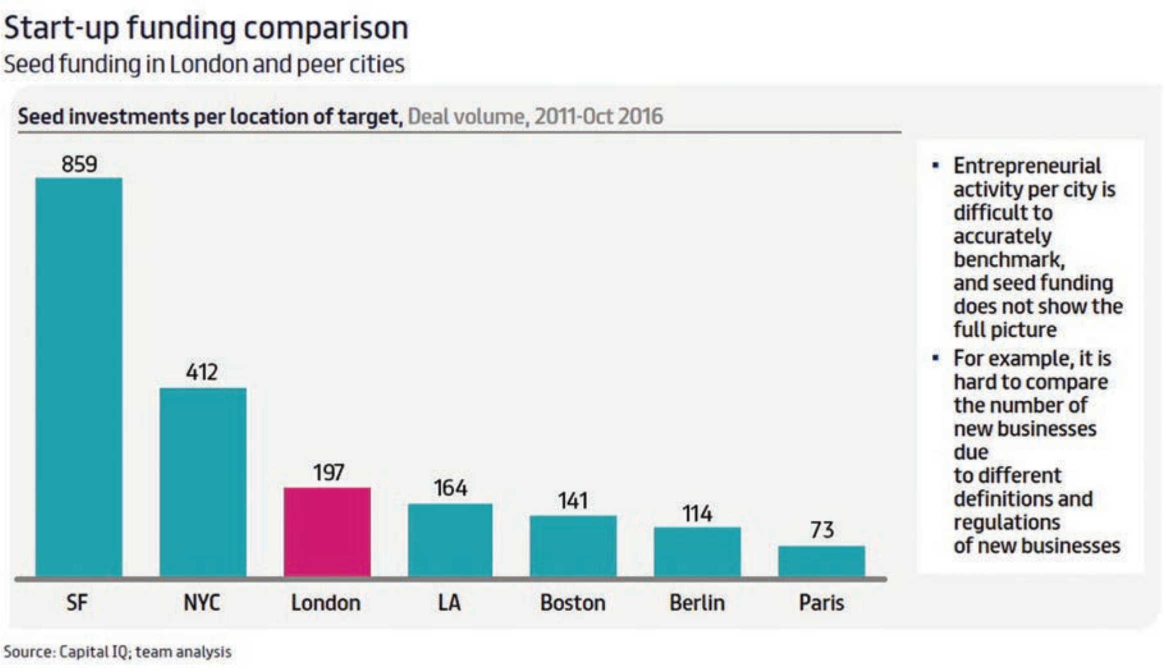
A leading centre for entrepreneurship

It is hard to measure the size of entrepreneurial clusters – not least because different cities and countries record business formation and growth differently. In figure 18, we take venture capital seed funding as a proxy for the strength of a city's entrepreneurial community. This proxy is probably biased towards US locations given the deeper venture capital market there. Nonetheless on this measure London is Europe's leading start-up hub and is a strong global contender – although it lags behind New York and San Francisco by some margin.

Looking more broadly at the contribution of smaller businesses to London's economy, companies employing fewer than 250 people provide half of London's employment and 45% of annual turnover – see figure 19. This means SMEs are as important to London's economy as they are to the UK's as a whole. Smaller businesses are represented across every sector, with the highest number of SME employees in professional and technical services, administration services and financial services – reflecting some of London's core strengths in these areas. For instance, world-leading life sciences research from London's universities is translated into commercial applications by innovative SMEs, and average acquisition values for life sciences firms are roughly equal to the US[65].

These smaller businesses benefit from, and contribute to, the agglomeration effect of London, working as a part of an ecosystem where clusters of businesses of different sizes work alongside each other to the benefit of all.

Figure 18



[65] Evaluate Pharma

Sustaining this strength

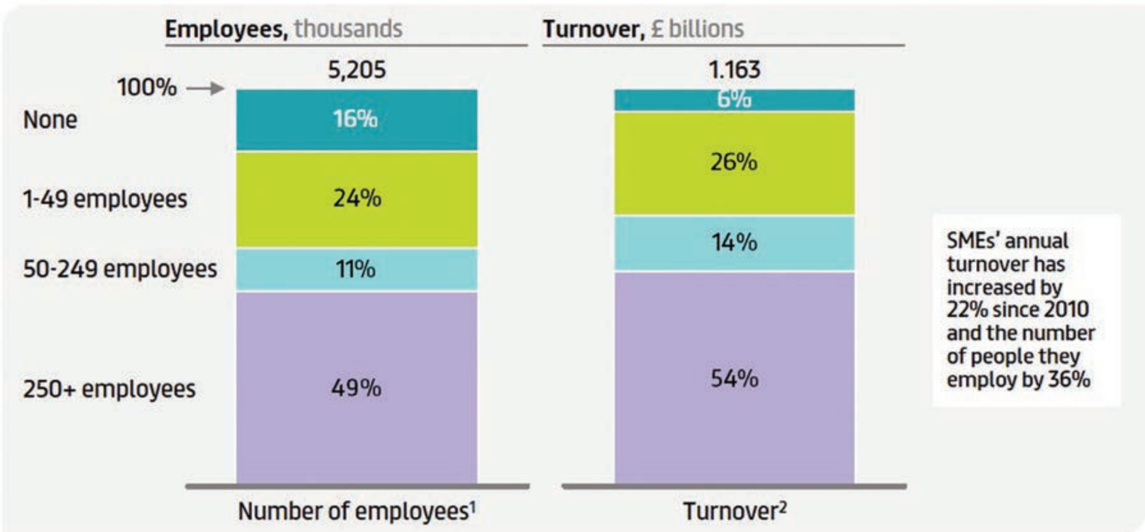
London already has critical mass in its technology and creative sectors, and has demonstrated that its strengths in culture, talent and broader business and finance can be complementary to its position as a technical, creative and entrepreneurial hub.

While cities with strong entrepreneurial foundations grow faster, they do so not through continual replication of small businesses but rather through retaining employment growth in those establishments that ultimately become large[66]. Therefore London needs to be an attractive place not only to start new businesses up, but also to scale them up. This is reflected in the recent Scale-Up Report on UK Economic Growth, an independent report to government that identifies a potential impact of 150,000 net jobs and £225 billion additional GVA by 2034 from improving the UK's performance in scaling businesses up[67].

London's entrepreneurs have told us there are three key risks to London's performance in scaling businesses up.

Figure 19

SMEs' role in London



1 Represents people employed in London, not employed by London-based businesses
2 Excludes financial and insurance activities
Source: Department for Business, Innovation and Skills, Business population estimates for the UK and regions 2016

[66] See, for example, Glaeser, Kerr & Kerr, **Entrepreneurship and urban growth; An Empirical Assessment with Historical Mines**, NBER Working Paper No. 18333, August 2012
[67] Coutu, Sherry, **The Scale-Up Report on UK Economic Growth**, November 2014

First, London faces skills gaps broadly in science, technology, engineering and mathematics (STEM) – which is increasingly becoming STEAM, namely STEM plus artistic skills for the creative sector. Across the UK, 94% of businesses in innovative sectors say it is extremely or somewhat challenging to find the talent they need to grow[68], and in London specifically a 2013 survey of Tech City's then 1,350 businesses identified the shortage of skilled workers in the jobs market as the biggest single challenge to growth[69]. Nearly 80% said they could grow faster if there were more people available with specialised digital and technology skills like coders, developers and usability specialists. The skills in highest demand are shown in figure 20. This gap in particular technical skills reflects a broader UK-wide challenge in the overall level of STEM skills. For example, the CBI reports that on a UK-wide basis companies in the science, engineering and IT sectors are much less likely to have confidence in accessing the skills they need than any other sector except manufacturing[70]. The vote to leave the EU may further restrict the supply of skilled workers and talented researchers.

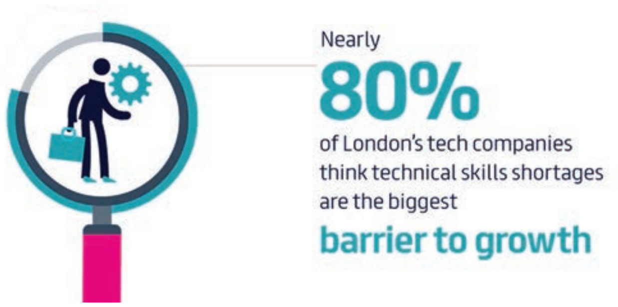
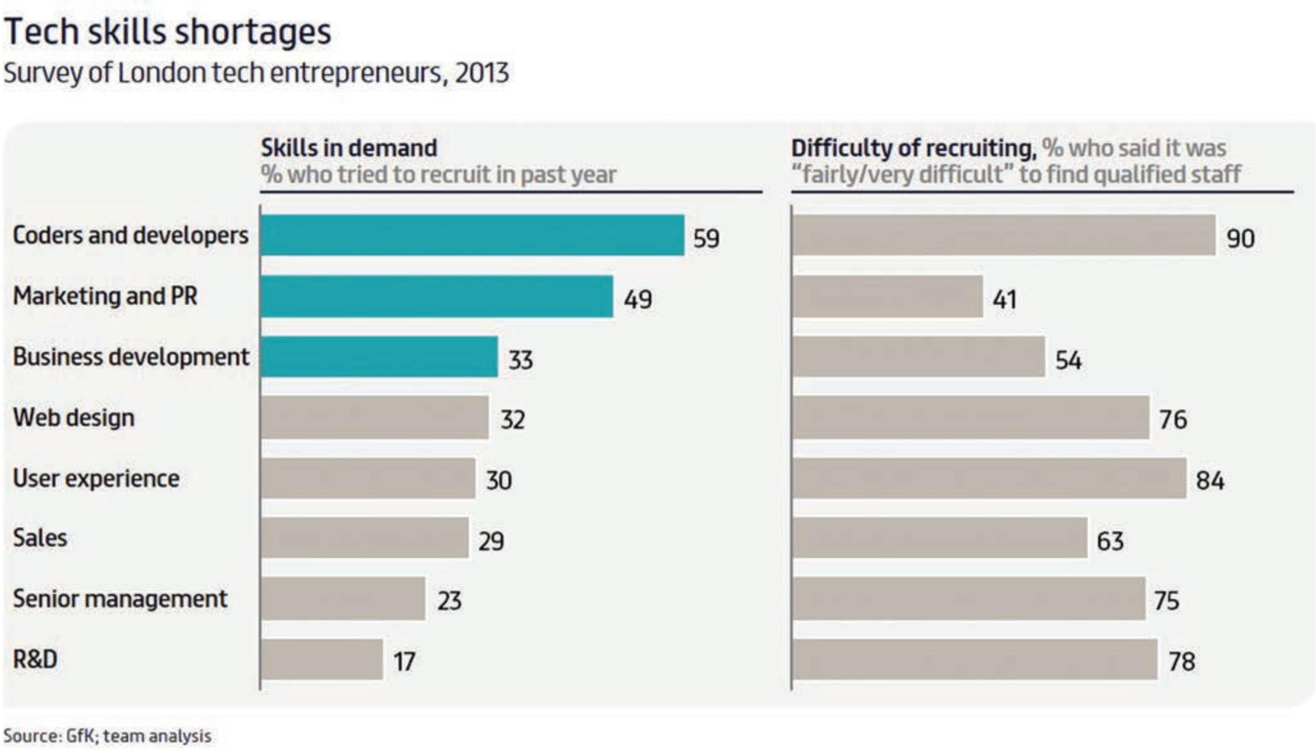


Figure 20



Source: GfK; team analysis

68 Silicon Valley Bank, **Innovation Economy Outlook UK 2014**, 2014
69 GfK, **Tech City Futures Report**, May 2013
70 CBI, **Gateway to Growth, CBI/Pearson Education and Skills Survey 2014**, July 2014

Second, growing businesses face high costs in London. The cost of office space is to some extent a natural consequence of operating in a high-competition, high-cost location such as London and is not a problem that can be solved. A natural part of the cycle for new sectors is that innovative firms enter new low-cost locations and make them into attractive hubs, thus pushing up costs and moving the next wave of entrants on to new lower-cost locations. London has a large variety of office locations with a range of costs, and plenty of opportunities to retain innovative firms in the broader city despite such a cycle. In addition, London is already experiencing an explosion in private sector led shared space initiatives to help entrepreneurs find appropriate space. Flexible use of real-estate-in-transition could provide affordable space for early-stage creative and digital start-ups. However, as discussed in Chapter 5 below, managing growing transport and housing requirements for the city as a whole, and in a way that does not simply repurpose commercial space into residential space, will be a critical element of supporting London's status as great place to grow a business.

Third, London businesses report challenges in accessing funding for growth. High-growth, innovative firms often have uncertain future cash flows and limited collateral, with much of their investment being in human or intellectual, rather than physical, capital. For instance, life sciences start-ups seek to capitalise on scientific innovations coming out of top universities, but may have limited physical assets at the outset. They are much more likely to use equity-based financing of one sort or another than the average small company. The UK has been less strong in equity financing than the US for a long time: for example, banks drive only 19% of external long-term financing in the US, compared with over 80% in the UK[71].

London ranks behind California and New York on the availability of mid-level growth capital[72]. The two US hubs are supported by a strong, risk-tolerant investor culture that provides six times as much growth capital investment as the UK. Only 20% of VC deals in London go to Series B or later, compared to 28% in New York and 34% in San Francisco [figure 21].

The vote to leave the EU may further reduce the availability of funding for R&D and scale-ups. Funding from the EU comes in three main forms - loans, grants and equity capital, with the final two being especially important for researchers and innovative SMEs. The European Investment Fund is currently a material source of growth capital, investing €2.3 billion in UK-based VC firms between 2011 and 2015[73] (accounting for a third of all such investment). In addition, the UK is one of the largest recipients of EU R&D funding for universities and innovative SMEs, through programmes such as Horizon 2020 (a research and innovation programme focused on translating research into commercial applications). The country received €8.8 billion out of a total of €107 billion allocated in 2007-2013[74]. Similarly, the London Enterprise Panel has been allocated £584 million from the European Structural and Investment Fund to create jobs and support business growth in London[75]. Maintaining or replacing this funding will be essential to sustain London's strength in innovation. In the event of repatriation of these funds following EU exit, securing London's share of investment will be a priority.

