Crossrail Baseline Evaluation
May 2022

Economy, Planning and Regeneration
Impacts Report

ARUP Volterra

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Transport for London / Department for Transport

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Executive Summary

Arup and Volterra were contracted by Transport for London (TfL) and the Department for Transport (DfT) to carry out a Crossrail Baseline Evaluation Study. This report covers the wider economy, planning and regeneration aspects, and is part of a suite of documents that additionally address the transport baseline, the construction impacts, case study interviews, and the pre-opening property impacts.

This report includes socioeconomic, planning and property market data using 2008-2019 as baseline period. Due to data availability in some cases we had to choose a different first year. As such, it largely omits the COVID-19 pandemic years 2020 and 2021 and these will be covered in more detail in a later, post-opening evaluation.

The study uses two levels of impact areas: 1) the Crossrail Impact Area (within 15 miles from any station) and 2) three impact buffers around the stations defined as the Lower Super Output Area (LSOA*) boundaries falling within 500m, 500m-1,000m and 1,000m-2,000m bands. No station level analysis was conducted.

Throughout this report, the term Crossrail is used when referring to the construction project, and Elizabeth line is used when referring to the future operational railway.

The key findings of the **wider economic baseline** were:

- There was a pattern of socio-economic divergence between inner and outer London. Relative to outer London, inner London was observed to have higher levels of deprivation, a higher rate of unemployment, higher public spend per head of the population, higher growth in labour productivity, and higher overall GVA growth. Since 2007, inner London's population has grown slightly faster than outer London. This population growth follows a greater rate of home building in inner London, compared to outer London.

- The Crossrail route serves some of London's largest employment centres, and in particular those characterised by knowledge intensive employment. Furthermore, employment has been on an upward trend over the baseline period, although the impact of the two recessions can be observed in the employment data.

- The population of the Greater South East grew by 13% over the baseline period, and by 35% within 500m of future Elizabeth line stations. The 2km areas around Stratford, Canary Wharf and Custom House saw the largest increase in population in percentage terms among Elizabeth line stations. Canary Wharf, Whitechapel and Stratford had the largest absolute increase.

- The observed population changes could reflect an increase in near-station development as the opening of Elizabeth line services drew closer. This aligns with our findings on new home building, presented later in the planning section.

- Levels of deprivation have improved substantially since 2007. By the end of the baseline period, averaged across all stations the Crossrail Impact Area had levels of deprivation comparable to the national average: with the three impact buffers having between 17% and 19% of their LSOAs included in the 20% most deprived LSOAs across the country. This has improved from 36% and 44% in 2007.

- All in all, socioeconomic indicators showed improvement in the areas around future Elizabeth line stations over the baseline period, with growing population and employment density and a decrease in deprivation, although these may not necessarily be the result of Crossrail.

*LSOAs: Lower Super Output Areas are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales

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The key findings of the **property, planning and regeneration** baseline were:

- There was a strong pro-growth policy context, with a number of central Government and Mayoral initiatives supporting large scale housing delivery across London over the baseline period. The identification of Opportunity Areas* in the London Plan, several of which were along the Elizabeth line route, may have helped respond to the housing need across the capital.

- The baseline period was also characterised by local policy transition, with many London boroughs undergoing consultation or examination of their Local Plans in view of new regulations and (more recently) of the London Plan 2021.

- 54,725 new homes were delivered within 1km of

stations between 2008 and 2021 (with 51,600 built by 2019) which is around the same as the 57,000 estimated by the Crossrail Impact Study in 2012**. The original Business Case for Crossrail did not include specific references to housing delivery targets, and was focused on supporting London's future economic development and employment.

- This drive for housing delivery and the subsequent release of large-scale brownfield sites has favoured certain outer London locations, with higher numbers of new build housing in outer London, in comparison to inner London.

- This focus on outer London was enabled by significant investment in other transport infrastructure: the East London line extension, the Northern line extension or the planned Bakerloo line extension to

efficiently connect residents with jobs and opportunities across the capital.

- Nevertheless, total housing stock in the Impact Area has remained relatively stable over the baseline period, even in the context of rapidly rising demand. There was significant variation in the quantum of housing stock in the authorities along the future Elizabeth line route. Housing completions have been highest in Greenwich, Ealing, Tower Hamlets, and Newham.

- There may be potential for the public sector to recover some of the value generated for private actors, with high levels of planning activity around stations along the line, particularly around centrally located Elizabeth line stations.

- Prices of both residential and commercial properties within the Crossrail Impact Area, particularly within a 1km buffer

of future Elizabeth line stations were observed to be rising at a faster rate than inner and outer London as a whole.

- Housing affordability decreased between 2009 to 2017, measured by the national ratio of property prices to income. However, between 2017 and 2019, housing affordability eased slightly, with London experiencing the most significant change. At the same time, London as a whole experienced a decline in consumer house-buying confidence, with a drop in residential transactions, coincident with the period following changes to Stamp Duty in 2014, the aftermath of the EU referendum, and other market factors.

*Opportunity Areas (OAs) are identified in the Mayor's London Plan as key locations with potential for new homes, jobs and infrastructure. – City Hall and Mayor of London, the London Plan

** Crossrail Property Impact Study led by GVA

Glossary

Agglomeration: or economies of agglomeration are the benefits that arise when firms and people locate near one another in cities and industrial clusters. The literature emphasis three sources of agglomeration economies: large labour markets; the ability to exchange ideas and information (known as knowledge spillovers); and the ability to share inputs, supply chains and infrastructure. Cities grow to exploit these advantages.

Crossrail Impact Area (CIA): the Crossrail Impact Area is divided into three areas, defined as LSOA boundaries falling within a) 500m, b) 500m-1,000m and c) 1,000m-2,000m bands from future Elizabeth line stations.

Crossrail Study Area (CSA): the Crossrail Study Area covers the area within a 50-mile radius from Charing Cross station in London.

Inner London: London boroughs which form the interior part of Greater London including the London boroughs of Camden, Greenwich, Hackney, Hammersmith and Fulham, Islington, Kensington and Chelsea, Lambeth, Lewisham, Southwark, Tower Hamlets, Wandsworth and Westminster.

Knowledge spillovers: the exchange of ideas and information among individuals.

Outer London: London boroughs which form the exterior part of Greater London including the London boroughs of Barking and Dagenham, Barnet, Bexley, Brent, Bromley, Croydon, Ealing, Enfield, Haringey, Harrow, Havering, Hillingdon, Hounslow, Kingston upon Thames, Merton, Newham, Redbridge, Richmond upon Thames, Sutton and Waltham Forest.

Tax wedge: measures how much the government receives from taxing labour, calculated as the difference between before-tax and after-tax wages.

LSOAs: Lower Super Output Areas are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales

0-500m buffer area: radius of area within 500m of Crossrail stations.

500m-1km buffer area: radius of area within 500m to 1km of Crossrail stations.

1-2km buffer area: radius of area within 1km to 2km of Crossrail stations.

1. Introduction and approach

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1. Introduction and approach
Crossrail Business Case

Arup and Volterra were contracted by Transport for London (TfL) and the Department for Transport (DfT) to carry out a Crossrail Baseline Evaluation Study. This report covers the wider economy, planning and regeneration aspects, and is part of a suite of documents that additionally address the transport baseline, the construction impacts, case study interviews, and the pre-opening property impacts.

Crossrail is one of the most significant infrastructure projects in the UK and will transform the way people travel in London and the wider South East. The completed Elizabeth line is expected to support the economic growth of London and the surrounding regions, unlocking new development opportunities through improved connectivity. Along the route, improved access to opportunities and services, along with public realm improvements, have the potential to significantly enhance residential and commercial values and encourage value uplift. Such infrastructure enhancements are expected to help deliver key

Government initiatives, and to act as a catalyst for the development of strategic brownfield sites, and the delivery of much needed housing across the South East.

The decision to proceed with Crossrail was supported by a formal business case, that quantified where possible, the costs and benefits of the transport investment across a range of indicators. The Business Case evolved in line with the delivery of the scheme, to revise and articulate the expected benefits. The original Economic Business Case for Crossrail was published in 2003 to identify the strategic need for infrastructure investment, and assess the overall costs and benefits of the scheme*.

The most recent update to the Business Case was published in 2011, to document changes to the core assumptions and capital costs of the scheme*.