[71] TheCityUK, **Alternative finance for SMEs and mid-market companies**, October 2013
[72] EY, **Fintech – on the cutting edge, 2016 ; Pitchbook, Annual VC Funding Report**, 2015
[73] Financial Times, **Brexit leaves question mark over start-up money**¸ August 2016
[74] Royal Society, **UK Research and the European Union**, 2015
[75] https://lep.london/european-structural-investment-funds

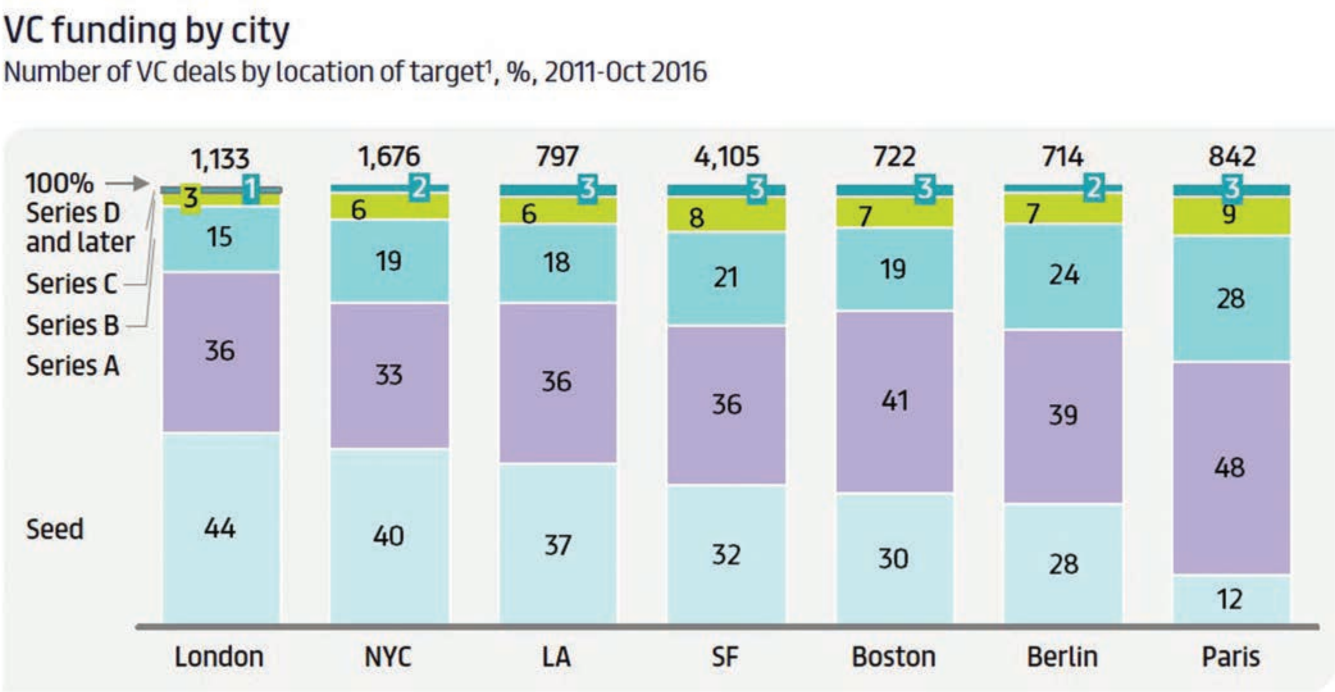
A global leader in international tourism

Tourism represents over 5% of London's GDP and accounts for 280,000 jobs across the capital, which attracts the most international visitors of any city in the world[76]. There has been significant growth in the tourism industry, with 34% more international tourists visiting London compared with 2005, and with their spend increasing even faster. Tourism is a particularly important economic opportunity for London because the sector drives strong growth in relatively accessible, low-skilled jobs that can help address employment challenges for Londoners in the context of an economy that is shifting to higher productivity overall.

Sustaining this strength

Globally, there is every reason to expect strong tourism growth to continue: the number of international tourists is expected to double by 2036, driven by continued growth from European countries, especially Eastern Europe, and by Asian countries reaching income thresholds where international travel expands significantly[77].

Figure 21



1 Totals include all announced VC deals, but breakdown includes only deals where funding round is disclosed, representing between 37% and 62% of total deals
Source: Capital IQ; team analysis

[76] Euromonitor, **Top City Destinations Ranking**, 2014. Hong Kong and Macau treated as part of China for the purposes of this analysis
[77] World Tourism Organization, **Tourism Towards 2030: Global Overview**, October 2011

Figure 22

SOURCE: Euromonitor, Top 100 City Destinations Ranking, 2016. Hong Kong Tourism Board. Macau Government Tourism Office

Early signs after the EU referendum look positive for the tourist industry. A month after the referendum, the pound had dropped by 12% against the dollar, during which time period UK tourist business experienced an increase in forward bookings of 18% from overseas visitors and 21% from domestic visitors[78]. Tax-free spending in the UK by overseas visitors also increased by 7% in July 2016 compared with the previous July[79]. However, it is unclear how long apparent currency-related benefits will last. Further, the industry potentially faces the long-term challenge that 35-40% of the hospitality and tourist industry workers are from the EU, 94% of whom would not meet current Tier 2 visa requirements for non-EU overseas workers[80].

Implications for London's economic priorities

- London has already established a unique position as the global hub for talent, business, finance and global visitors, but this could be put at risk by national policy on both immigration and Europe.

- London has an opportunity to establish itself as a global capital for technology, creativity and entrepreneurship, but to gain maximum economic benefit it needs to address the gaps in skills and funding that make it challenging for businesses to grow.

[78] VisitBritain, **Brexit - the possible impact on UK Tourism**, July 2016
[79] Global Blue, **UK's Brexit FX boon**, August 2016
[80] Financial Times and Oxford Migration Observatory, **Most EU migrants in UK would fail visa rules in event of Brexit**, June 2016

05.

STRAINS TO ADDRESS

Strains to address

Sitting alongside the strengths that London needs to sustain and enhance are economic weaknesses that need to be tackled. Many of these are, in part at least, consequences of London's success, where a growing population has driven up costs, particularly housing, led to an intensely competitive labour market and strained city infrastructure. The uncertain global economy and the challenges stemming from the referendum result make the task of addressing these strains even more urgent.

The following weaknesses need to be addressed head on:

• London has **a growing infrastructure gap across multiple areas**, with weaknesses in housing and transport that are worsened by fast population growth, coupled with slow progress on infrastructure priorities that businesses see as critical to future performance, particularly international and digital connectivity;

• London has poor levels of **labour market inclusion**, as lower-skilled workers compete in a highly competitive labour market, face rising living costs, and are seeing increasing automation shrink the pool of lower-skilled jobs;

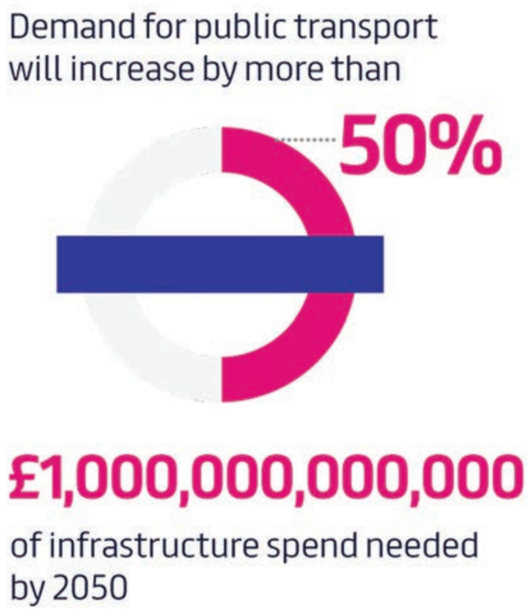
• London has seen **uneven development across the city:** the challenges of inclusion are dispersed across the city and economic growth has historically been slower in outer London than the central zones; and

• London has **limited capacity to invest and deliver**, as London has much lower fiscal and political autonomy than other international cities, limiting longer-term planning and multi-year public investments.

Each of these weaknesses is discussed below. Priorities in terms of potential actions to address them are explored in more detail in Chapter 8.

A large infrastructure gap across multiple areas

London's population is projected to grow to over 10 million people by 2036, creating a large gap in the basic infrastructure of the city. There will be a need for at least 49,000 additional homes a year and an increase of more than 50% in trips by public transport if this growth is to be accommodated successfully[81]. Even before this growth, housing and parts of the transport network are already stretched beyond capacity.



[81] London First, **Homes for Londoners: A blueprint for how the Mayor can deliver the homes London needs**, 2016; Greater London Authority, **Long Term Infrastructure Investment Plan for London, Progress Report**, March 2014

Some 54% of businesses rank housing as their top concern, followed by transport investment at 48%[82]. Housing costs are the fastest-rising concern for businesses and today 73% of London's businesses think London's housing supply and costs are a significant risk to the capital's economic growth[83].

Each of these areas is discussed below. Of course, they do not stand independent of each other: in particular London and the South-East would benefit from an integrated approach to domestic transport, international transport and housing development.

Housing

Median London house prices in 2016 were over 14 times median London earnings, compared to about four times in 1997[84]. The trend was temporarily slowed by the financial crisis but rises have continued: average London house prices in 2015 were over 50% above the pre-crisis peak in 2007[85]. House prices in London are in part a reflection of the city's desirability as a place to live and to invest. However, they are also a reflection of a long period of under-building and supply constraint.

London completed less than 28,000 new homes in 2015 against a target of 49,000, set to accommodate projected increases in population to over 10 million by 2036. There is limited scope to improve supply by either filling empty homes (less than two per cent of London's homes are empty today[86]) or shifting space from commercial use, which risks simply pushing the problem over to business costs. New homes have to be built.

The economic risk to London is significant. High housing costs reduce the city's ability to attract talented people, particularly in relatively lower-paying fields such as the creative industries or scientific research. Further rises risk pricing out ever-larger proportions of London's labour force. For example, 49% of London employees say they would be likely to consider moving out of London if house prices and rents continue to increase at current rates[87]. London's limited housing supply also imposes opportunity costs from the missed benefits of people living and working closer together.

Transport across London and the South-East

Effective transportation is critical to the core strength of London and the South-East as a place where many economic opportunities exist in close proximity to each other. These transport improvements matter to economic growth because they support jobs growth in existing areas by improving commuter access (whether through increased speed, reliability or comfort) and because they drive job creation in new areas (for example, in the residential services economy surrounding newly viable areas of commuter housing). The economic impact at stake is large. In 2014, 1.26 million people travelled into London's Central Activity Zone each day on services close to (or over) capacity in most cases[88]. Assuming this number had grown by 18% in 2036 in line with London's population projections, over 200,000 jobs would be at stake from not having the transport in place to support commuter growth. The Underground is also facing increasing demand – the network carries 4.8 million passengers a day and is growing at 3.4% annually, leading to severe overcrowding at peak times[89].

[82] CBI, **London business survey**, September 2016
[83] London First/Turner & Townsend, **Moving Out, How London's Housing Shortage is Threatening the Capital's Competitiveness**, September 2014
[84] ONS, **Median earnings – gross annual pay**, 2015
[85] ONS, **Average house price by borough**, 2015
[86] Department for Communities and Local Government, 2016
[87] London First/Turner & Townsend, **Moving Out, How London's Housing Shortage is Threatening the Capital's Competitiveness**, September 2014
[88] TfL, **Travel in London Report 8**, 2015
[89] TfL Impact Assessment on Congestion Charging, 2014

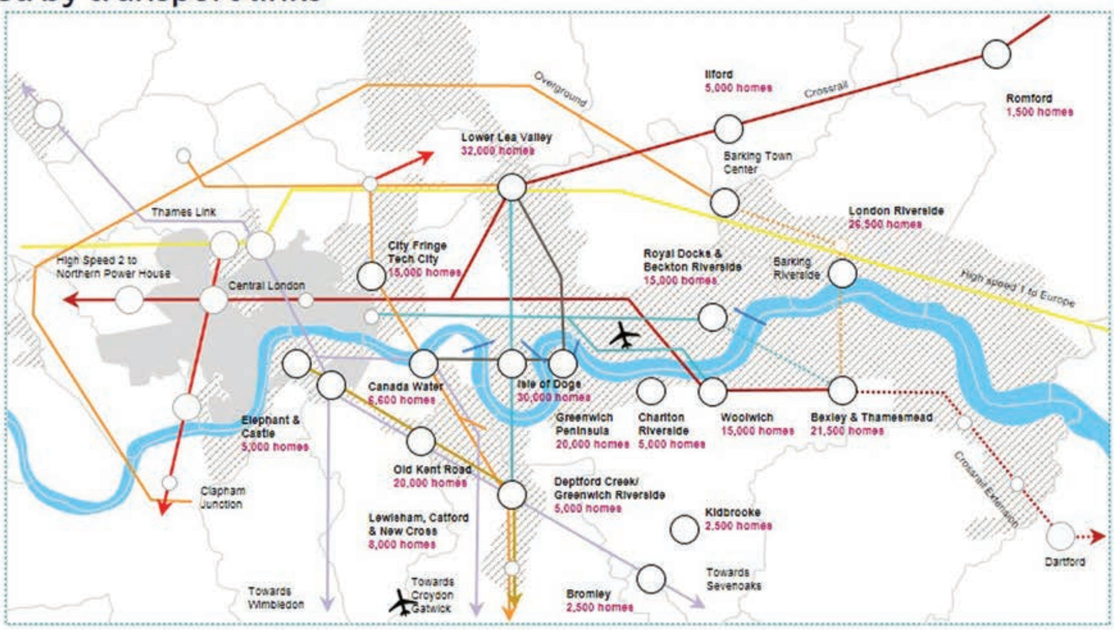
Despite some very significant investments, such as Crossrail, London's rail and tube network faces a lack of capacity, alongside rising demand. London's roads are struggling to cope with growing traffic, including on local roads; congestion is now close to pre-Congestion Charge levels in central London and average traffic speeds are slowing (from 8.9mph in 2012 to 7.4mph in 2016)[90].

There are a number of gaps to fill: for example, additional rail and tube capacity to cope with a growing population, as well as new road and rail links to improve connectivity to areas of new housing and jobs growth, both inside and outside London. Better transport links can also be the key to accommodating London's growing population in denser forms of development; the GLA's **City in the East** plan lays out the potential to unlock an additional 260,000 homes in east London through rail and Underground upgrades [figure 23].

Figure 23

City in the East- illustration of selected housing developments unlocked by transport links

NON-EXHAUSTIVE



Source: GLA, City in the East, October 2016

[90] TfL Budget & Business Plan, 2016/17

Lost productivity is another consequence of congestion. By 2030, road commuters will spend 299 hours a year in traffic (the equivalent of 40 working days), up from 250 now. In total, congestion will cost London £9.3 billion by 2030, up by 71%[91].

We have not sought in this document to outline the specific domestic transport projects that are needed to drive growth. The substantial projects that will be needed by 2036 are already being planned, such as the Bakerloo line extension and Crossrail 2, and in Transport for London (TfL) the city has an effective authority to turn plans into delivery. The critical issue, which is discussed in more detail below, is making sure TfL's funding and governance constraints are addressed, to deliver against the region's needs and aspirations. A related concern is the risk of losing access to vital European Investment Bank funding if the terms of EU exit do not maintain equivalence in this area. The sums involved are substantial – for instance, the Bank lent TfL £1 billion for the Crossrail project.

International connectivity

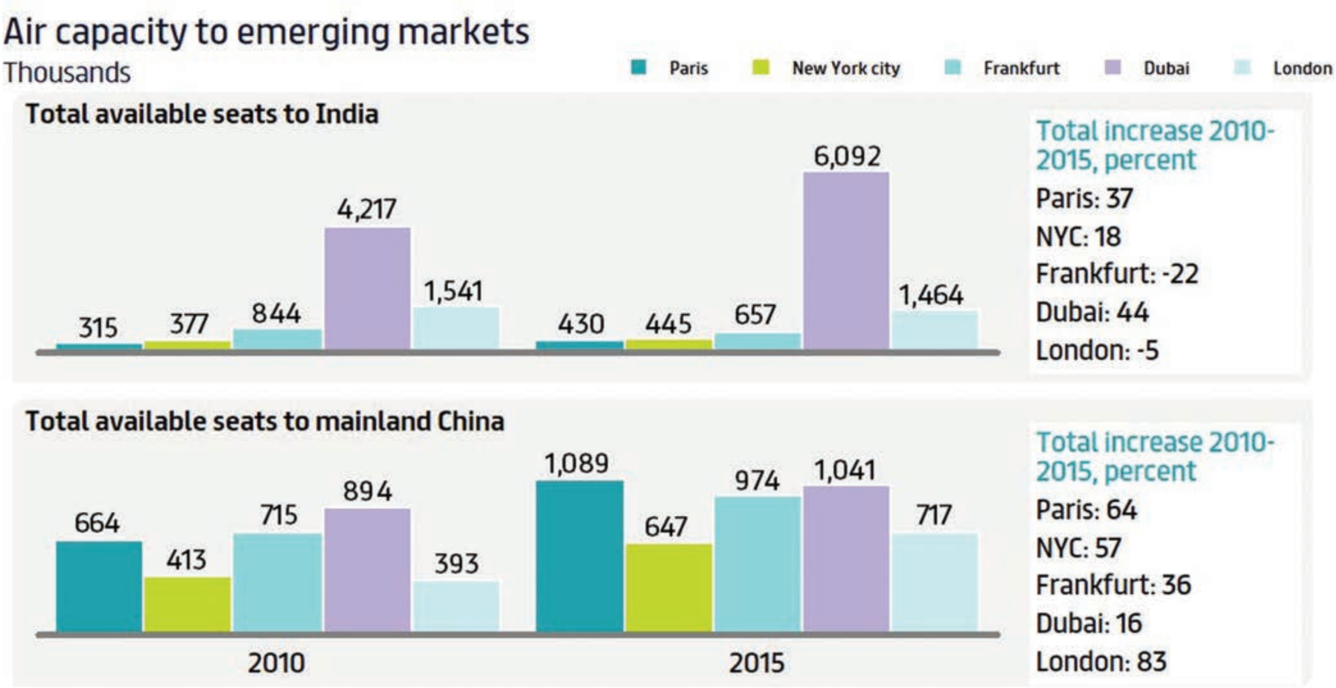
Maintaining London's status as a global hub following the vote to leave the EU will require efficient access to both established and emerging markets. Demand for flights in the UK will double by 2050, particularly to emerging markets, but London's airport capacity has grown much more slowly than European rivals such as Paris, Frankfurt, and Amsterdam[92].

London is much more poorly connected to mainland China than are Paris, Frankfurt or Dubai, although recent growth has seen it overtake New York [figure 24]. This is a challenge for London as a city that is seeking to deepen its connections with the Chinese market, particularly given how much of Chinese growth is coming from second-tier cities (Tianjin, Guangzhou, Shenzhen and Chongqing are all expected to be in the world's top 10 cities for speed of GVA growth between now and 2025[93]). Similarly, capacity on flights from London to India is declining at a time when Dubai, Paris and New York are showing substantial growth.

The Government has announced its intention to formulate a National Policy Statement enabling the construction of a third runway at Heathrow. While this decision is to be strongly welcomed, capacity in the short term remains an issue, and the roadmap for expansion at other airports in the South East remains unclear. Many business leaders have described the need for all airports in the South East to expand, which makes a binary choice between Heathrow and Gatwick only a false choice.

[91] Centre for Economics & Business Research (CeBR), **The future economic and environmental costs of gridlock in 2030**, 2014
[92] London First, **Flight path back to growth: The case for increasing London's air capacity**, 2013
[93] McKinsey Global Institute, **Urban world: Cities and the rise of the consuming class**, June 2012

Figure 24



Note: Airports included: Paris – Charles De Gaulle, Orly; NYC – Newark, JFK, La Guardia; London – Heathrow, London City Airport, Gatwick and Stansted
Source: Diio Mi

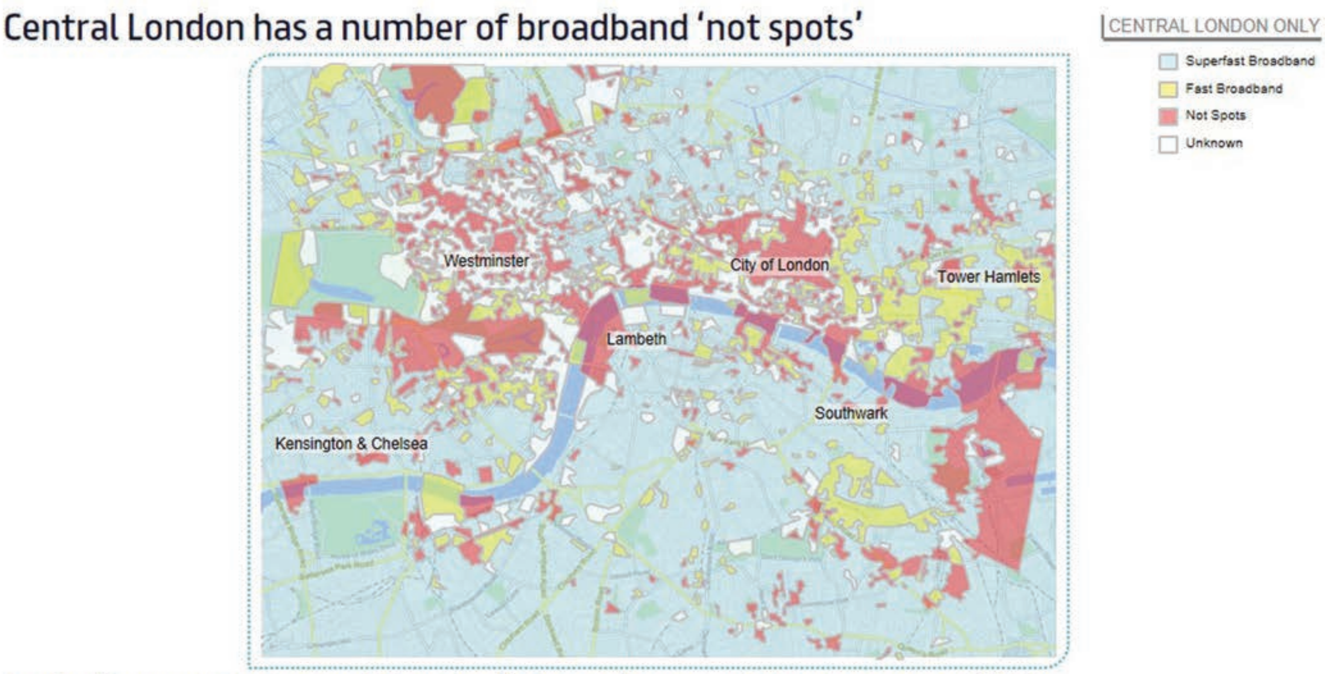
Digital connectivity

London's digital infrastructure is strong in some areas: access to high-speed Ethernet connections is universal for businesses, and consumer costs are competitive. In other areas, however, digital infrastructure and capability is failing to keep up with the pace of change.

Businesses small and large increasingly need faster and more reliable connections, with an additional focus on upload speeds. And whilst London, and the UK more generally, are currently ahead of the EU average on overall digitalisation, continued improvement is slower than the EU as a whole[94] which could lead to London falling behind.

Although London currently enjoys a relatively positive ranking compared to other EU cities, it continues to suffer from infrastructure gaps. In terms of broadband, currently around 10% of premises are missing out on high-speed consumer access; and while business-grade Ethernet connections can be bought, they come at a high price. This is particularly an issue for digital and creative SMEs who rely on affordable, high-speed broadband with high upload speeds. As figure 25 illustrates, these "not spots" are particularly prevalent in the City of London and parts of Westminster and east London. Some parts of outer London also have coverage gaps.

Figure 25



Superfast - Next generation broadband is available to at least 1% of premises (however download speeds may not exceed 30Mbit); **Fast**- Average download speeds at least 10Mbit; Not Spots- Average speeds less than 10Mbit; Unknown- No information available for this postcode

Source: Mayor of London / Ofcom Connectivity Map

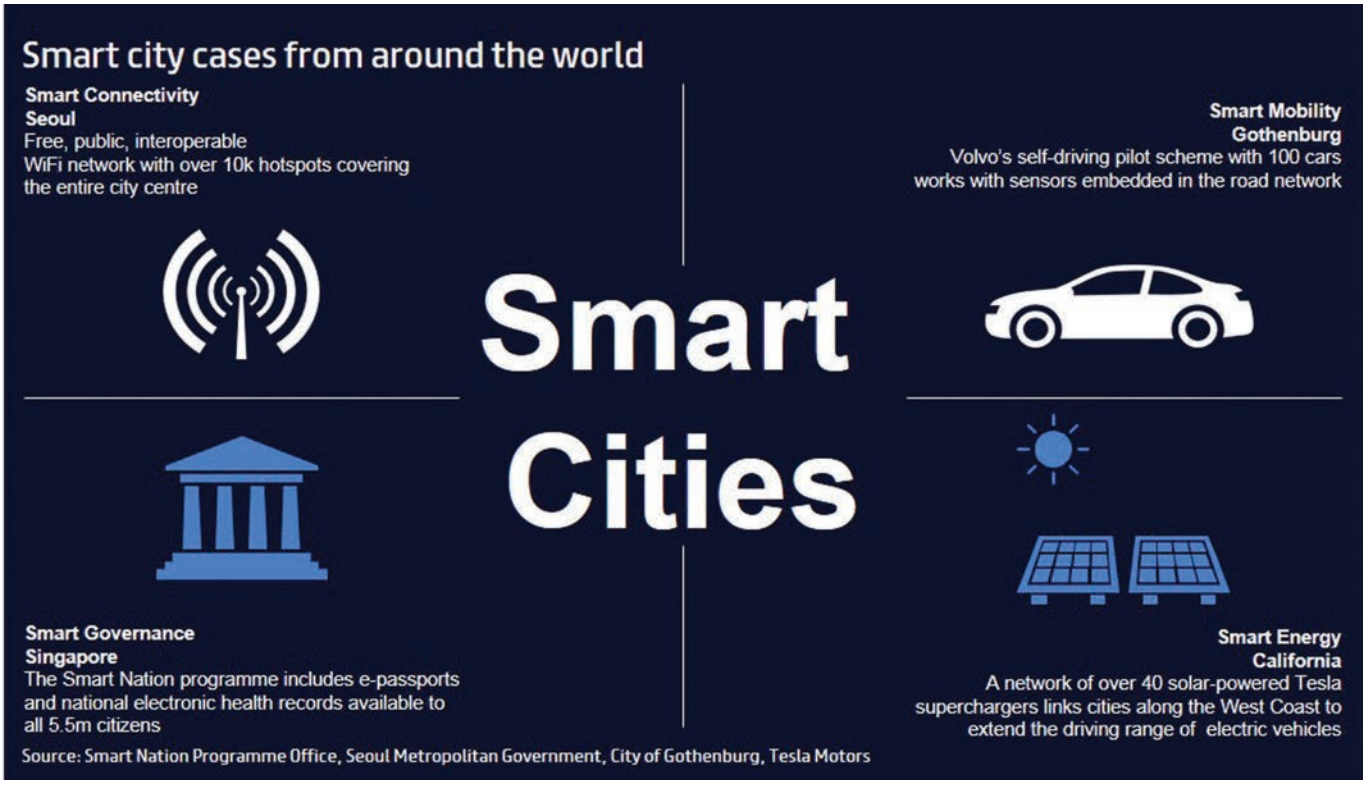
[94] EU Commission, **European Digital Progress Report**, 2016

The picture is similar for mobile coverage: the productivity of Londoners is held back by uneven indoor coverage and frequent dropped calls. London fares poorly even relative to the rest of the UK: it is ranked 13th out of 16 cities for call performance and 11th for reliability[95]. London's Underground still lacks mobile service in tunnels, in contrast to subway systems in Tokyo, Berlin, Shanghai and other cities.

Smart city plans often start with universal public WiFi, however London has a patchwork of WiFi services that are neither ubiquitous in coverage nor interoperable. London also has been slow to lead the way on smart city infrastructure, compared with peers such as Singapore[96].

For example, Singapore's Smart Nation programme is rolling out a network of sensors to collect data on traffic, pedestrian movement, energy use and weather; this information will be used to make public services more efficient and responsive. Figure 26 presents some leading examples of smart city infrastructure from across the world.

Figure 26



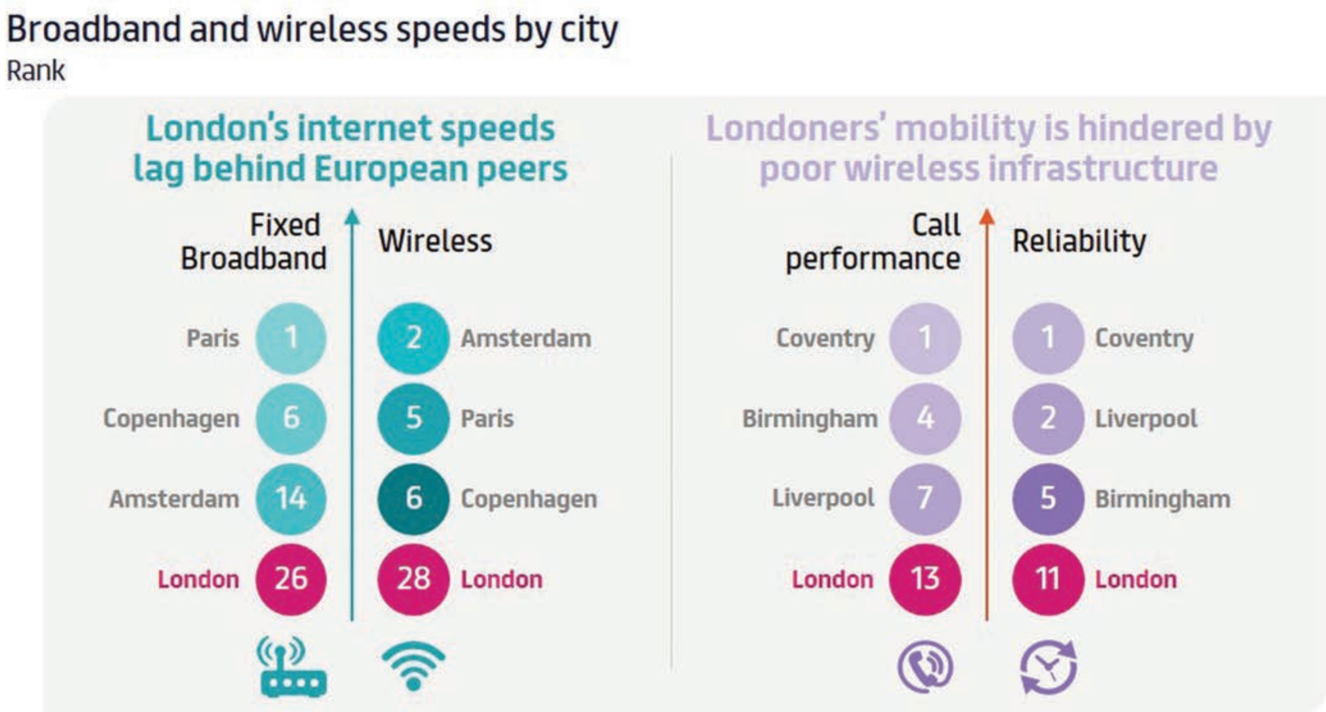
[95] RootMetrics, **Mobile Network Performance in the UK**, 2016
[96] See Executive Office of the President of the US, **Technology and the Future of Cities**, 2016

Smart infrastructure can create efficient cities that enable safe, productive, mobile lifestyles for their citizens. In addition, smart infrastructure can support the growth of innovative SMEs by enabling flexible, digital modes of working. Making city-wide public data freely accessible can help foster private innovation; TfL's opening up of transit data has seen a 58:1 return on investment, enabling innovative applications such as Citymapper[97]. Higher quality of life, enabled by smart infrastructure, can also help attract top talent from across the world.