The underlying rationale behind the Business Cases was that the future economic success and growth ambitions for London and the

surrounding regions can only be achieved if underpinned by robust transport infrastructure. The Business Case was based upon the assumption that transport schemes are likely to have impacts in markets other than transport. In addition to the transport economic appraisal, a number of 'wider benefits' were considered to play an important role in the overall assessment of the complete Elizabeth line. The current Business Case did not fully consider the relationship between Crossrail and development around stations, and the regeneration outcomes that could be fostered through such land use change.

Compared to more quantitative measures, these 'wider benefits' are often more challenging to define, measure and evaluate.

However, a number of assumptions relating to the economy, regeneration, residential and commercial land uses were outlined more broadly in the business case, as a means of framing the expected outcomes of the transport

investment. These included:

- Increased public transport accessibility will improve access to opportunities and services.

- Improved image and perception of regeneration areas.

- Increased jobs as a result of development activity facilitated by Crossrail.

- Within this, it is expected that a high proportion of these jobs will be taken by people that were previously unemployed or economically inactive.

- Enable the regeneration of areas around stations along its route, which is likely to attract private sector investment and increased employment densities around stations.

- An additional 1.5m residents will be added to the 45 minute commuting catchment of major employment centres within Greater London.

Sources:
HM Treasury (2020) National Infrastructure Strategy
GLA (2021) Paying for Crossrail: Business Rate Supplement
* Crossrail Learning Legacy page

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1. Introduction and approach
Economy, planning and regeneration study

As the assumptions on the benefits delivered by the opening of the Elizabeth line were more oriented towards increased connectivity and employment growth in the Business Case, the first part of this report will focus on socio-economic indicators across line wide geographies. It will cover areas from small scales (buffers 0-500m, 500m-1km, 1-2km around the stations) to wider perimeters such as local authorities or London and the regions. The main objective is to present a clear picture of the state and evolution throughout the baseline period (2008-2019) of key economic indicators: employment structure, revenues, demography and deprivation. This will enable a better understanding of the context of the Elizabeth line, and constitute a starting point for future post-opening studies.

The second phase of this report will focus more on planning, property and regeneration analysis. Although, The original Business Case for Crossrail did not include specific references to housing delivery targets, planning applications or increased commercial property activity, they will no doubt be affected by the opening on the new line. Hence, the interest in producing a precise baseline of the state of these markets and activities throughout the project's development, to identify first trends and prepare a sound basis for post-opening evaluation of the impacts on these specific areas.

In that sense, the policy climate in the past few years in the UK reflects a renewed interest in the role of infrastructure in achieving a range of favourable policy outcomes. Large scale investments in transport have increasingly been used as a mechanism for the delivery of a number of outcomes, such as employment growth, socio economic regeneration, and housing delivery. The National Infrastructure Strategy (2020) set out a plan for long-term investment in the UK's infrastructure as well as highlighting the short-term imperative to boost the economy following the COVID-19 pandemic. Alongside these ambitions, the Government has made steps towards streamlining the planning process as a means to increase the delivery of homes across the country, and reduce uncertainty in the planning process.

The importance of the future Elizabeth line to the growth of London and the wider region is demonstrated by its supporting policy framework. The Crossrail Funding Supplementary Planning Guidance (SPG) (March, 2016) set out that around 60% of funding contributions was expected to come from Londoners and London businesses. In 2009, the Business Rate Supplement (BRS) Act granted power to the GLA to levy a supplement on non domestic ratepayers, as a means of financing projects to promote economic development across the capital. In total, the BRS, in conjunction with the Mayoral Community Infrastructure Levy (MCIL), was expected to fund £6.1bn of the GLA's contribution towards the overall Crossrail delivery cost. The MCIL was first adopted in 2012 to help fund Crossrail, and is a separate contribution to borough CIL calculators which are used to finance local infrastructure.

MCIL contributions were expected to provide around £600m towards construction and delivery, by collecting contributions from additional floorspace developed across the city, based on the size, location and use class of the development.

Additional funding streams will include S106 contributions on new office development in the Central Activities Zone (CAZ).

Source: Crossrail (2021) Crossrail Skills Employment Strategy

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1. Introduction and approach
Crossrail's expected impacts on the wider economy

While assessing the effects of a public investment or policy, economic impacts are often estimated by the calculation of user and non-user benefits, such as those that result from the time savings yielded from a new rail line, and the decongestion of road networks. Under a well-defined set of circumstances these benefits will capture the substantial part of the welfare effects of a transport investment. However, if there are 'distortions' or market failures that mean the economy is not functioning efficiently, additional benefits or disbenefits will arise as the impact of transport improvements is transmitted into the wider economy. These impacts are called Wider Economic Impacts (WEIs, or Wider Economic Benefits – WEBs).

The initial idea for WEIs was based on the theory of agglomeration – the positive link between the density of economic activity and productivity. Many

empirical studies quantify this relationship, identifying three main reasons why density and productivity are related: deeper labour markets*, increased competition between producers and knowledge spillover effects** – sometimes known as "sharing, matching and learning" effects.

Traditional 'static' transport appraisal misses the benefits of density, assuming that first order user and non-user benefits capture all gains from transport and that land use is fixed. The evidence, however, suggests that transport has significant and long term impacts on both land use and productivity.

The Crossrail Business Case was the first time that agglomeration benefits were included in a scheme appraisal. The initial analysis focused on the transport constraint on future central London employment growth, and the role of Crossrail in relieving that capacity constraint. The business

case described:

- The number of jobs that would be constrained, without Crossrail, from locating within the central area (due to a lack of transport) compared to the London Plan forecast of growth.

- The net loss of output that would result from the constraint, reflecting the difference in productivity between central London, the rest of London and the UK.

The multi-agency Wider Benefits Working Group concluded that WEBs were both significant and entirely additional to the welfare benefits captured in the standard appraisal. The DfT concluded that:

- There will be productivity gains to the additional central London jobs, but that, at an individual level, those will be balanced out by other non-pecuniary costs (travel, stress etc). DfT accepted that there would remain a "tax wedge", equivalent to 30% of the

productivity increase that will be captured by government.

- The increase in central London employment would increase the productivity of all central area jobs, resulting in a second productivity rise.

The DfT subsequently specified four broad types of WEBs: move to more productive jobs; pure agglomeration; increase in labour force participation; and impacts on imperfect competition. The latter two types were not included in the original analysis but were included in the final business case. The "tax wedge" impact of the additional central London jobs – i.e. move to more productive jobs – was only included as a sensitivity.

Crossrail WEBs were estimated to be £6bn-£18bn in welfare term, and including these in the appraisal increased the BCR from 2.0 to between 3 and 3.5.

* Deep markets here refer to the size and density of the labour market, and the extent to which employment is clustered. High concentrations of employment enable businesses to recruit from a deep pool of workers with relevant skills – this is the matching benefit arising from agglomeration.

** Knowledge spillover is a form of agglomeration benefits which stems from the exchange of ideas among individuals

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1. Introduction and approach
Expected impacts of Crossrail on properties around stations – findings from Arup's pre-opening impact report

As part of this Baseline Evaluation study, Arup conducted an econometric evaluation of the announcement impacts of Crossrail (i.e. the pre-opening impacts) on property and planning outcomes between 2008 and 2019. This work provides an important addition to this report's baseline results.

The evaluation methodology was prepared in accordance with impact evaluation standards used by the What Works Centre for Local Economic Growth and other key organisations in the industry. Difference-in-difference econometric models with fixed effects were used, which were classified at Level 3 of the Maryland Scientific Methods Scale and considered to be a robust impact evaluation technique. The average impacts were tested at line-wide level, results were produced for specific sections of the route, and data was analyzed to investigate the impact around specific stations.

The key findings of this report were:

- Crossrail's announcement had a positive 2% (2.2%) average impact on residential house prices in the areas closest to stations (0 – 500m). The western London section experienced the highest growth rate (4%), then the western section outside of London (3%) and the south-eastern section (also 3%). Interestingly, the impact on the central section (2.5%) was only marginally higher than the overall impact. The smallest impact was found for the eastern section, but it was still only marginally lower than the average (1.9%).

- Residential properties in locations further away from the line (between 1 km and 2 km from the stations) experienced a smaller increase (that is, a net decrease of around 2%) than they would have if the project had not been announced. One explanation could be the displacement effect, particularly in the eastern and south-east section of the route where transport accessibility was lower and therefore being closer to a station was more important.