Getting digital connectivity right could have significant economic consequences. A rapidly rising number of UK firms see broadband and mobile broadband as vital to their future success (over four in five businesses see more reliable fixed and mobile connectivity as crucial to their growth[98]).

Finally, London's digital infrastructure must incorporate the highest standards of cyber security. Two in three large UK businesses were hit by a cyber breach or attack in the past year[99], with online fraud and cyber crime costing the UK economy £10.9 billion in 2015/16[100]. Given the increasing threat of cyber attacks, as well as the significant economic costs associated with them, London must act to improve the resilience of its digital infrastructure.

Figure 27



Source: European Digital Cities Index 2015; The best and worst UK cities for mobile performance, RootMetrics 2016

[97] Open Data Institute, **What is open data?**, retrieved November 2016
[98] CBI/AECOM Infrastructure Surveys 2015
[99] Government Cyber Security Breaches Survey 2016
[100] Get Safe Online/ National Fraud Intelligence Bureau

Labour market inclusion

Although top talent is a key strength, lower-skilled workers are not benefiting significantly from London's growth today and London faces challenges from both unemployment and in-work poverty. Despite recent improvements, London has the highest youth unemployment rate outside the North East and an unemployment rate above the UK average. Meanwhile the number of people in in-work poverty[101] increased by 70% over the last decade. Almost 700,000 jobs in London pay below the London Living Wage, a number that has increased continuously for five years. Overall, London has 27% of people living in a low-income household after housing costs are taken into account[102], compared with 20% in the rest of England. Most low-income households are renting privately (39%), and this group is growing[103].

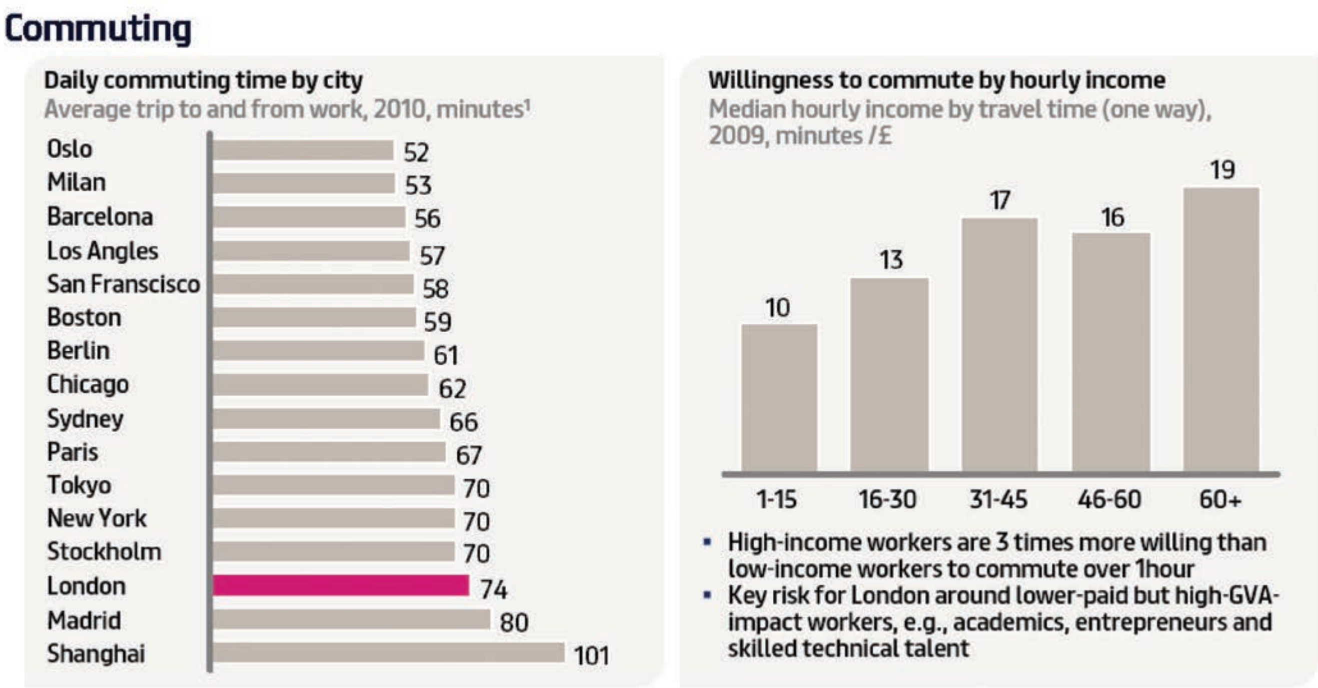
For low-income Londoners, London's labour market is challenging to navigate. Those made redundant by progressive automation[104] or downturns struggle to retrain or access vocational routes into middle-skill jobs; others fail to participate in the labour market due to a lack of basic training.

Current education and training efforts in London do not sufficiently address the challenge of raising employment levels and productivity to improve inclusion. Secondary education is insufficiently vocational[105], leading to skills mismatches that lower labour force participation. The further education sector does not deliver the accessible, high-quality courses required to train Londoners both in and out of work. In circumstances in which there are relatively few large suppliers, it is cost effective for employers to invest in training, such as the purpose-built Tunnelling and Underground Construction Academy in Ilford. However, this is not often the case.

Low-income workers are also affected most strongly by another side effect of London's success – London's rising housing costs. Lower-income workers are particularly affected by increases in rent and declines in affordable housing options because high commuting distances and costs are not easily combined with low-paying jobs, as figure 28 illustrates.

[101] Defined as people living in low-income households despite having at least one member of the household being in work
[102] Defined as households with a net household income that is less than 60% of the national median income
[103] Aldridge et al, **London's Poverty Profile**, 2015
[104] McKinsey & Company, **Four fundamentals of workplace automation**, 2015
[105] CBI, **A better off Britain**, 2014

Figure 28



1 Sydney: 2012, U.S. & Tokyo: 2011, Canada & Shanghai: 2010, Europe: 2009
Source: Scorecard on Prosperity, Toronto Board of Trade, 2014; Labour Force Survey, ONS, 2009

A further aspect of labour market inclusion is female participation in the workforce. There is currently a large gap between male and female rates of employment (78% against 68%). Nationally, over half of parents with children under the age of two say they either struggle to re-enter employment after a gap, or take on additional hours[106]. While insufficient childcare provision is a challenge across the UK, London's nursery costs are over 30% higher, and parents' long commutes exacerbate the problem[107]. This is reflected in a maternal employment rate in London that is 15% below the national average. Improving labour market inclusion among women is therefore a pressing concern.

Finally, the strains of success that London has already seen are likely to increase as technology makes the labour market more flexible. One example is the growth of the gig economy which covers 20-30% of working age professionals, allowing some more independence and a supplementary income but condemning others to low security or having to work irregular hours to make ends meet[108]. Another example is the progressive automation of tasks currently undertaken by workers. Some 60% of occupations are set to have 30% or more of their activities automated over the coming decades[109]. Losers from these changes face lower wages, harder work or unemployment.

[106] CBI, **A better off Britain**, 2014
[107] Family and Childcare Trust, **Annual childcare cost survey**, 2015
[108] McKinsey Global Institute, **Independent Work**, 2016
[109] McKinsey Global Institute, **Future of Work**, 2015

This poor performance on inclusion puts economic growth at risk. First, because unemployed or underemployed Londoners represent missed opportunities for the economy to grow; and second, because London will need to maintain social cohesion in order to remain an open, liberal city that attracts people and investment from around the world.

Uneven development across the city

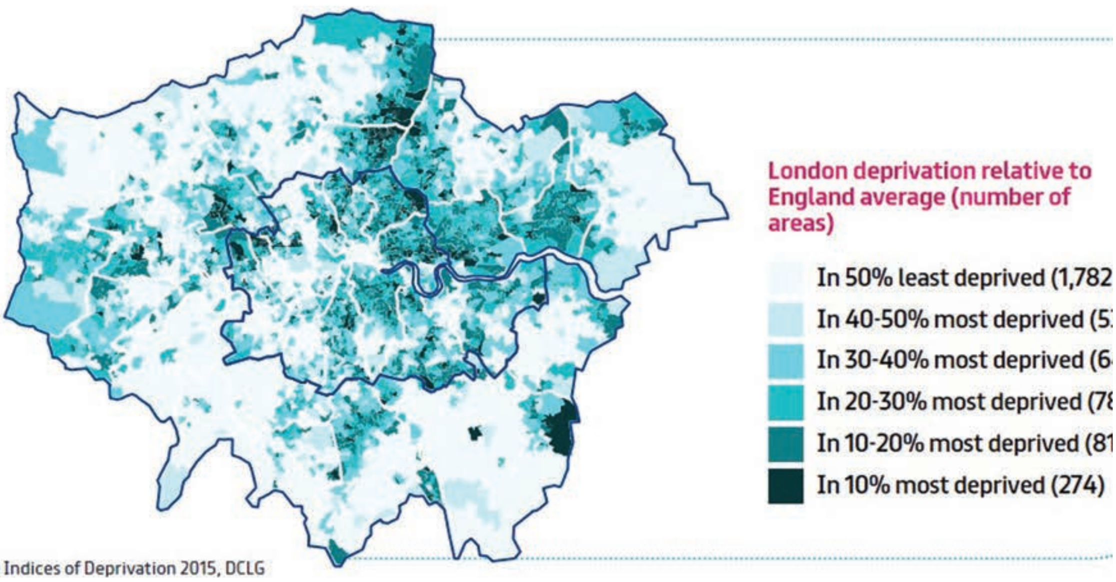
The challenge of inclusion is not uniform across London. There are pockets where the challenges are more intense, particularly in areas with high concentrations of relatively low-skilled workers and high levels of social housing. This reflects the complexity of London's economic development: the city is a patchwork of prosperous and deprived areas, sitting cheek-by-jowl, each with its own economic make-up. There is enormous variation in economic performance across and within boroughs.

Figure 29 maps deprivation across London and shows the different policy responses required in different areas. For example, there are inner London boroughs which, despite having many jobs in some parts of the borough, still have high unemployment, such as Tower Hamlets and Southwark. These are areas where greater focus is needed to help local residents access and compete for jobs. There are also boroughs that face both high unemployment and a lack of local jobs, such as Barking and Dagenham. The challenge here is the integration of the local economy with the city as a whole, and maximising the benefits from agglomeration economies [See Box 2].

Figure 29

The pattern of deprivation in London is dispersed and includes significant inner London deprivation

Index of Multiple Deprivation for LSOAs (Lower Super Output Areas) in London



Source: English Indices of Deprivation 2015, DCLG

Box 2: Benefits of Agglomeration Economies

British cities are 14% more productive than non-city areas[110], and London is 43% more productive than the average of the other regions in the UK[111]. This disparity reflects the significant productivity gains that arise from increased proximity of people and firms[112]. This phenomenon is called agglomeration, the benefits of which fall into three main categories[113].

1. Matching: Reducing search frictions in the labour market, making it easier for different types of worker and firms to find each other, and therefore increasing the likelihood of a productive match.

2. Learning: Providing greater opportunities for people and firms to exchange ideas and information, known as 'knowledge spillovers', both through vertical learning (e.g., when firms learn best practices from their competitors through observation) and horizontal learning (e.g., when firms adopt innovations from their suppliers or gain market information from their customers).

3. Sharing: When large numbers of firms or workers benefit by drawing on a common pool of resources (e.g., sharing of public goods and/or infrastructure such as heating or public transport) or by investing their resources in joint ventures to mitigate risks or increase expected returns (e.g., joint R&D efforts).

London should look to make the most of agglomeration through multiple policies, which include:

• Housing: build more homes to allow more people to live in the city, and at a higher density;

• Transport: improve infrastructure to add capacity, reduce commute times and allow people to travel more easily to high-density workplaces;

• Places of work: encourage clusters and hubs (e.g., Tech City), through deliberate planning, funding, and tax breaks; and

• Migration: minimise restrictions on London migration to facilitate the benefits of a larger, denser and more fluid labour market.

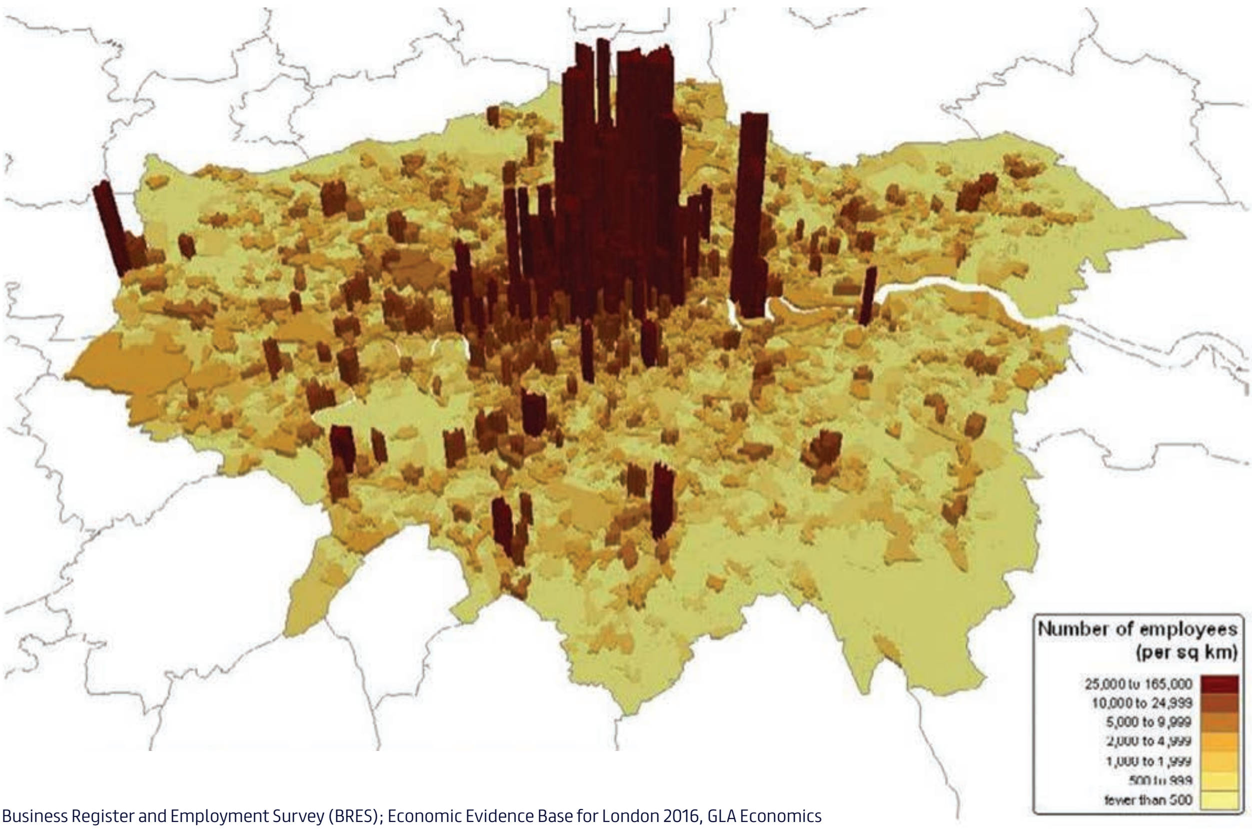
[110] Centre for Cities, **Building the Northern Powerhouse: Lessons from the Rhine-Ruhr and Randstad**, 2016
[111] McKinsey analysis of ONS data; GVA per hour in NUTS1 areas, 2014 (except Northern Ireland which uses 2013 data)
[112] See e.g. Hsieh and Moretti, 2015; Rice, Venables, Patacchini, 2006; Glaeser, 2010
[113] Manchester Independent Economic Review, **The Case for Agglomeration Economies**, 2016

Central Activities Zone

A substantial proportion of London's economic activity is concentrated in the Central Activities Zone (CAZ). With only 275,000 residents, the area accounts for 1.7 million jobs, a third of London's total. It also generates 44% of London's GVA and over 10% of the GVA of the UK as a whole. The CAZ is the core of London's global success.