- There was an increase in planning applications for new housing developments, but no consistent statistically significant evidence was found that this could be attributed to the Crossrail announcement. However, the pre-opening announcement analysis presented in the pre-opening impact report only estimated the direct impact on planning applications within a 2 km buffer around stations and therefore did not account fully for direct and indirect home-building figures.

- The Crossrail announcement had positive impacts on office rent values in central London. This finding is in line with existing evidence: a better connection between the regional centre and the smaller centres mainly benefits businesses in the regional centre. The estimated impact in areas between 500m and 1km from Crossrail stations was 7%.

- Amid limitations around available data and the methodology used, the analysis concluded that it was plausible that most of the activity close to stations would have happened even in the absence of the Elizabeth line; however, the methodology used in this report did not assess the line's impact on the whole of London, and was only applied to the buffers around stations.

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1. Introduction and approach
Expected impacts of Crossrail on properties around stations – literature review

The relationship between transport investment and a potential uplift in residential and commercial values is well postulated, and there has been a significant level of research conducted to explore these relationships in the context of Crossrail, to forecast likely impacts upon land use and wider regeneration.

The Crossrail Property Impact Study (GVA, 2012) identified some of the key expectations for the completed Elizabeth line. The study covered the period 2012 to 2021, and set out the role of Crossrail in creating additional residential value, through station renewal and public realm improvements. The expected benefits focused upon the transformation of the property market and associated development activity over time, including:

- Additional residential and commercial value along the route of, suggested to be worth up to £5.5bn, between 2012 and 2021.

- Support the delivery of around 57,000 dwellings along the route, within 1km of stations

- Increase in residential capital values immediately around stations in Central London of around 25%, and around 20% in the suburbs.

- Urban realm improvements around stations would drive further development activity.

- Transformative impacts on the property market in key locations, which were categorised according to whether Crossrail would create change, reinforce directions or have a limited impact (Figure 1).

Figure 1: Crossrail station categorisation matrix
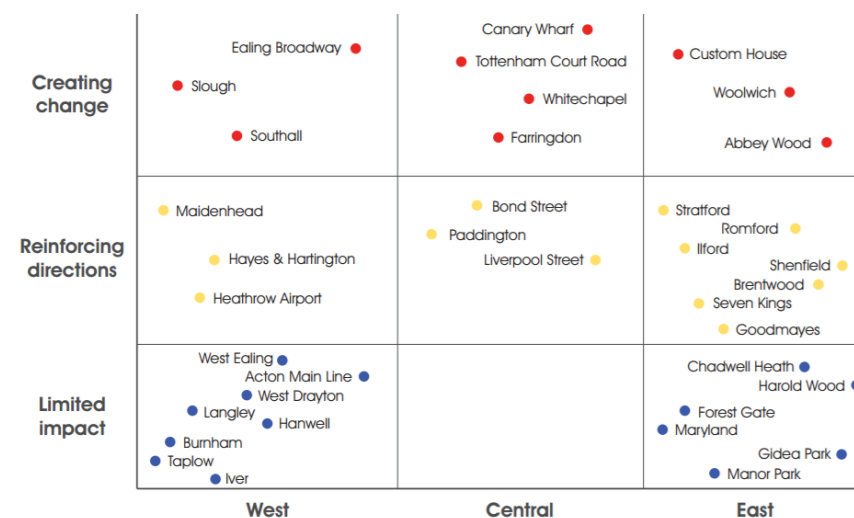
Source : GVA, 2012

However, the GVA study had limitations. The approach taken in the study was to compare changing property outcomes in the areas around stations to the change in their respective area averages. An approach such as this does not control for the impact of other factors driving changing property prices, or the observation that areas in the immediate proximity of stations are often quite different from the wider surrounding area. For this reason, impacts attributed to Crossrail may not be reliable. We have sought to update the approach to account for these factors in this study.

1. Introduction and approach
Expected impacts of Crossrail on properties around stations (cont.)

A number of other studies have used a similar methodology to monitor and compare residential property values around stations at varying spatial scales. These have assessed the scale of benefits associated with Crossrail since its announcement in terms of market activity and value uplift around stations. The methodological approaches were broadly similar, however variations can be noted within the overall conclusions formed. Our finding is that the pre-opening property impact report conducted by Arup used a more sophisticated method than these; therefore, our main conclusions concentrate on the findings of that report.

Savills* undertook work to assess historic land value uplift around a number of current and completed TfL transport projects. The study included an assessment of value capture around future Elizabeth line stations, by monitoring residential property values within a 500m Zone of Influence on a monthly basis, to identify changes in trends. In addition, prices were monitored within a 1km and 2km radius around stations to support the narrative surrounding additional property value attributed to Crossrail. Although some small-scale uplift was noted at the individual station level, overall, the study observed that residential property values remained broadly static for the majority of the baseline period, even during the years when Crossrail was formally announced. Overall, the effects of Crossrail on property were considered insignificant, other than minor localised uplifts in areas with stronger markets.

Lloyds Bank** published a short piece of work on the value of residential properties near the future Elizabeth line, compared with the wider local authority area.

Although a specific spatial scale of analysis around stations was defined, the study assessed Land Registry data trends across an eight and two year period, to gauge the scale of additionality. The research identified that property prices around future Elizabeth line stations had risen at a higher rate (22%) between 2014 and 2016, compared to the local authority as a whole (14%), and Greater London (13%).

In 2016, Countrywide*** undertook an analysis of residential property values around London Overground stations compared to property values in the wider TfL fare zones in which they are located. Land registry data was collated for the period 2010-2016. A key finding of this study was that the greatest impact on property value around Overground stations was in fare Zone 4 (i.e. outer London), closely followed by those in Zone 3. Further breakdown of the spatial trends identified that the strongest performing Overground stations were located in the outer north-east and east of London.

Knight Frank**** carried out an analysis on residential market performance along the Crossrail route, in comparison to other parts of the capital. This study considered the historic market performance of areas around stations, and wider regenerative capacity, including new transport hubs at Tottenham Court Road and Farringdon.

* Savills (2016, confidential)
** Lloyds Bank (2016, confidential)
*** Countrywide (2016, confidential)
**** Knight Frank (2017, Crossrail – Analysing property market performance along the Elizabeth line)

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1. Introduction and approach
COVID-19 caveats

This baseline report was last updated between Autumn 2021 and Winter 2022, at which point the majority of COVID-19 restrictions were lifted in England. Some restrictions on international travel were still in place to curb the spread of any novel variants.

COVID-19 impacted a variety of health, social, economic and demographic indicators. Much of the baseline data collected in this report were affected, at least indirectly, by COVID-19 and the associated restrictions. Many of these restrictions – such as home working, school closures (and other measures associated with 'lockdowns') and the furlough scheme –had significant immediate impacts on some baseline indicators, such as commuting travel patterns and the unemployment rate.

As it is too early to understand the extent to which these changes will be long term, this report presents pre-pandemic data over the period between 2007 and 2019 (or the next best alternative).*

Where relevant, the report does provide commentary to reflect the current position – for example, where COVID-19 has potentially changed the underlying dynamics relating to the data. This commentary is not trying to predict what is going to happen, but is to reflect on the current position and discuss it where relevant.

COVID-19 will have lasting effects, which are uncertain and will depend on several factors, not least the forming of new habits post-pandemic. This report does not attempt to forecast what is going to happen but presents historic data to understand the baseline.

* Although note that the Construction Impacts report includes some data to 2021. The Crossrail construction programme was less affected by COVID-19.

Figure 2: OBR forecasts for level of GDP

OBR forecasts for level of GDP
% change with GDP level of Q4 2019, comparison of OBR forecasts
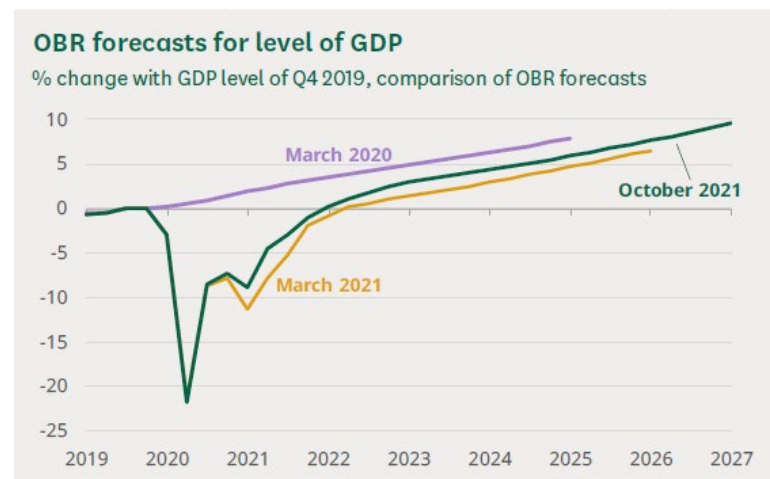
Source: House of Commons Library (2021), Autumn Budget and Spending Review 2021: A summary, section 3.1

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2. Direct employment

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2. Direct employment due to the Crossrail programme
Introduction

The Construction report for Crossrail Ltd and Tier 1 contractors included an analysis of employment figures involved in the line construction.