The CAZ has been increasingly complemented over recent years by a new centre around Canary Wharf in east London. As a result, the two centres of economic activity in London – the City, and the area around the Isle of Dogs – are merging into one contiguous area. This natural expansion of the CAZ is yet to be reflected in the London Plan, but figure 30 illustrates how the two peaks of employment described above are close to convergence. The expansion of the CAZ highlights the importance of agglomeration to London's economic success, and the role of effective transportation links in allowing workers to commute into the CAZ from outer London.

Figure 30



Source: Business Register and Employment Survey (BRES); Economic Evidence Base for London 2016, GLA Economics

Limited capacity to invest and deliver

Compared to its international peers, London has much lower fiscal and political autonomy and is highly dependent on national policies and funding. For example, London government funding is highly dependent on spending allocated from central government: 74% of GLA and borough expenditure is based on intergovernmental transfers. This is considerably more than the proportion for key peers such as New York(31%) and Paris (18%)[114].

London also has less fiscal and political autonomy than other parts of the UK. It has a larger population than Scotland and Wales combined, but a much lower level of devolved powers than either. At the city/conurbation level, Greater Manchester now controls elements of welfare spending, business support and skills funding, and health and social care budgets.

London government has responsibility for only one tax, council tax (and even this is in practice highly regulated by central government), whereas peers retain and set many more, enabling better long-term planning and greater flexibility. Grants from central government are volatile, making it difficult for the GLA and London's councils to plan far ahead. Furthermore, roughly three-quarters of the grants received are earmarked for specific purposes, limiting London's economic freedom of action[115].

Devolution to London could benefit jobs and growth for three reasons[116]:

• better political and economic incentives to increase output;

• a regulatory fiscal regime configured to suit London's needs; and

• lessons from local policy delivery better able to inform policy design.

The London Finance Commission, a body established by the Mayor, has published a number of analyses and recommendations to help improve London's tax and public spending arrangements, many of which have wider applicability to other UK cities. Some of the priorities for London are discussed in Chapter 8.

[114] Slack, Enid, **International Comparison of Global City Financing**, 2013
[115] See GLA and Council Annual Statements of Accounts for details
[116] London Finance Commission 2, **Interim Report**, October 2016

Implications for London's economic priorities

• London's agglomeration economy needs fast and integrated development of both housing and transport in order to cope with its rising population, spread growth to additional areas of the city, and to ensure rising costs do not put economic growth at risk.

• London must prioritise global openness and innovation by investing digital connectivity, and ensuring that planned and future upgrades to air connectivity are delivered in a timely manner.

• London faces a growing challenge around inclusion, covering both unemployment and in-work poverty, and needs much greater focus on ensuring lower-skilled Londoners can successfully compete in a rapidly changing labour market.

• The London Finance Commission is arguing for additional powers and resources at the city level in order to address these issues, to compete more effectively with international peers, and in particular to allow greater long-term investment.

06.

LONDON AS PART OF THE UK

The relationship between London and the rest of the UK

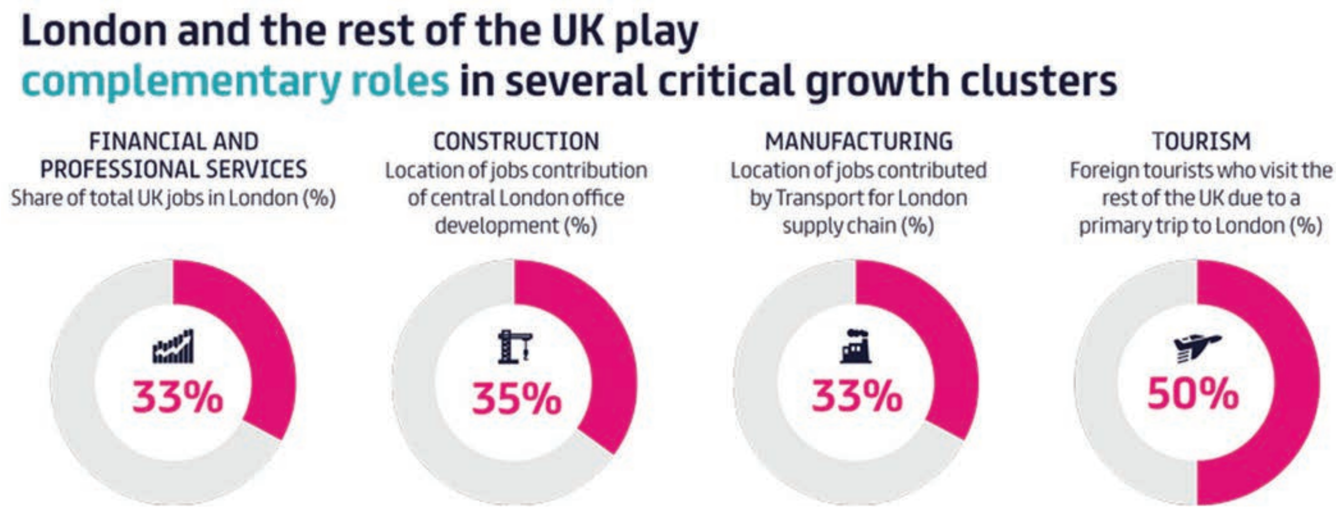
London's economy is deeply intertwined with that of the rest of the UK. As a global business hub, London serves the country as a whole as the principal location for major corporate centres; as a gateway for international talent, tourists, and investment; and as the location for the provision of advanced services to many national industries. London's identity and attributes are also deeply integrated into UK business culture and reputation: London is a key driver of the UK's business brand.

Equally, the rest of the UK provides London with a broad range of services, and trade relationships are strong. London and the rest of the UK provide complementary locations within particular UK clusters and act as sources of talent for each other. There are strong labour flows between London and the rest of the UK. London is also a net exporter of government revenue, contributing approximately £34 billion in fiscal surplus and therefore, supporting the broader UK economy and public service provision for all citizens[117]. Each of these points is explored in more detail below.

Trade relationships

While there is no official source for intra-UK trade statistics, the GLA estimates London's exports to the rest of the UK and the rest of the UK's exports to London at around £300 billion each[118]. One example of the strong trade relationships between London and the rest of the country is TfL's supply chain, where two-thirds of the jobs driven by its investment are based outside London. The jobs created by the construction of new office space in London are spread across the UK in a similar proportion [figure 32].

Figure 31



SOURCE: TheCityUK "Key facts about UK financial and related professional services," 2016; London First, "Building London, Building Britain", 2016; TfL Annual Report 2012/13; Oxford Economics, "London's Linkages with the Rest of the UK, 2004

[117] City of London Corporation, **London's Finances and Revenues**, 2014
[118] Greater London Authority, **Growing Together II: London and the UK economy**, 2014

UK clusters

London and the rest of the UK play complementary roles in a number of critical industry clusters. For example:

• the UK's successful life sciences sector relies on outstanding academic institutions and teaching hospitals across the greater South-East including London, but private-sector employment is more significant for areas outside the capital [figure 32]. London acts as a hub for funding the translation of world-leading research from clusters such as Oxford and Cambridge into commercial applications;

• London and other UK regions play complementary roles in the UK's provision of financial services: two-thirds of the UK's employees in financial and professional services are located outside London, with notable clusters in many UK locations. For example, US bank JP Morgan has a regional HQ in London and is also the largest private-sector employer in Dorset with 4,000 employees[119];

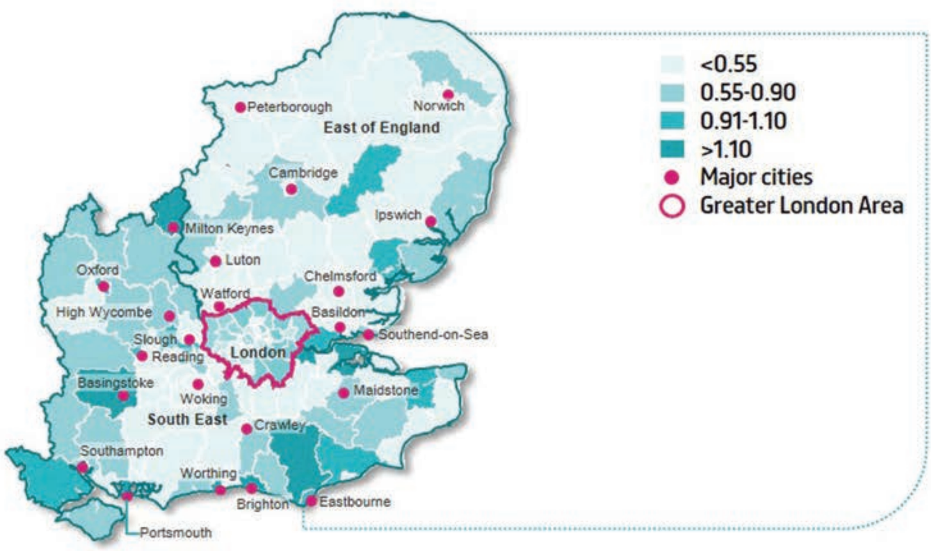
• companies founded in London then create growth and employment in other parts of the country: for example, Land Securities has built major shopping centres in Kent, Portsmouth and Leeds, each worth more than £200 million; and

• company headquarters are concentrated within London, but there are strong spill-overs into the broader South-East, reflected in a large number of company headquarters located just outside London's boundaries [figure 33].

Figure 32

The spread of the life sciences cluster around London

Share of employees working in life sciences[1] and healthcare, percent

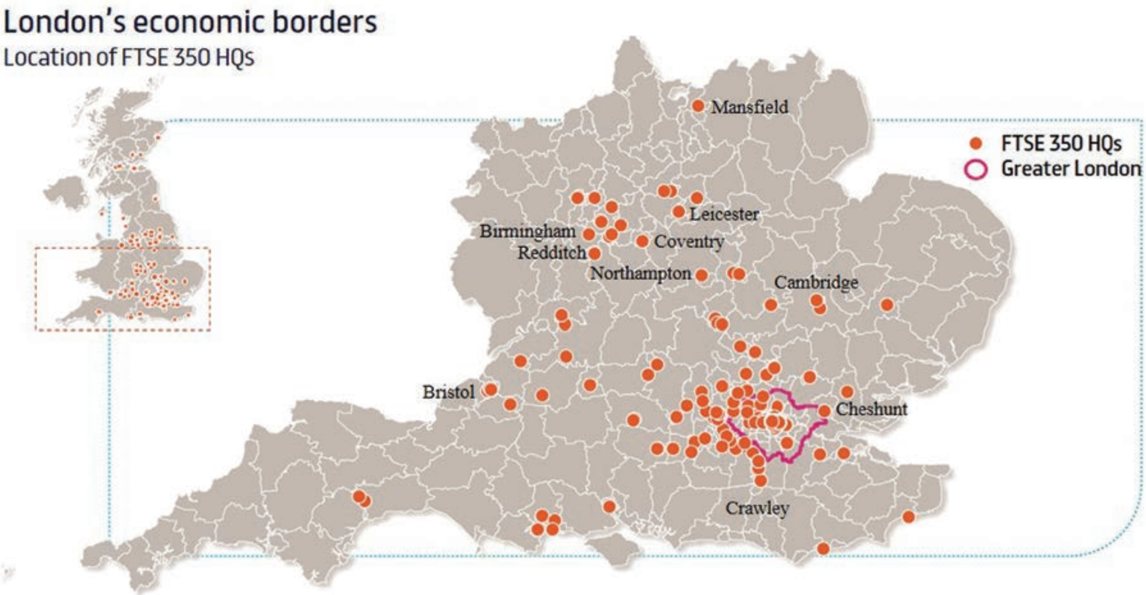


1 Excludes higher education

Source: Inter-Departmental Business Register (IDBR) 2013; GLA; team analysis

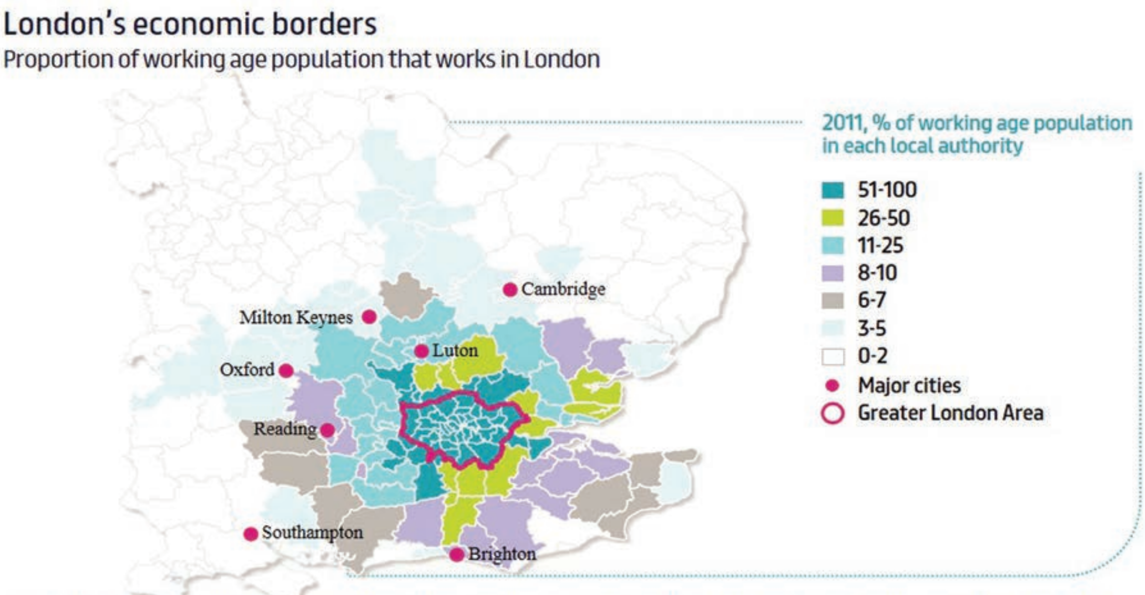
[119] JP Morgan website, November 2016

Figure 33



Source: McKinsey analysis using data from Fame companies database

Figure 34



Source: ONS 2013, Annual Population Survey commuter flows, local authorities in Great Britain, 2010 and 2011, cited in Centre for Cities, Cities Outlook 2014; Oxford Economics, "London's Linkages with the Rest of the UK", 2004

An integrated labour market

London provides employment for 870,000 commuters from outside London, primarily from the South-East. London is surrounded by a ring of areas where more than half of the working population work in London, creating an obvious need for an integrated approach to housing and transport across the greater South-East [figure 34].