This section sets out the estimates for employment figures for the *operation* of the future Elizabeth line.

This data is for organisations as they ramp up operations. As such it is not a full picture as the Elizabeth line is not yet operational. All organisations were asked for data relating to the Elizabeth line.

A large and varied skills base will be needed to operate the Elizabeth line. TfL and its industry partners have stated they are committed to promoting diversity so that the workforce will better reflect a line serving London, and to ensure that the best possible talent pool will be drawn upon to maintain and operate the service.

The purpose of this analysis was to:

- Monitor the number and nature of operational jobs supported by Crossrail.

- Monitor the diversity of employees and understand how this compared to relevant benchmarks e.g. other parts of the London transport network, networks elsewhere, historical performance and how it changes over time.

- Monitor other indicators of social interest, such as local employment, fair pay, volunteering, work experience and training opportunities.

Employment data was collected from the principal industry partners engaged in planning for operation of the Elizabeth line, that is:

- Mass Transit Railway (MTR) Crossrail – responsible for day to day operation of train services, the first concession operator. Currently operating services on the Shenfield to Liverpool Street branch but will be operating all services on the Elizabeth line when it is fully operational.

- Bombardier – responsible for maintaining Elizabeth line trains at the depot at Old Oak Common.

- Network Rail (NR) – responsible for maintaining the existing parts of the route through outer London, Berkshire and Essex.

- Rail for London (RfL) – part of TfL, service specifier and concession authority for Elizabeth line services, and the infrastructure manager for the central operating section.

- London Underground Limited (LUL) – again, part of TfL, and the owner and operator of five central London stations (Bond Street to Whitechapel where the route interfaces with existing stations on the London Underground network.

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2. Direct employment due to the Crossrail programme
Introduction

The table presents the information which has been received from the industry partners ('the achieved population'), with the status of each summarised in the table and accompanying notes. Whilst there were complete responses for four of the five industry partners, the level of detail varied. This is because some of the data for the sub-categories were not collected by all industry partners. As a result, some of sub-categories were available or all five of the industry partners; others, such as training, were only available for Network Rail. Only the London Living Wage data was available for LUL.

The analysis only covers the indicators for which we have information or part-information, shown in green and amber in the table. This means that some of the findings are less representative than others.

Figure 3: Table of employment data collected for Elizabeth line partner organisations*

Information	MTR	Bombardier	Network Rail	RfL	LUL
Job starts	Available	Available	Available	Uncertain	Not provided
Graduates	Available	Available	Available	Available	Not provided
Apprentices	Available	Available	Available	Available	Not provided
Gender	Available	Available	Available	Available	Not provided
Diversity	Available	Available	Not available	Available	Not provided
Lon. Liv. Wage	Available	Available	Available	Available	Available
Local emp.	Not available	Available	Available	Not available	Not provided
Volunteering	Not available	Not available	Available	Not available	Not provided
Work experience	Available	Available	Available	Not available	Not provided
Training	Not available	Not available	Available	Not available	Not provided

*Definitions
Job starts – number of new jobs supported.
Graduates – number of new graduates.
Apprentices – number of new apprentices.
Gender – data on the gender of operational staff.
Diversity – data on the ethnicity of operational staff
London Living Wage – information regarding payment of the LLW to staff. The LLW is the hourly rate of pay, calculated independently to reflect the high cost of living in the capital, giving a worker in London and their family enough to afford the essentials and to save. As of early 2022, it is set at £11.05 an hour.
Local employment – number of jobs supported in any Greater London borough or location within 1 mile of the project.
Volunteering – examples of volunteering in the wider community.
Work experience – number of work experience opportunities provided.
Training – details of training programmes provided.

Uncertain - there was a mismatch in the job start data provided by RfL.
Not available - data is not available from the industry partners.
Not provided - data has not been sent to us and may be unavailable.
Network Rail data for job starts, graduates and apprentices excludes contractors.

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2. Direct employment due to the Crossrail programme
Time frame

Each of the industry partners supplied data according to the dates from which records were kept, the availability and reporting format within their own organisation. MTR, for example, provided data from Q2 of the calendar year 2015 to Q4 of 2017, whilst Bombardier only provided figures from Q1 2016 to Q4 2017. The graphic on this page summarises the data availability from all industry partners.

Data from all industry partners was available for 2016 and 2017, with partial availability in 2015 (NR and MTR) and 2018 (NR). For consistency and completeness, this analysis focuses on 2016 and 2017 and presents other data where relevant.

Figure 4: Time frame of employment data provided by the industry partners

Industry partner	Date To	Date From
Bombardier	Q1 2016	Q4 2017
Rail for London	Q1 2016	Q4 2017
MTR	Q2 2015	Q4 2017
Network Rail	Q1 2015	Q1 2018

Source: Volterra calculations, 2018; NB: Gender data for NR is provided for 2016/17 rather than the whole period. The time frame for RfL's diversity data is unknown. Gender and Ethnicity data for MTR covers the period from Q3 2016 to Q4 2017.

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2. Direct employment due to the Crossrail programme
Direct, operational employment

Between 2016 and 2017, Crossrail created a total of 1,200 new direct operational jobs (including part time jobs).* The employment data have been split by industry partners into new job starts, apprentices and graduates in Figure 5. The majority of employment to date was by MTR, which took over operation of the (existing) overground rail services between Shenfield and Liverpool Street on behalf of TfL Rail in preparation for the full opening of the Elizabeth line in 2022.

During 2016 and 2017, two thirds (66%) of Crossrail's operational employment creation came

through new job starts. Apprentices made up over 30% of the workforce and the new graduate intake represented 3% of total direct employment generated. Most graduate employment was supported by Bombardier, the organisation responsible for maintaining the rolling stock and the Old Oak Common depot.

Figure 5 : Direct employment in Crossrail workforce (2016 & 2017, combined total)
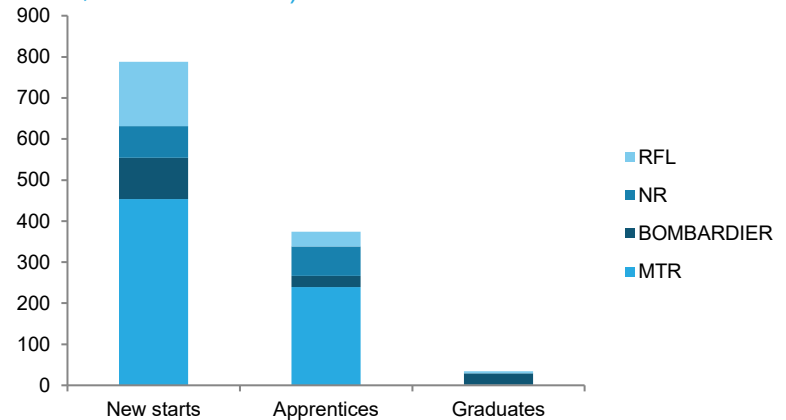
Source: information provided by employers

Figure 6 : Employment by category (2016 & 2017)
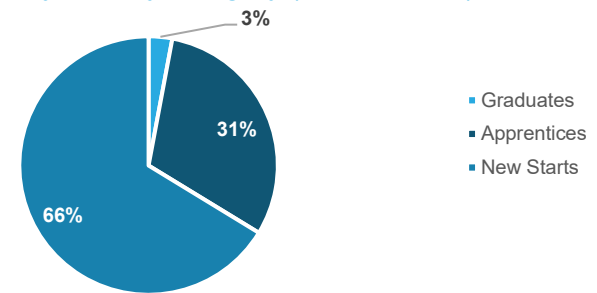
Source: information provided by employers

*Excludes operational employment from LUL which has not been received. Apprentice numbers for Network rail are for fiscal years 2016-17 and 2017-18.

**Some is also attributed to MTR and NR, although this does not show up clearly above as the numbers are small. 19

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2. Direct employment due to the Crossrail programme
Diversity – gender

This slide and the next presents data on the gender and ethnicity of the operational staff employed by the industry partners.

The top figure shows the proportion of female workers for new operational jobs created in 2016 and 2017. Overall, approximately one quarter of operational jobs were taken by women.*

Across London, approximately 46% of all workers are women [Annual Population Survey, 2017]. The proportion of female workers for jobs created by the industry partners was therefore below the London average.

However, the partners work in sectors which have a higher proportion of male workers. When comparing to industry or firm level averages, some of the partners outperformed benchmarks. In 2016, 22.8% of London's transport and communications workforce were women, compared to 26.9%

for jobs created by the industry partners in 2016 and 2017.** The engineering industry was also highly male dominated: only 9% of all engineering jobs in the UK were performed by women in 2015.*** This figure was below that reported by Bombardier and Network Rail.

The table compares the proportion of female workers supported by the Elizabeth line for each industry partner with the overall workforce for each industry partner. This shows a mixed picture: Bombardier and RfL had a higher proportion of female workers amongst their general workforce than their Elizabeth line workforce. Network Rail's Elizabeth line workforce substantially outperformed both firm-wide and industry-wide averages for gender diversity.

Figure 7: Proportion of female workers in Elizabeth line workforce (2016 and 2017)
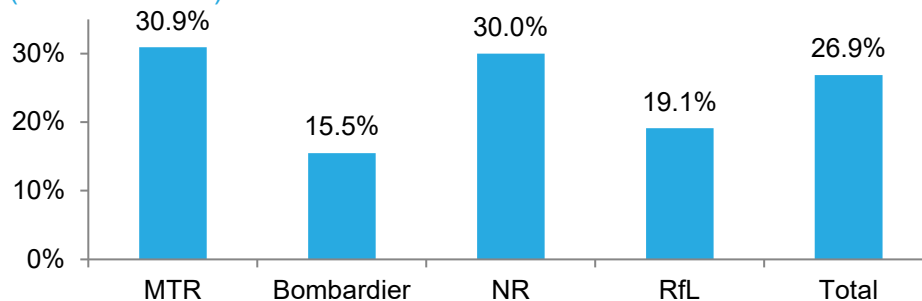
Source: information provided by employers

Figure 8: Proportion of female workers in Elizabeth line workforce compared with overall

	MTR	Bombardier	Network Rail	Rail for London
Elizabeth line	30.9%	15.5%	30.0%	19.2%
Overall	25.6%	19.0%	16.0%	23.4%
Difference (p.p)	**+5.3%**	**-3.5**	**+14.0**	**-4.2**

Source: information provided by employers

*The proportion for Network Rail applies to the year 2016/17. The specific time frame for RfL's diversity data is unknown. Gender data for MTR covered the period between Q3 2016 and Q4 2017 (Inclusive)

**Annual Population Survey, 2016; BRES, ONS, 2016 (SIC2007 Categories H and J)

*** Statistics on Women in Engineering, Women Engineering Society, 2016

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2. Direct employment due to the Crossrail programme
Diversity – ethnicity

The workforce supported by the Elizabeth line was diverse. 38% of the total direct employment identified as BAME (Black, Asian and Minority Ethnic), with this proportion ranging from 29% in RfL to 42% in MTR.* Data on ethnicity was not provided by LUL or NR.

According to the Annual Population Survey [ONS], 35% of workers in London belonged to an ethnic minority in 2017.** The data provided by respondents was therefore broadly in line with the London average.

In 2020/21 BAME representation in apprenticeships was 14% nationally.*** In 2016 and 2017, 35% of all new apprentices at Bombardier Crossrail were BAME, considerably above the average, and broadly in line with the London workforce.****

Figure 9: Proportion of BAME workers in Elizabeth line workforce (2016 & 2017)
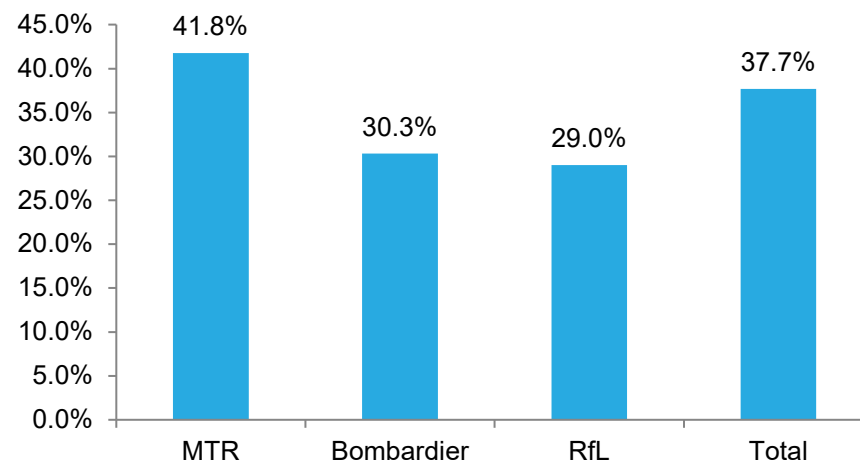
Source: information provided by employers

*The specific time frame for the RfL data is unknown. This analysis assumes that the proportion remains fixed throughout the entire time period. Ethnicity for MTR covers the period between Q3 2016 and Q4 2017 (inclusive)

**Employment rate for ethnic minorities, Annual Population Survey, ONS, year to December 2017

***Apprenticeship Diversity Champions Network (2021), 2021-22 Annual Report

****This figure excludes Q3 2017 as apprentice ethnicity data was not provided for this quarter.

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2. Direct employment due to the Crossrail programme
Local employment and fair pay

Local employment

Crossrail Ltd considered it important that opportunities generated by the scheme were made available to the local community. The Crossrail Skills and Employment Strategy ** had one of its four strategic skills objectives as "supporting local labour – developing the skills of local people to enable them to gain employment within the Crossrail programme and to attain sustainable skills, qualifications and experience."

The Crossrail Brokerage scheme is a programme that works closely with Jobcentre Plus and their network of local job agencies to ensure the maximum numbers of local workers are employed within the Programme.*** Network Rail used the Crossrail Brokerage scheme to advertise all its Crossrail-related job vacancies for

48 hours before they went out to any other sources.

Bombardier provided detailed data for local employment between January 2016 and June 2017. During this period, 44% of the jobs created were local (41 jobs in total).****

London living wage

The information provided on local employment and fair pay (represented by the London Living Wage, LLW) was limited.

Under the Responsible Procurement provisions, each Tier 1 contractor was required to implement the LLW "as a minimum rate of pay for its own employees, and ensure that supply chain employers do likewise".***** This also applied to the infrastructure managers and operators, such that:

- All staff involved in RfL's Crossrail program were paid at

least the LLW.

- LUL stated that its contracts aligned with the Mayor's Responsible Procurement Policy, which aims for all employees to be paid at least the LLW.

- MTR was obliged to pay the LLW to all employees based in London as part of their contracts.

- Bombardier was obliged to pay not less than the LLW to its staff and to use reasonable endeavors to ensure that its subcontractors and suppliers (of any tier) paid a minimum of the LLW to their employees where applicable (there were some exemptions, including apprentices and those not "working full-time on the Project within one of the London boroughs").

- NR confirmed that some of its

contractors had a significant proportion of workers earning at least the LLW, although no specific data was provided.

**Crossrail (2010), Skills and Employment Strategy

***Creating Lasting Legacy of Local Jobs for Londoners, Crossrail

****Local defined by Crossrail as 'any Greater London boroughs or locations within 1 mile of the project'

*****Crossrail (2012), Achieving Social Sustainability Objectives Through Performance Assurance

2. Direct employment due to the Crossrail programme
Community involvement

This section presents examples of community involvement for the relevant industry partners. It shows some of the ways in which infrastructure managers and operators have engaged with local communities through volunteering, work experience and work placements, and training opportunities.

Volunteering

Network Rail reported that it had engaged with students and the wider community through giving staff time off to volunteer, charity activities, career counselling and science talks – dedicating over 6,500 hours to these activities and benefiting an estimated 4,000 young people since 2015.