Looking beyond commuting, there is a flow of people out of London each year to the rest of the UK, with around 70,000 more people moving from London to the rest of the UK than vice versa[120]. The composition of these flows is complex and changes over time but, in essence, those who move into London are on average younger (16-24 is the only age group showing net migration into London from the rest of the country) and come from a broad spread of geographies; while those who leave London are typically older, more skilled and move primarily to the South-East. This means that while the South-East, East and South-West gain older, highly skilled migrants from London, other regions each have a long-run net loss to London of between 1,000 and 2,200 people a year (averaged since 1975)[121].

These numbers are small relative to the millions of people living in each of these regions, but they are disproportionately young and, potentially, high-skilled. However, figures from the ONS show that people aged 30-39 are leaving London at an increasing rate[121], which could be due to rising house prices for family homes. They are going to a wide range of locations across the UK. This shift demonstrates that the lower costs and potentially higher quality of life available outside the capital can be decisive, particularly for people with children.

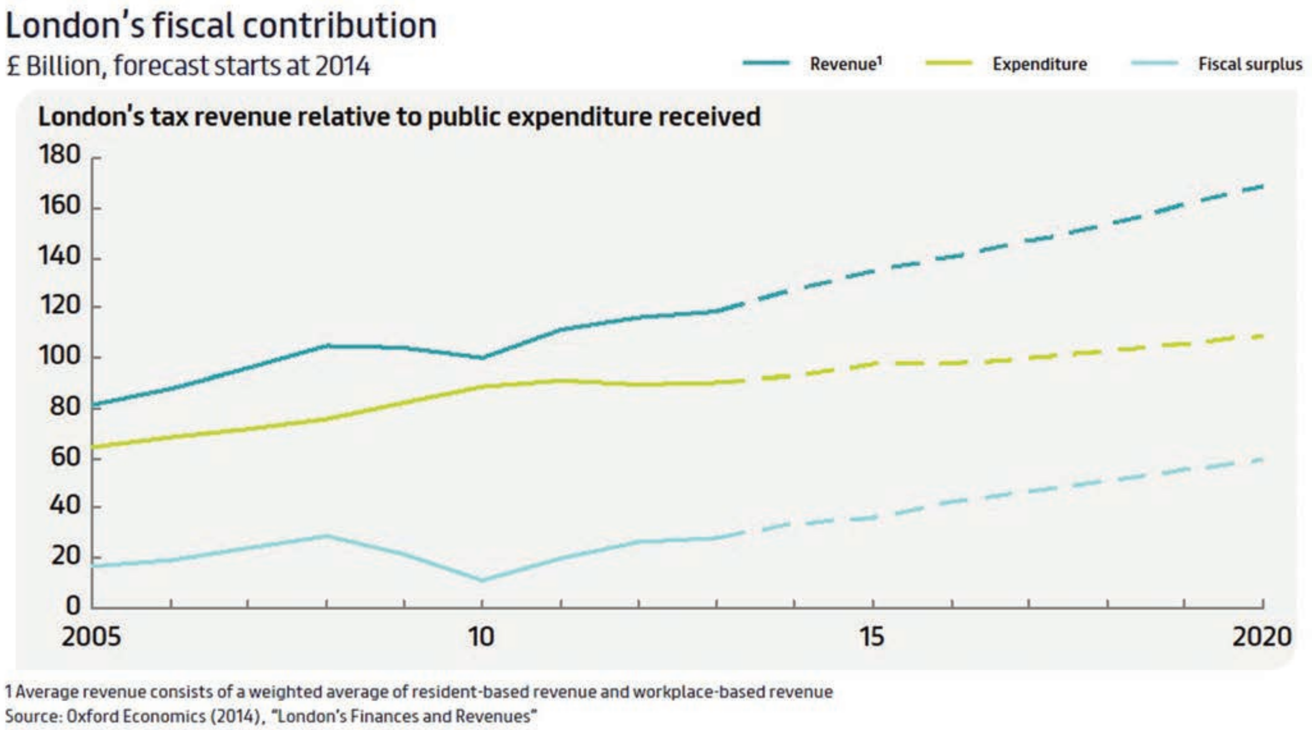
London's role as a magnet for national and global talent also has positive effects on nearby clusters. Scientific researchers, for instance, use transport links in the region to move freely between Oxford and Cambridge, and London, using the funding opportunities that London provides when they seek to commercialise their work.

The fiscal relationship

Finally, London generates a significant fiscal surplus for the rest of the UK, with a contribution of £34 billion in 2014, broadly expected to increase over the coming years [figure 35]. Overall, London's economy increases levels of public investment in the rest of the UK, rather than taking away resources from other areas.

[120] ONS, ONS, **Internal Migration England and Wales**, 2016,
[121] Greater London Authority, **Growing Together II: London and the UK economy**, 2014
[122] See ONS, **Focus on London Moves** and accompanying data tables, 2014

Figure 35



Working more effectively across the greater South-East

The economic linkages described above are particularly significant for the South-East. They do of course create economic opportunity for both London and the South-East. However, they also create practical challenges in driving integrated thinking across the region: for example, in developing the transport network to support commuting from outside London, or in establishing housing targets that could sit either inside or outside London's governmental boundary.

There is also an opportunity to drive local development strategies for areas near London that capitalise on the strengths of both London and its surrounding areas. One example is the work being done on the London-Stansted-Cambridge Corridor to join up and magnify the work of local councils and the relevant Local Enterprise Partnerships (LEPs), and to leverage the connectivity created by the M11, A10 and A1, the two rail lines and Stansted Airport.

A similar approach is being taken by the Coast-to-Capital LEP that includes Croydon, the M23, Gatwick Airport and Brighton, and has been pioneered in the past by the Thames Valley and its various partnership groups along the M4 and the Paddington-to-Bristol rail link. More cross-regional thinking is needed to encourage existing regional bodies to co-operate more closely in understanding interdependencies and developing joint solutions. More incentives are needed to encourage and support such strategies.

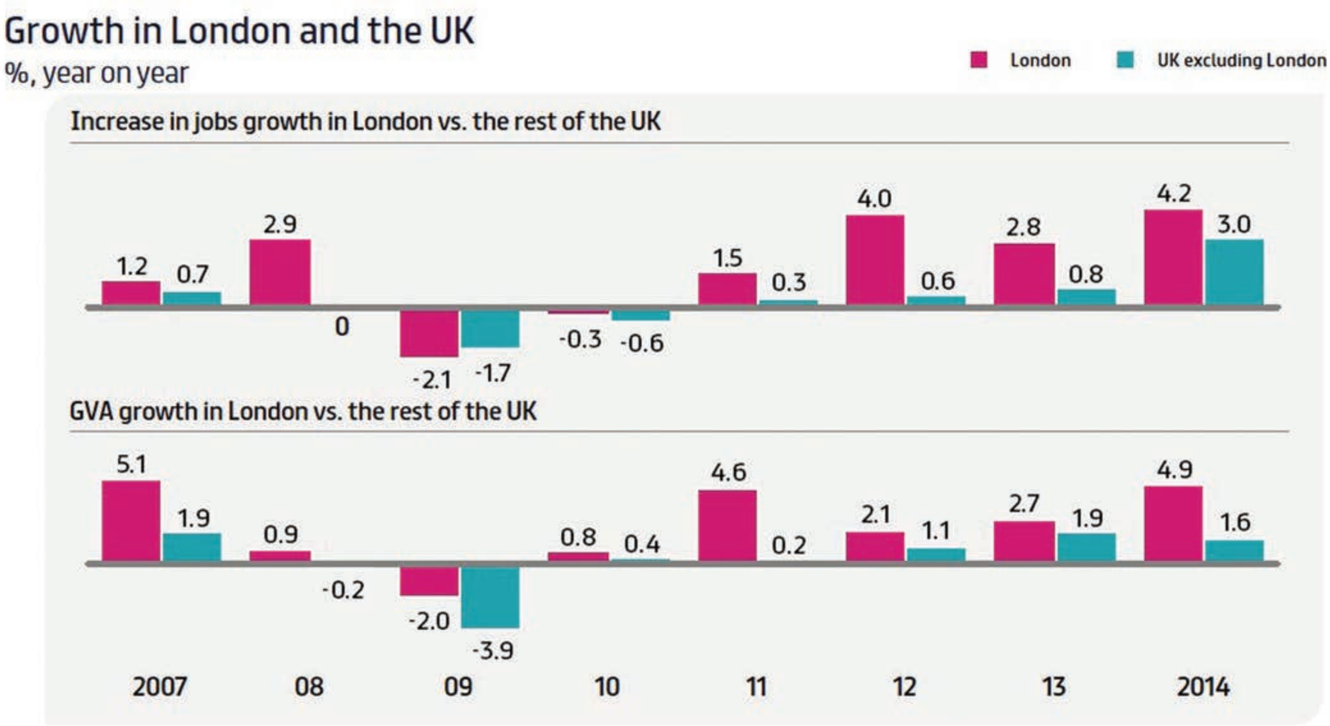
Working more effectively across the UK

London's performance and the UK's performance are highly correlated. Analysis in the GLA's Growing Together report confirms that when London performs well, the national economy tends to perform well and vice versa. However, over the recent past, growth in London has been, on average, higher than growth in the rest of the UK [figure 36]. In part this reflects the reality that the UK's major cities outside the South-East have experienced less strong performance than their counterparts in other European countries such as France and Germany [figure 37].

There are clear Government priorities to accelerate regional growth across the UK. One opportunity for the country as a whole to improve economic performance is through UK cities and regions developing strategies that complement London; and for London to collaborate vigorously with such strategies. This could, for example, be through:

• joint foreign investment strategies for London and other UK cities to attract HQs and middle/back office locations in a complementary way (recognising that there are multinationals who are unlikely to locate their HQs in the UK

Figure 36



Source: ONS Workforce Jobs, ONS Regional GVA outside London, but would be interested in support locations near a smaller HQ);

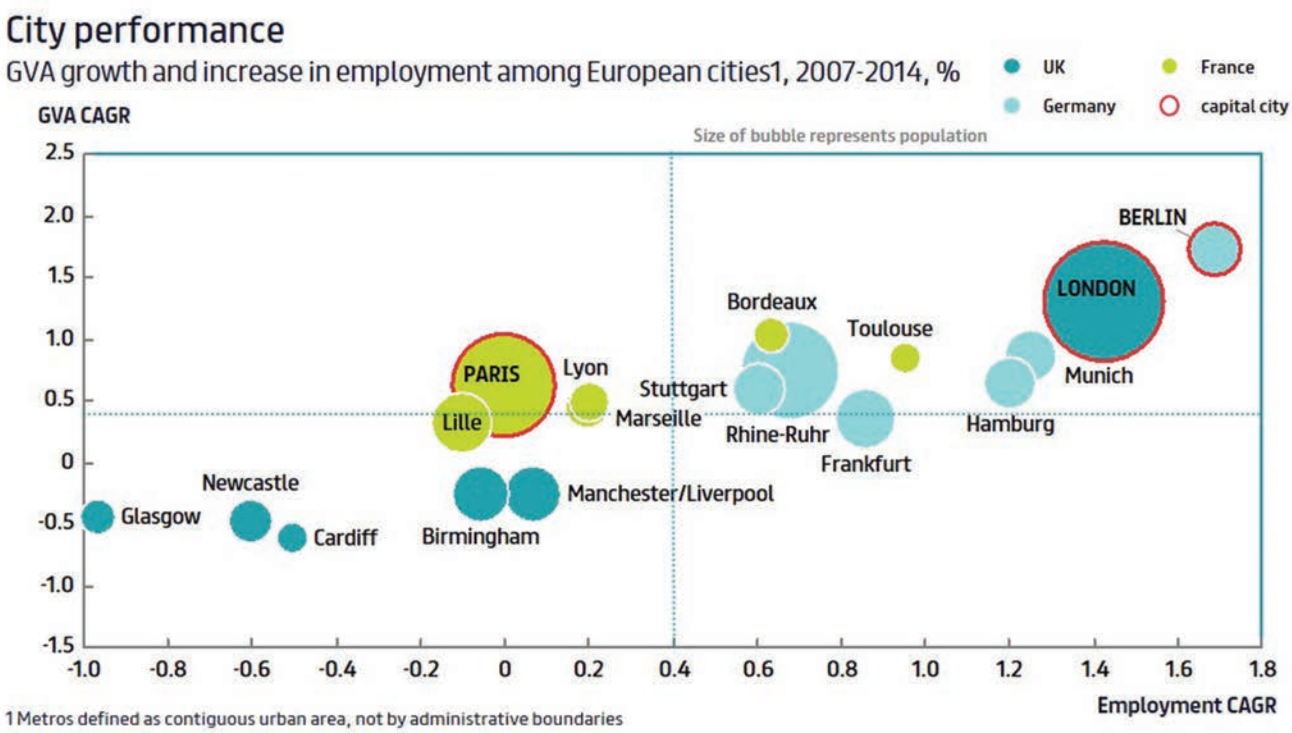
• joint tourism promotion, capitalising on London as the gateway for most tourists visiting the UK, for example, the successful joint campaign by Wales and London;

• more industry-specific cooperation with successful clusters outside London (e.g., Bristol's electronics and tech clusters), and key customers of London (e.g., the UK's construction sector). For instance, London's life sciences hub supports manufacturing jobs in the rest of the UK: the AstraZeneca plant in Macclesfield alone accounts for over 1% of the value of UK exports[123]; and

• more joint advocacy on city devolution, building on the links which are already in place, recognising that increased pressure from other cities for devolution will boost London's case, and vice versa.

It is important that as the Government moves to implement a new and deeper industrial strategy, London's distinctive needs are recognised and it seeks to maintain and increase the benefits that the capital brings to the rest of the UK economy.

Figure 37



1 Metros defined as contiguous urban area, not by administrative boundaries
Source: LSE (2014), "European MetroMonitor"

[123] Office for Life Sciences, **Northern Powerhouse Mapping Tool**, Retrieved November 2016

07.

A VISION FOR LONDON'S ECONOMY

The implications for London's economy

Building on the observations in the previous chapters, we have defined three broad imperatives for London's economy between now and 2036.

First, London should **remain open for business**, securing its position as the leading global hub for finance and talent, building new trading arrangements following the vote to leave the EU and exploiting London's reputation as a centre for tourism and entertainment.

Second, London should **fuel diversity in future growth by capitalising on its strengths in technology and creativity**, improving its ability to scale up entrepreneurial businesses and thereby drive large-scale job creation.

Third, London should **more actively address its challenges around labour market participation, transport, digital infrastructure and governance**, which will become increasingly problematic as London grows.

These themes support each other. For example, London's status as a global hub is fuelled by its cultural and creative strengths, while London's innovation is supported by its role as a magnet for global talent. Equally, London's attractiveness to talent is dependent on its ability to invest in housing and infrastructure while this investment is in turn fuelled by economic growth.

Other global cities face similar challenges. Competitors to London do not, however, face the uncertainty inherent in the UK's exit from the EU, which makes tackling those areas for action that are within our gift a key and urgent priority.