For the data collection period (see earlier section on timeframes), Bombardier stated that it organised over 50 workshops with schools, colleges and universities to equip students with the skills necessary to find employment and provide career advice and professional guidance.

Work experience and work placements

For the data collection period, Network Rail's Crossrail Programme provided 43 paid work placements and 85 work experience opportunities to young people. Over the period between July 2016 and December 2017, MTR reported 17 work experience opportunities and seven placements relating to Crossrail. A high proportion of these beneficiaries were either female (29% and 71%, respectively) or had an ethnic minority background (41% and 43% respectively).

Bombardier reported that it offered 21 students (of which 38% were female) a placement opportunity and 68 pupils have participated in Bombardier's work experience scheme within the Crossrail Programme (over the data collection period).

Training opportunities

Network Rail funded and coordinateed 'Budding Brunel' – a three-day training course to introduce sixth form students to a career in construction. NR says over 300 young people have attended this course as part of their Crossrail programme. Some 140 primary school students have also benefited from science clubs organised by NR.

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2. Direct employment due to the Crossrail programme
Summary and recommendations

Given the lack of completeness of datasets, our key recommendation is to have a systematic way of collecting the data, such that it is gathered regularly, and in a consistent way from each industry partner.

In order to do this, following is suggested:

- Liaison with each industry partner early in the project to ensure that there are contacts from each organisation that has responsibility for collating the data.

- Decide on the required frequency of reporting. Quarterly reporting period would seem appropriate, but it could be annually or bi-annually instead.

- Clarify the metrics that are required. For instance, employment data have been provided split between graduates, apprentices and new starts.

- Clarify the exact time frames that will be reported for each indicator, to ensure the data is consistent across the industry partners and indicators.

3. Economy and economic performance

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3. Economy and economic performance
Gross value added and labour productivity

The gross value added (GVA) for the whole of Greater London in 2019 (all data is for the calendar years) was £468bn; Inner London accounted for just over two thirds (68%) of this.

GVA in London grew by 55% between 2007 and 2019 – equivalent to annualised growth of 3.7% per annum. Growth in GVA in Inner London over this period (65%) was higher than Outer London (39%), suggesting that Inner London was becoming increasingly important in driving economic growth in the capital.

In 2019, GVA per filled job – a measure of labour productivity – was £79,600 in Greater London, compared to £59,700 in the Greater South East. The same measure of labour productivity in Inner London was approximately 29%

higher than Outer London.

The case for Crossrail was made on its potential to increase productivity through agglomeration and enable more people to work in the most productive part of the UK: central London. It will therefore be important, in future, to see whether the Elizabeth line has had an impact on GVA in the capital.

The business case was somewhat based on the benefits of proximity (of people and jobs). The COVID-19 pandemic has radically changed where office-based workers can work, and therefore how away from their office they are able to live. The economic impacts of the Elizabeth line will partly depend on how work patterns settle down after the pandemic.

Figure 10: GVA per worker

Category	Inner London	Outer London	London	Greater South East
Total GVA (2019)	£320bn	£148bn	£468bn	£928bn
GVA per filled job (2019)	£87,300	£67,600	£79,600	£59,700
Total GVA growth (2007 to 2019)	65%	39%	55%	49%
Growth in GVA per filled job (2007 to 2019)	24%	23%	25%	13%

Source: GVA by industry and ITL region, ONS

Figure 11: Total GVA growth (index 2007 = 100)

Source: GVA by industry and ITL region, ONS

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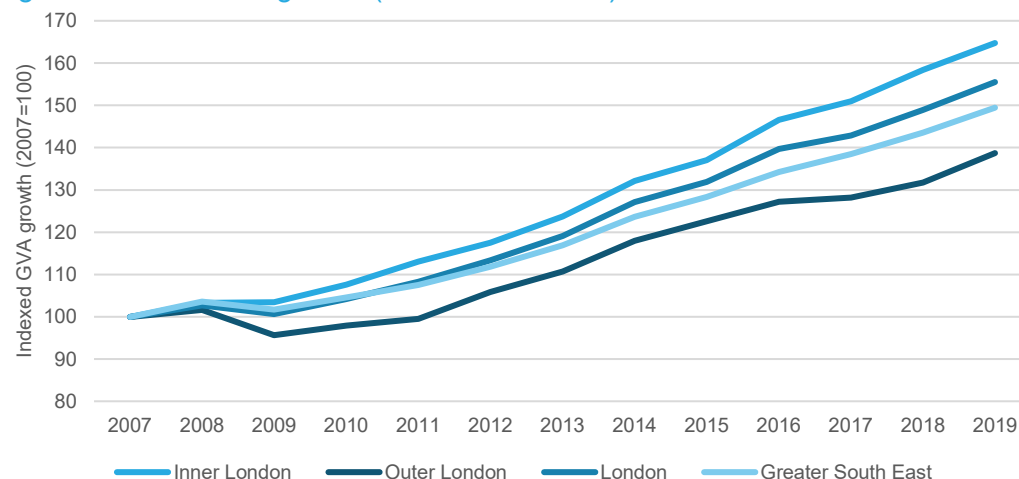
3. Economy and economic performance
Balance of trade

London exported £44bn and imported £74bn of goods in 2019, resulting in a net trade deficit of £30bn. The figure (top) shows that the East and the South East also had a trade deficit in 2019. As a result, the Greater South East had a large trade deficit of £99bn.*

London was less dependent on European Union (EU) countries for trade than the South East: 55% of London's net trade deficit was to EU countries whereas 76% of the South East's deficit was to EU countries in 2019. The United Kingdom withdrawal from the European Union is not covered by the data in these charts, and will alter the way that we trade with Europe.

London's trade deficit increased by 14% between 2007 and 2019 [in nominal terms].

While London had a significant trade deficit in goods, its main exports were services. There is limited data on services but based on estimates from the Greater London Authority (GLA), exports of services were worth over three times more than exports of goods (£100bn compared to £31bn in 2015). This "invisible" element of trade was a key part of London's economy.

*The Greater South East is defined here as the Government Office Regions of London, the South East and the East of England.

Figure 12: Regional trade in goods statistics, 2019
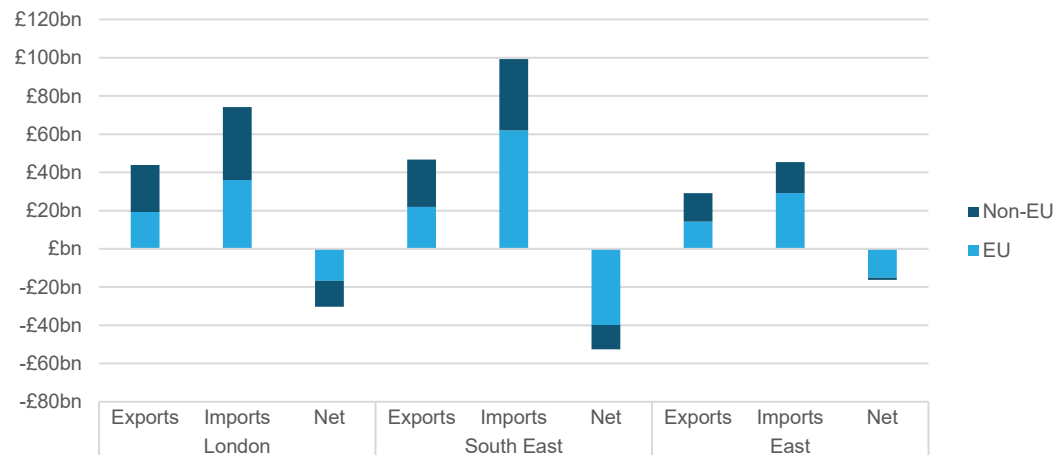
Source: HRMC, UK Regional Trade in Goods

Figure 13: Net trade balance of goods, 2007-2019
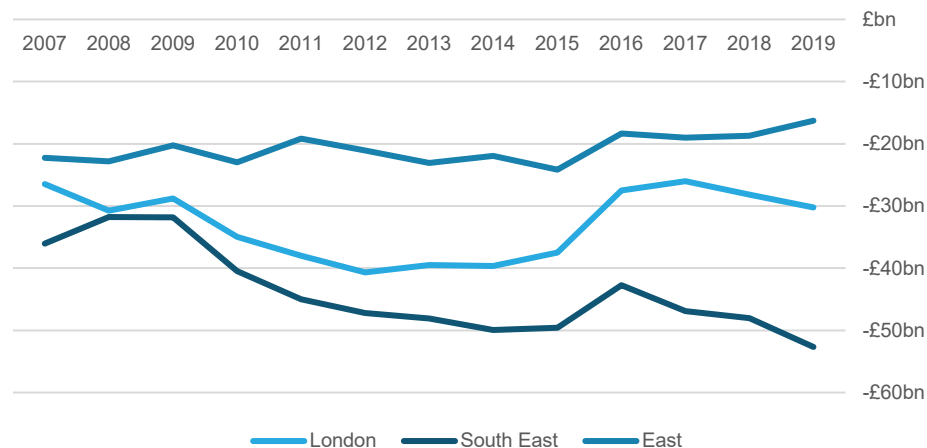
Source: 2007 – 2012: EuroStat, International Trade in Goods; 2013 – 2019: HRMC, UK Regional Trade in Goods

[1] Due to data availability, 2013 onwards uses the Regional Trade Statistics whereas 2007-2012 uses now unavailable EuroStat data

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3. Economy and economic performance
Exchange rate

The Sterling effective exchange rate index (EERI) is a measure of the value of the pound, calculated according to how much trade the UK does with other countries. The measure is thought to represent a broad snapshot of UK competitiveness.

The EERI is the average of a country's currency relative to a basket of other major currencies, weighted by the trade balance of a country's currency against other countries within the index. The Bank of England notes that the weights reflect "the relative importance of other currencies, as measured by trade flows between the relevant countries."

The figure shows an index of the Sterling EERI between January 2007 and December 2019. This measure was near the lowest level on records since the 2008 financial crisis. The EERI has decreased by over 20% since 2007 and has failed to return to pre-financial crisis levels after depreciating following the EU referendum.

This measure of the exchange rate has been more constant since 2019.

Figure 14: Sterling effective exchange rate index (Jan 2007=100)
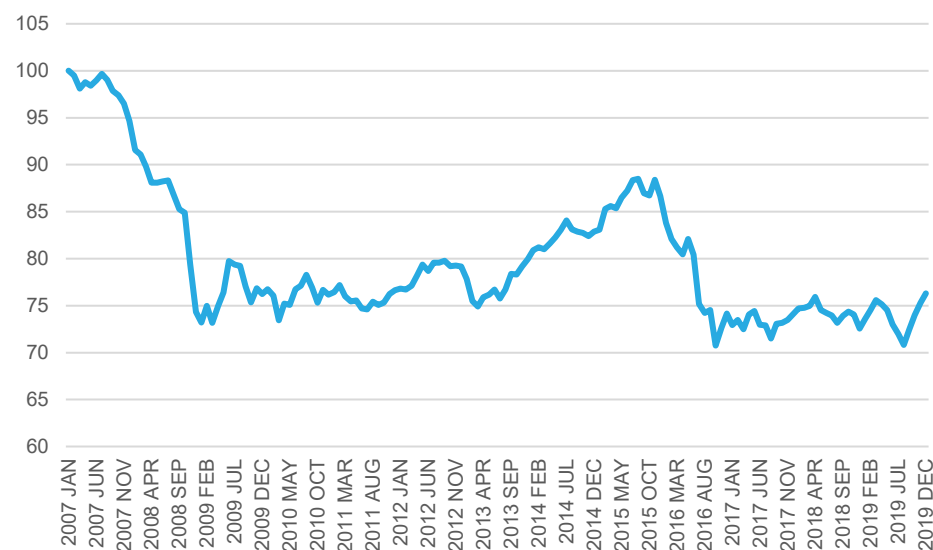
Source: Sterling Effective Exchange Rate Index, Bank of England

4. Demography

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4. Demography
Population

In 2019, London was home to 9.0m people, topping its 1939 peak of 8.6m. The majority of the capital's population lived in Outer London, which had 5.3m residents compared to Inner London's population of 3.6m. Approximately 2.2m people lived within a 2km radius of Crossrail stations; that is, 25% of London's population.*

The top figure opposite presents an index of population, highlighting the level of population growth in the benchmark areas between 2007 and 2019. This shows that population within each band of the Crossrail Impact Area, labelled as CIA in the charts (<500m, 500m-1,000m and 1,000m-2,000m) increased faster than the London average. The fastest growing area, 0 - 500m from stations, grew by 35% compared to the London average of 16%.

The largest population growth within the Crossrail Impact Area were often at Outer London stations and further afield.

There was particularly strong growth in the 2km area around some stations. The areas around Stratford, Canary Wharf and Custom House saw the largest relative increase in population in percentage terms. Canary Wharf, Whitechapel and Stratford had the largest absolute increase. This may have been reflective of an increase in development around these stations as the opening of the Elizabeth line neared.

The population density across London was 57 people per hectare: Inner London density was higher at 114 people per hectare, while Outer London was less dense at 42 people per hectare.

The highest population density around the Crossrail Impact Areas was the 500 – 1,000m impact area, with 65.5 people per hectare. The lowest was 1,000 – 2,000m with 49.2 people per hectare The Greater South East as a whole had a density of 6 people per ha.

* The Crossrail Impact Area is defined as LSOA boundaries falling within 500m, 500m-1,000m and 1,000m-2,000m bands from future Elizabeth line stations

Figure 15: Population growth (index 2007 = 100)

Source: Mid year population estimates ,ONS
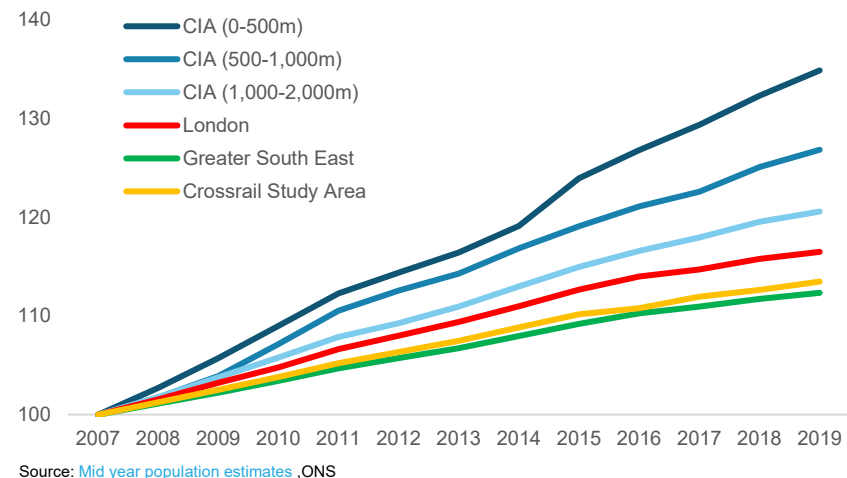
Figure 16: Population density by LSOA, people per ha (2019)

Source: Census area data & Mid year population estimates 2019 ONS

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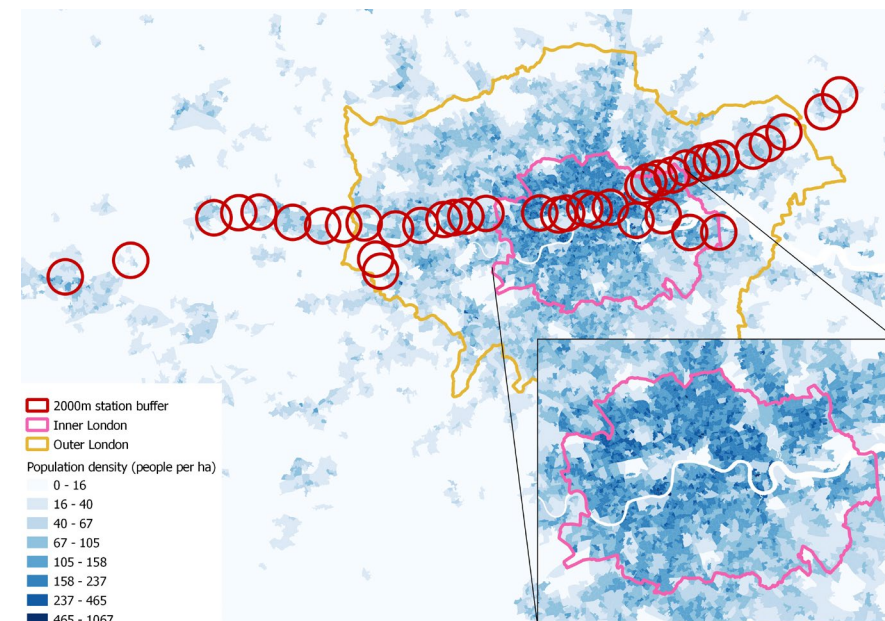
4. Demography
Immigration

In the year ending 2019, a total of 681,000 people migrated into the UK. The annual levels of migration were broadly consistent between 2007 and 2019 apart from 2012 when they fell to a minimum of 498,000. Inward immigration has not significantly changed over the baseline period.