A vision for London's economy in 2036

By 2036, London's economy needs to reflect progress against each of these themes. The existing achievements of the city as the world's leading global hub will need to have been secured and extended, even in the face of EU exit and rising competition. The potential of the city as the world's leading innovation workshop will need to have been fulfilled. The challenges of inclusion, infrastructure delivery and governance, that limit London as a city that works well, will need to have been addressed. If these three goals are achieved then London's economy should meet a broad set of aspirations, defined here as a vision for London's economy in 2036.

A. Staying open for business: The Global Hub

- Attracts and welcomes the best talent from around the world to study and to work
- Is the first choice location for global businesses, whether from mature or emerging markets
- Has a clear lead as the world's most important centre for financial and business services
- Attracts significantly more spend from overseas visitors than anywhere else in the world
- Has an unrivalled breadth of global relationships across Europe, the Americas, Asia and Africa.

B. Fuelling more diverse growth: The Creative Engine

- Is the best place in the world to be an entrepreneur, whether starting up or scaling up a business
- Has the world's strongest collection of academic institutions and uses them to fuel world-beating innovation
- Is the world's capital of culture, reflected in the world's largest creative sector
- Has the world's largest services and software cluster
- Provides an excellent environment for fast-growing firms, with the technical talent and infrastructure to support growth.

C. Addressing weaknesses: The City that Works

- Controls more of its total tax base and has the ability to fund and finance its own long-term investments
- Has a transport system integrated beyond formal city boundaries that stays ahead of rapidly expanding needs across the region
- Builds housing at a rate of at least 50,000 new homes a year
- Creates economic opportunity for all its residents and reduces unemployment to, at worst, the UK average
- Responds quickly and co-operatively to new threats and opportunities, through a well-functioning governance system.

And across all three priorities:

- Works closely with the rest of the UK to generate economic growth across the country as a whole.

How to get there

We have identified a set of specific priorities on which London needs to focus to deliver this vision for 2036. These priorities, three for each major theme, and one cross-cutting, are designed to:

• define the most important areas for action with the highest impact on GVA and jobs (rather than being an exhaustive list of everything that could be done to improve London);

• identify areas of weakness in London's existing plans or progress relative to our 2036 economic vision (not just repeat things that are already being progressed fast enough);

• be based on a clear case for intervention by public and/or private sector stakeholders (not just things that the market will deliver by itself); and

• be long-term priorities that will last over at least a three-to-five year timescale (not just for the next one or two years), and that will serve London well through both political and economic cycles.

Many of these areas are already the focus of existing work. However, we believe that in each of them there is room for a more concerted effort, across all of London's stakeholders, to drive faster change. As a starting point, we have suggested what some of the actions under each of the areas could look like, however these ideas are not a replacement for the detailed and longer-term planning that is now needed. This will require deeper consultation with the relevant stakeholders from across private and public sectors, as well as more time on issue-specific analyses and best practices. Many of the actions require national or even international support and so the Mayor will need to play an important influencing role on this broader stage, alongside being the capital's chief executive.

The priorities in summary

A. Staying open for business: The Global Hub

1. Stay open for commerce and trade: forge new trading relationships with international partners and remain open to investment from across the world.

2. Stay open to international talent: remain open to, and an attractive location for, international talent, complementing efforts to improve Londoners' employability.

3. Protect and grow London's financial and professional services: build on London's status as a global hub for finance and professional services.

4. Boost international travel and tourism. Expand air capacity and exploit London's reputation as a tourist destination, increasing visit frequency and helping the city to serve as a gateway to the whole country.

B. Fuelling innovation and growth: The Creative Engine

5. Strengthen digital connectivity: appoint a new Chief Digital Officer and team to drive improvement in London's digital infrastructure, creating a new strategy to deliver ubiquitous, high-speed, reliable, and affordable digital connectivity, as well as to identify and implement smart city initiatives.

6. Improve funding and support for innovative SMEs: expand access to scale-up funding opportunities for firms with high growth prospects, filling the gap between start-up funding and flotation, underpinned by a forward-looking regulatory environment.

C. Addressing weaknesses: The City that Works

7. Invest in transport infrastructure and services to tackle long-term impediments to growth: enable improved job creation and productivity through investment in the transport network, establishing financing mechanisms that will enable London to invest for the long term.

8. Accelerate housing delivery: change governance and improve incentives, coordination, capabilities and funding across the GLA and the boroughs to substantially increase the new homes built for Londoners.

9. Develop Londoners' employability: dramatically scale up skills efforts to ensure that everyone who grows up in London can access employment in a changing and increasingly competitive labour market.

And across all of these themes

10. Support UK-wide growth: ensure a growing London works ever more effectively, in cooperation with other city-regions, to drive growth across the country.

08.

EXPLORING THE PRIORITIES FROM THE THEMES

Exploring the priorities from the themes

We have identified a set of priority actions for London to take in order to meet its goal for jobs and growth by 2036. These were identified as a result of analysis of the challenges London faces – whether recent, such as the vote to leave the EU, or built up over many years, such as London's housing shortage and congested transport network. They have also been tested through a process of challenge and consultation with London's businesses.

As the power to act is dispersed between national and local leaders, the private sector, the public sector and other stakeholders, successful development and implementation will be a team effort requiring different coalitions. No single body has all the levers London requires to drive success and different priorities can have different leaders. However the Mayor of London, through his economic development strategy, is well placed to coordinate and drive this agenda as a whole by supporting or building coalitions across government, business and wider society. The coalitions implementing these recommendations will need to develop them further. We discuss more about how this could work in practice in Chapter 9. The priorities are set out below.

The Global Hub: staying open for business

1. Stay open for commerce and trade: forge new trading relationships with international partners and remain open to investment from across the world.

London should work with government to:

a) maintain to the greatest extent possible the free trade of goods and services between the UK and EU;

b) develop a transitional arrangement with the EU, reducing the risk of an exit without agreed rules causing a dramatic drop in business activity;

c) reaffirm and strengthen relationships with decision makers in traditional partner countries (especially the US and Japan) and emerging markets (especially China and India) to grow trade links, and maximise headquarters located in London; and

d) explore and prioritise potential new opportunities following an exit from the EU, e.g., free-trade zones, strategic deployment of State Aid, regulatory and public procurement freedoms.

2. Stay open to international talent: remain open to, and an attractive location for, international talent, complementing efforts to improve Londoners' employability.

In terms of talent from the EU, the legal status of EU workers currently in the UK needs to be maintained while any new migration regime must facilitate the continued recruitment of skilled workers. Attracting talent from outside the EU similarly requires a welcoming, evidence-based visa regime for skilled workers. While migration policy rests with the national government, the Mayor's office should undertake an evidence-led exercise to articulate the value of openness to global talent for London. Further evaluation is also required to understand the effect on the rest of the UK if London were to draw more talent from other parts of the country. Measures flowing from this work could include:

a) making the case for expanding the Tier 1 'Exceptional Talent' visa route, adding new roles and categories to the Tier 2 visa 'shortage occupation list' and streamlining the process of work visa sponsorship by firms, alongside a simplified digital platform for visa applicants;

b) making the case for a reintroduction of the two-year post-study work visa for STEM graduates from accredited universities; and

c) exploring the potential for flexible, regional migration policies following EU exit (e.g., recent London visa proposals).

In addition, the city could maintain its attractiveness to global talent by:

d) challenging misperceptions around diversity and openness following the EU referendum, e.g., launching international promotional campaigns and expanding existing ones such as GREAT, and through industry-sponsored initiatives.

3. Protect and grow London's financial and professional services: build on London's status as a global hub for finance and professional services.

In addition to the above priorities, levers can be pulled specifically to help sustain London's leading position in financial and professional services, and thereby the ecosystem of other firms across the UK that benefit from this strength. While many of the levers here are held by national government, London needs a much stronger, united voice from across the public and private sectors that clearly articulates the economic benefits from these sectors to:

a) call on the Prime Minister to provide an unambiguous statement of support for the financial and professional services sector and highlight their importance in the UK's overall industrial strategy;

b) make the case for access to European markets in financial services, whether through continued passporting or some other measure such as regulatory equivalence;

c) expand London's international influence on non-trading terms through collaboration between industry and legal bodies, e.g., improving the approach to and speed of dispute resolution, paperless systems, automated disclosure and re-designed court processes.

d) support priority service areas (e.g., infrastructure finance) where partnership across industry, government and regulators will promote rapid growth[125].

4. Boost international travel and tourism. Expand air capacity and exploit London's reputation as a tourist destination, increasing visit frequency and helping the city to serve as a gateway to the whole country.

While some of these levers rest firmly in the hands of national government, and will again require London business as well as government to make the case, London government has a key role in driving more effective international promotion. London needs to:

a) ensure that the new Airports National Policy Statement is designated on time, removing a key constraint on the construction of new runway capacity at Heathrow;

b) work with national government to develop a long-term aviation policy framework that enables expansion at other airports in the South East and supports improved rail links with airports in the region through coordinated timetables and increased capacity;

[124] City of London/PwC, **Regional visas – a unique immigration solution?**, October 2016; British Chambers of Commerce stakeholder input
[125] These opportunities are discussed in Chapter 4 and by TheCityUK, **Financial and Related Professional Services: Meeting the challenges and delivering opportunities**, 2016

c) increase use of reciprocal visa-free and easy-access visa travel arrangements where consistent with security objectives, e.g., a further extension of validity length of the visitors' visa, and avoid full cost recovery for tourist visa processing where the economic case is strong; and

d) support greater city promotion, across both established markets and longer-term growth opportunities, such as second-tier Chinese cities.

The Creative Engine: fuelling innovation and growth

5. Strengthen digital connectivity: appoint a new Chief Digital Officer and team to drive improvement in London's digital infrastructure, creating a new strategy to deliver ubiquitous, high-speed, reliable, and affordable digital connectivity, as well as to identify and implement smart city initiatives.

Investing in digital infrastructure can enable growth in GVA and jobs, and foster innovation. London's digital strategy needs to deliver:

a) ubiquitous, high-speed fixed broadband, with a particular focus on upload speeds, through a city-wide investment plan coupled with changes to the planning and regulatory regime;

b) improved existing mobile coverage and reliability, by engaging with Ofcom, planning officers, landowners, developers and wireless providers, and ensure London is at the forefront of the deployment of next-generation 5G mobile networks;

c) the timely implementation of major smart city initiatives, such as universal WiFi, open data for public services and regulation to develop innovative platforms and services (e.g., self-driving vehicles, drones); and

d) the collective security of its digital infrastructure, resourced, in part at least, through the targeted use of the Government's cyber security fund to tackle London's vulnerabilities.

6. Improve funding and support for innovative SMEs: expand access to scale-up funding opportunities for firms with high growth prospects, filling the gap between start-up funding and flotation, underpinned by a forward-looking regulatory environment.

London's innovative SMEs are particularly strong in the digital and creative, finance and life science sectors. To nurture these high-growth firms further, London must work with national government to:

a) sustain current levels of grant and equity funding to researchers and innovative start-ups (e.g., Horizon 2020 and European Investment Fund) following EU exit, with funding decisions taken by London government;

b) increase the availability of currently scarce mid level growth capital for innovative firms by increasing investment thresholds in existing tax initiatives (e.g., Enterprise Investment Schemes) and simplifying the process of secondary listings on the London Stock Exchange for firms listed on the Alternative Investment Market;

c) build on the Financial Conduct Authority's success in encouraging fintech innovation and competition (e.g., expanding Project Innovate, which has supported over 175 fintech firms to date through more permissive regulatory standards); and

d) following EU exit, reduce the overall regulatory burden on SMEs, while ensuring that UK data protection and digital sovereignty regulations enable innovative firms to use London as a base for global expansion.

The City that Works – addressing weaknesses

7. Invest in transport infrastructure and services to tackle long-term impediments to growth: enable improved job creation and productivity through investment in the transport network, establishing financing mechanisms that will enable London to invest for the long term.

London government needs to work with other cities, particularly those gaining their own devolved arrangements, to make the case for increased investment to support population and economic growth, both from:

a) new ways of funding infrastructure, for example through capturing value uplifts associated with investment in new rail infrastructure, e.g., in the case of Crossrail 2, from a more intense level of development around outer London stations; and

b) either greater government grant for infrastructure investment in additional public transport capacity or further fiscal devolution to cities and city-regions.

In addition, the Mayor and TfL need to work with national government to enable London to benefit from – and where appropriate show leadership in – transport innovation across the road network:

c) updated road use regulation and infrastructure that incorporates emerging models of mobility for Londoners beyond personal car ownership – including electrical cars, alternative ownership models and self-driving vehicles; coupled with

d) a city-wide upgrade of road networks to alleviate congestion. The challenge again is funding: successfully making the case to government to devolve London's share of Vehicle Excise Duty is one potential source, as is using more sophisticated congestion charging, alongside and integrated with the expanded Ultra Low Emissions Zone, to manage demand and generate revenue.

8. Accelerate housing delivery: change governance and improve incentives, coordination, capabilities and funding across the GLA and the boroughs to substantially increase the new homes built for Londoners.

London has a chronic shortage of housing to meet the needs of a rapidly growing population. The Mayor has set up the Homes for Londoners (HfL) board to bring together the Mayor's housing, planning, funding and land powers in order to address the critical need to build more homes. Over time it should be scaled up to become a pan-London delivery body that works with the GLA, developers, investors, and boroughs to:

a) identify and release land for planning and development, e.g., through identifying under-utilised public sector land, expanding transport infrastructure, and implementing well-designed, high-density developments;

b) promote building by strengthening financial incentives and disincentives, e.g., through encouraging boroughs to use their compulsory purchase powers to bring land back to the market where developers have been slow to act on granted planning permissions, providing financial assistance and reducing obstacles for small builders; and

c) encourage innovation, e.g., through new methods of construction and types of housing, such as policy support for the build-to-rent sector.

In parallel, the Mayor should build a coalition across London to make the case to government to give him:

d) the powers to enable HfL to fulfil its functions and, more critically, the financial resources to enable it to deliver both the number of homes and mix of tenures that London needs.

9. Develop Londoners' employability: dramatically scale up skills efforts to ensure that everyone who grows up in London can access employment in a changing and increasingly competitive labour market.

London must begin by commissioning a rigorous, data-driven assessment of the skills gaps and job demand in London's labour market which is maintained in near real time. This needs to be combined with a data-driven analysis of existing employment and skills interventions, to identify where programmes are achieving successful outcomes and could be scaled up, or where they are failing and need to change or cease to operate. The results would enable interventions such as:

a) refocusing London's devolved adult training budget to business-oriented skills training, incorporating best practices such as Amtec in the US, the German apprenticeship model[126] and 'learn-while-you-earn' programmes for mid-career roles to improve productivity on the job and facilitate the transition from low pay to higher-skilled employment. Together, these approaches could help meet the challenge of automation and new modes of working;

b) arguing for the devolution of the Government's proposed apprenticeship levy to London, allowing the tax stream to be deployed to meet local skills and employment challenges;

c) exploring the extension of free or subsidised childcare to one and two-year-olds to encourage flexible working and improve female participation in the workforce; and

d) developing a credible careers and entrepreneurship programme that brings together London's schools and employers to ensure that young Londoners are work-ready, building on the momentum of the Careers and Enterprise Company.

[126] Sutton Trust, **Real Apprenticeships**, 2013

London's role in the wider UK economy

10. Support UK-wide growth: ensure a growing London works ever more effectively, in cooperation with other city-regions, to drive growth across the country.

London accounts for 14% of the UK population[127] and its economy contributes 17% of jobs[128], 23% of GVA[129] and nearly 30% of taxation[130]. London's economy matters to the whole of the UK and its growth needs to be sustained for benefit of the whole country and not just Londoners. London should work with the other city-regions to:

a) ensure that the UK's industrial strategy integrates London's priorities with those of the wider UK, both to improve collaboration and cooperation across the country and to support London's significant net tax transfer to the wider UK;

b) form a common urban agenda for jobs and growth, identifying the need for national policy changes, and funding for common barriers to growth, such as digital connectivity and transport, underpinned by greater control over local tax revenues;

c) build complementary supply chains across the UK, for example in life sciences where headquarters in London are complemented by research, manufacturing and distribution in other parts of the country; and

d) work closely with national government to support UK-based firms to identify opportunities to innovate and grow, including the development of new export markets.

[127] ONS, available at http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/february2016
[128] ONS Dataset: **JOBS05: Workforce jobs by region and industry**, September 2016
[129] GLA Economics, **Regional, sub-regional and local gross value added estimates for London, 1997-2014**, March 2016
[130] "Calculation of 'economy taxes', which are dependent on the growth of the economy, available at **http://www.centreforcities.org/press/london-generating-30-uk-economy-taxes-serious-implications-post-brexit-britain/**"

09.

MOVING TO IMPLEMENTATION

Exploring the priorities from the themes

How will we know we are moving in the right direction?

Given the specific focus of this plan, the ultimate measure of whether London has achieved success will be GVA, jobs creation and diversification, as set out in Chapter 1:

• **the fastest income growth among cities of its scale and type**, with growth in GVA per head that is faster over the long term than that of New York, Paris or Tokyo, and that delivers more benefit to the wider UK;

• **job creation and growth that translates into opportunity**, with employment rates higher than equivalent rates in similar international cities and growing economic links with the rest of the UK driving wider prosperity; and

• **diversity and resilience**, with strong performance across a wider range of economic sectors in order to improve the city's resilience against crises.

What will it take to get there?

Economic growth planning is not a one-off project, and this agenda will need continuing work both to develop and implement the actions that sit behind it, and to ensure it remains robust as it is tested with further stakeholders and against new circumstances.

As noted above, no single body has all the levers London requires to drive success and different priorities can have different leaders. However the Mayor of London, through his economic development strategy, is well placed to coordinate and drive this agenda as a whole by building coalitions across government, business and wider society. This could include creating a new virtual team within the GLA. Overall oversight will be needed to sustain the planning process over time, to track progress against the priorities and to ensure stakeholders are both aligned with the plan and accountable for delivery.

It is ultimately the launch of specific initiatives, involving targeted action to address these priorities, which will determine success. We recognise that these priorities will need quite different delivery approaches to reflect their different areas of focus. For example, some of these priorities essentially consist of influencing and advocacy, while others will entail direct delivery within London. Equally, for some of the priority areas there are existing organisations with relatively clear ownership and responsibility, while others have no existing point of ownership.

Each initiative will be owned by an appropriate team, which might be private, public or a mix of the two, depending on the nature of the area. The initiative leader(s) will need to develop business plans, raise resources, define milestones, lead implementation, and track progress for each initiative.

Box 3: What has been critical in other cities' implementation approaches?

1. Mayoral leadership – successful outcomes are associated with mayors who use their power to be the 'change engine' that drives implementation forward. Key components of this approach include relentlessly pushing initiatives and actions, and setting up systems that hold other actors to account for delivery.

2. Strong business support – successful implementation plans identify the key business leaders who have the appetite, resources, network and influence to become active sponsors of the plan and invest in seeing the plan through.

3. A clear road map and scorecard – just as any private sector organisation has a clear road map, with a set of milestones and metrics, successful city plans have a clear implementation plan with a set of performance indicators to track progress. This enables key stakeholders to hold the plan and its relevant sponsors to account, track progress transparently and incentivise delivery. Early progress in the first 12 months of the plan is important to set the tone for the rest of the implementation timeline. Therefore it is important to demonstrate quick wins and sufficient progress in a few areas rather than underwhelming progress across all actions.

4. Sufficient human and financial resources – getting the right level of resources, capabilities and the right governance model requires continual investment and renewal – we observed that often times the investment required in delivering the plan is underestimated.

5. Public commitments – creating accountability and setting expectations through public announcements while making key actors clearly accountable. Savvy communications and engagement is also important to sustain interest over the longer run – especially as the plan competes with multiple priorities and interests and lasts across political cycles.

Case Study: Draft implementation plan for accelerating housing delivery

For illustrative purposes we have detailed a draft action plan for one of our priorities, accelerating housing delivery, which will continue to change and be refined with stakeholder engagement and a quickly changing context, but demonstrates a way of bringing the priority areas to action.

The first aim is to set a clear overall goal with a specific metric for measuring success. In our example of accelerating housing delivery, this could be set as the construction of 49,000 new homes per year in greater London as tracked by GLA[131].

Next, a clear governance structure should be set to drive delivery of the goal. One possible overarching delivery body for the goal is Homes for Londoners (HfL), which has been established by the new Mayor to "bring together all the Mayor's housing, planning, funding, and land powers alongside new experts to raise investment, assemble land, make sure Londoners get a fair deal from developers, and commission and construct new homes"[132]. HfL could act on behalf of the GLA, working closely with residential developers, investors, and the boroughs. In our view, HfL should be quickly scaled up from its current remit to become the pan-London housing delivery body.

A number of key performance indicators could then be set out to ensure the overall goal. To achieve 49,000 new homes per year, the metrics to be monitored include:

• proportion of GLA resources put towards transport and wider infrastructure investment which support the delivery of new homes;

• amount of financial assistance for housing development;

• amount of financial assistance for home building R&D, and to scale up new residential construction technologies;

• area of land identified for development per year;

• number of approved planning permissions per year; and

• number of skilled workers entering the London housing development workforce each year.

The levers to be pulled should then be specified in order to be actionable. Figure 38 attempts the first step of this process, based on the actions set out in Chapter 8 and assigning each detailed implementation point an owner. Again, this is an illustration. The next step would be to build these actions into an overarching schedule, with deadlines set that ensure early progress but that are realistic for achieving successful coordination across stakeholders and layers of governance.

[131] 49,000 homes is the target set in the London Plan (March 2016 update), which will be updated in future iterations of the London Plan
[132] http://www.sadiq.london/homes_for_londoners_manifesto, accessed November 2016

Figure 35

Specifying actions to accelerate housing delivery

Sub-actions	Detailed implementation	Potential Owner
Release under-utilised public sector land to secure a new pipeline of developable land for housebuilding	Assemble sites around core public land-holdings (e.g., TfL, Network Rail, Metropolitan Police, NHS) and offer them to the market with clear requirements about the mix of tenures required	Mayor & UK government
	Use developments on public land, which are under the Mayor's control, as best-practice examples (e.g., new building methods, 50% homes classified as affordable, etc.)	
Use transport infrastructure as a catalyst to unlock more housing development, e.g., GLA City in the East plan, coordinating house building with transport strategies	Work with TfL and boroughs to identify land that has the highest potential for new homes per pound spent on infrastructure	HfL
	Prioritise infrastructure projects already underway that have the highest potential for unlocking land for new homes	TfL
	Direct the highest possible proportion of funds towards infrastructure that supports home building	GLA
Implement policies in the London Plan which increase development density to make the best use of land, with concomitant design requirements to protect Londoners' quality of life	Document new densification policies in the London Plan	Mayor

Sub-actions	Detailed implementation	Potential Owner
Work with boroughs to review their Green Belt in relation to new transport infrastructure (e.g., Crossrail 2) to establish the role for elective real location for new homes, as seen for example in the Greater Manchester Spatial Framework for 225,000 new homes	Produce an overall plan for Green Belt release within the GLA boundary that makes a coherent economic and environmental argument, and work with the relevant boroughs to implement it.	Mayor, boroughs
Strengthen financial incentives for boroughs to meet their housing targets through devolving property taxes to London as set out by the London Finance Commission (LFC)	Campaign for greater devolution using sound economic arguments and evidence, e.g., giving London the power to reform Council Tax will allow it to be more aligned to the value of property in the capital	Mayor, LFC
	Draw up detailed plans for how devolving property tax regimes, with boroughs receiving revenues raised and then allocating the funds into housing development	
Remove planning powers from boroughs that consistently fail to meet their housing targets	Establish Mayoral intervention rights when boroughs fail to meet targets	Mayor
Assess the scale of unimplemented planning permissions and bring land back to the market	Assemble data to assess unimplemented planning permissions	GLA
	Encourage boroughs to use their compulsory purchase powers to bring land back to the market where there are no good reasons why development is not taking place and when a reasonable period of time has elapsed	HfL

Sub-actions	Detailed implementation	Potential Owner
Explore how to support modular construction to bring down construction costs, reduce delays, and mitigate potential skills shortages following potential new migration laws	Provide financial incentives to early adopters of modular housing	HfL
	Communicate the benefits of new construction methods and materials (saved time and money, lower running costs, improved on-site safety, etc.)	
	Campaign for central government to increase levels of R&D funding towards modern construction methods	
Implement a pan-London policy framework to help kick-start the build-to-rent sector	Amongst other actions, set targets, amend planning policy and work with boroughs to support build-to-rent c onstruction	HfL

Closing remarks

This agenda is designed to deliver a stronger economy for London, with London making a stronger contribution to the UK. Successful delivery would mean: more employment opportunities and a greater variety of work for Londoners; easier and faster growth for business owners; more affordable housing and better transportation across the South-East; and, better integration of the strengths of London's economy with that of the rest of the country. Turning this agenda into action will require substantial involvement from a broad set of stakeholders and an investment of time and energy from groups across London. But the economic success of London is a prerequisite not only for the well-being of the citizens of London but also for those of the UK as a whole. We believe the prize is worth it.

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APPENDIX

SIC codes used for the analysis of growth drivers (2008-14)

SIC 2007 classification

Industry	SIC 07	Description	Weight
Construction	F (41-43)	Overall figures from ONS used instead of detailed breakdown	100%
Creative (excl. tech)	731	Advertising	100%
Creative (excl. tech)	7111	Architectural activities	100%
Creative (excl. tech)	3212	Manufacture of jewellery and related articles	100%
Creative (excl. tech)	741	Specialised design activities	100%
Creative (excl. tech)	591	Motion picture; video and television programme activities	100%
Creative (excl. tech)	601	Radio broadcasting	100%
Creative (excl. tech)	602	Television programming and broadcasting activities	100%
Creative (excl. tech)	742	Photographic activities	100%
Creative (excl. tech)	5811	Book publishing	100%
Creative (excl. tech)	5812	Publishing of directories and mailing lists	100%
Creative (excl. tech)	5813	Publishing of newspapers	100%
Creative (excl. tech)	5814	Publishing of journals and periodicals	100%
Creative (excl. tech)	5819	Other publishing activities	100%
Creative (excl. tech)	743	Translation and interpretation activities	100%
Creative (excl. tech)	9101	Library and archive activities	87%
Creative (excl. tech)	9102	Museum activities	87%
Creative (excl. tech)	592	Sound recording and music publishing activities	100%
Creative (excl. tech)	8552	Cultural education	100%
Creative (excl. tech)	900	Creative; arts and entertainment activities	87%
Digital technologies	2611	Manufacture of electronic components	100%
Digital technologies	2612	Manufacture of loaded electronic boards	100%

Industry	SIC 07	Description	Weight
Digital technologies	262	Manufacture of computers and peripheral equipment	100%
Digital technologies	264	Manufacture of consumer electronics	100%
Digital technologies	2651	Manufacture of instruments and appliances for measuring, testing and navigation	100%
Digital technologies	268	Manufacture of magnetic and optical media	100%
Digital technologies	3313	Repair of electronic and optical equipment	100%
Digital technologies	582	Software publishing	100%
Digital technologies	620	Computer programming; consultancy and related activities	100%
Digital technologies	631	Data processing; hosting and related activities; web portals	100%
Digital technologies	9511	Repair of computers and peripheral equipment	100%
Financial services	K (64-66)	Overall figures from ONS used instead of detailed breakdown	100%
Life sciences, healthcare and HE	21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	100%
Life sciences, healthcare and HE	86	Human health activities	100%
Life sciences, healthcare and HE	75	Veterinary activities	100%
Life sciences, healthcare and HE	266	Manufacture of irradiation, electromedical and electrotherapeutic equipment	100%
Life sciences, healthcare and HE	267	Manufacture of optical instruments and photographic equipment	100%
Life sciences, healthcare and HE	325	Manufacture of medical and dental instruments and supplies	100%
Life sciences, healthcare and HE	721	Research and experimental development on natural sciences and engineering	100%
Life sciences, healthcare and HE	854	Higher education	100%
Life sciences, healthcare and HE	4646	Wholesale of pharmaceutical goods	100%

Industry	SIC 07	Description	Weight
Life sciences, healthcare and HE	4774	Retail sale of medical and orthopaedic goods in specialised stores	100%
Manufacturing	C (10-33)	Manufacturing	100%
Manufacturing	2611	Manufacture of electronic components	-100%
Manufacturing	2612	Manufacture of loaded electronic boards	-100%
Manufacturing	262	Manufacture of computers and peripheral equipment	-100%
Manufacturing	264	Manufacture of consumer electronics	-100%
Manufacturing	2651	Manufacture of instruments and appliances for measuring, testing and navigation	-100%
Manufacturing	268	Manufacture of magnetic and optical media	-100%
Manufacturing	3313	Repair of electronic and optical equipment	-100%
Manufacturing	21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	-100%
Manufacturing	266	Manufacture of irradiation, electromedical and electrotherapeutic equipment	-100%
Manufacturing	267	Manufacture of optical instruments and photographic equipment	-100%
Manufacturing	325	Manufacture of medical and dental instruments and supplies	-100%
Manufacturing	3212	Manufacture of jewellery and related articles	-100%
Professional services	69	Legal and accounting activities	100%
Professional services	702	Management consultancy activities	100%
Real estate	L (68)	Overall figures from ONS used instead of detailed breakdown	100%
Tourism	55	Accommodation	100%
Tourism	561	Restaurants and mobile food service activities	41%
Tourism	563	Beverage serving activities	41%
Tourism	49	Land transport and transport via pipelines	19%
Tourism	50	Water transport	19%

Industry	SIC 07	Description	Weight
Tourism	51	Air transport	19%
Tourism	791	Travel agency and tour operator activities	100%
Tourism	90	Creative, arts and entertainment activities	13%
Tourism	91	Libraries, archives, museums and other cultural activities	13%
Tourism	92	Gambling and betting activities	13%
Tourism	93	Sports activities and amusement and recreation activities	13%
Transportation	49	Land transport and transport via pipelines	81%
Transportation	50	Water transport	81%
Transportation	51	Air transport	81%
Transportation	52	Warehousing and support activities for transportation	100%
Transportation	53	Postal and courier activities	100%
Wholesale and retail	45	Wholesale and retail trade and repair of motor vehicles and motorcycles	100%
Wholesale and retail	46	Wholesale trade; except of motor vehicles and motorcycles	100%
Wholesale and retail	4646	Wholesale of pharmaceutical goods	-100%
Wholesale and retail	47	Retail trade; except of motor vehicles and motorcycles	100%
Wholesale and retail	4774	Retail sale of medical and orthopaedic goods in specialised stores	-100%