Some 409,000 people emigrated from the UK in 2019, resulting in net in migration of 271,000.* Net migration has remained broadly stable but is at record levels in the longer term context.

Net migration for EU citizens was estimated to be 50,000 in the year ending 2019, compared to 189,000 in the year ending 2015. This represents a decrease of 74% since

2015 and by 2019, net migration of EU citizens was significantly below net migration of non-EU citizens, likely following the change in attractiveness of the UK following the 2016 EU referendum.

Net migration of British citizens was -61,000 (more British citizens left the UK than came back to the UK) in 2019, of greater magnitude than the -40,000 in 2015.

Longer term, international migration trends may continue to change as the UK adjusts to a new geopolitical position.

* Net migration figures for the UK for calendar years 2001-2011 were revised in light of the results of the 2011 census. However, these revisions are not reflected in the inflows and outflows so the sums of these will not match the revised estimates. ONS advises that users should continue to use these figures but bear in mind that the headline net migration estimates have been revised.

Figure 17: Long term international migration – UK annual inflows and outflows, 2007-2019, thousands
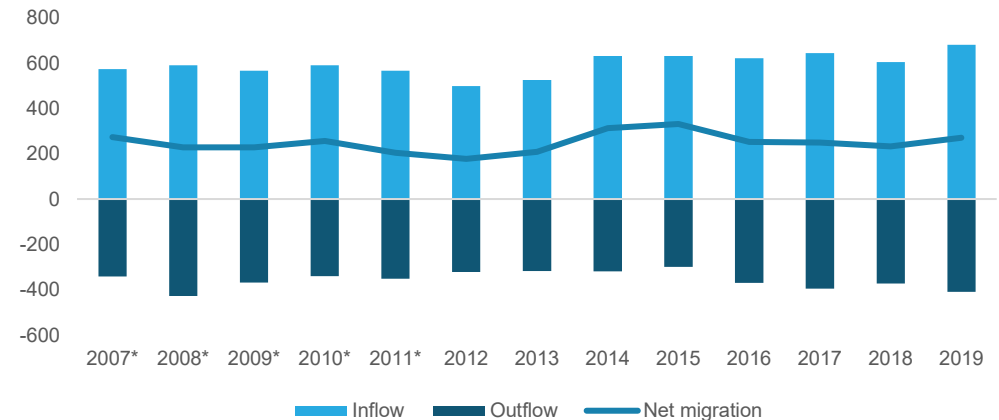
Source Long-term migration estimates, ONS; *Net migration figures for the UK for (year to December) 2001 to 2011 were revised in light of the 2011 census. Those revisions are not reflected in the inflows and outflows so they do not sum

Figure 18: Long term international migration – UK annual balance, 2007-2019, thousands
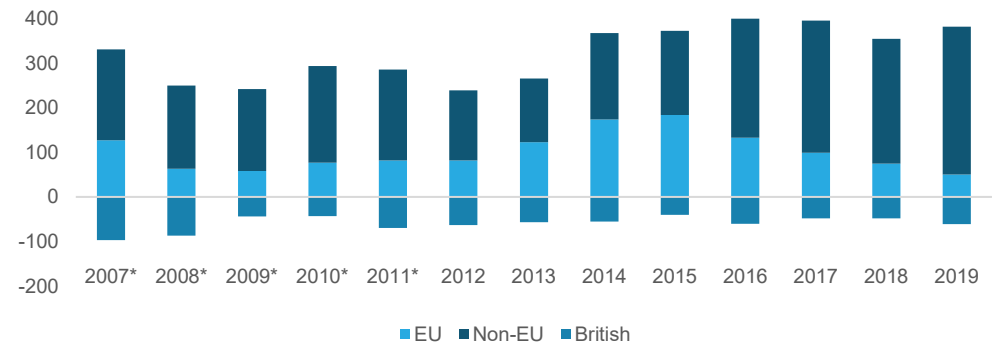
Source Long-term migration estimates, ONS; *Net migration figures for the UK for (year to December) 2001 to 2011 were revised in light of the 2011 census. Those revisions are not reflected in the inflows and outflows so they do not sum

4. Demography

Domestic migration patterns

In the year ending June 2019, 255,000 people moved to London from elsewhere in England and Wales, and 350,000 moved out of London, giving a net outflow of 95,000 (39,000 from Inner London and 55,000 from Outer London). Of the regions in England, London had the highest rate of internal migration net outflow (10.5 per 1,000 residents as of mid-2019).

Inner and Outer London had a similar net outflow per population: Inner London's was 10.6 per 1,000 residents compared to 10.4 in Outer London.

The Greater South East had a lower net outflow than London; this is partly because there was a net inflow of people moving in to the East and South East from other parts of the country.

The bottom figure shows that domestic migration patterns were somewhat changeable from year to year. Inner London had a steady net outflow of 40,000 whereas the Greater South East had a net outflow of between 65,000 and 91,000.

Figure 19: Internal migration, year ending June 2019
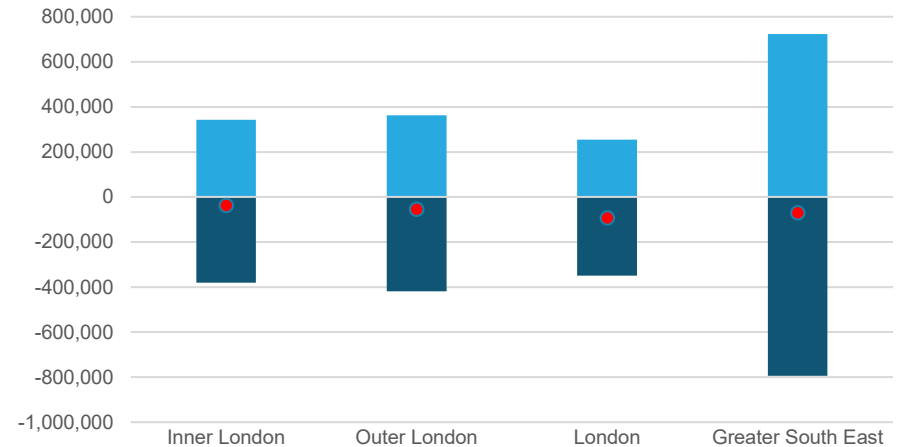
Source: Internal migration, ONS — Inflow ■ Outflow ● Net

Figure 20: Net internal migration, year ending June 2016 - 2019

■ Inner London ■ Outer London ■ London ■ Greater South East

Source: Internal migration, ONS

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5. Employment & business structure

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5. Employment and business structure
Employment

This section of the report focuses on the employment nature and evolution along the future Elizabeth line during the baseline period. It aims at getting a better understanding of the labour market across different geographies and identifying diverging trends or specificities between wider geographies and areas closer to future Elizabeth line stations.

In 2019 the total estimated employment* in areas within 500m of future Elizabeth line stations amounted to 465,500; it was 1,162,500 in areas within 500m to 1km and 1,020,000 in areas within 1 to 2km.

Whilst it has been suggested that local businesses may have already started locating closer to planned stations due to the announcement of the arrival of the Elizabeth line, our analysis did not find a clear pattern between 2009 and 2019, as areas within walking distance to stations (within 500m) grew more slowly (7.6% employment growth) than close, but further out areas (18.3% growth 500m-1km).

More widely, inner London drove employment growth rather than outer London with a 32.5% increase in jobs as compared to only 14.9% in outer London. Employment in the South East and East of England regions grew at a lower rate than in London.

Looking at average year-on-year growth rate, employment in areas 1-2km around the future stations was less volatile than employment in areas closer to stations (see Figure 22 in the right). This is true even if the large volatility in 2015 is not taken into account, which was most likely caused due to the reorganisation of local areas in that year.

Figure 21: Employment estimates, 2009 – 2019
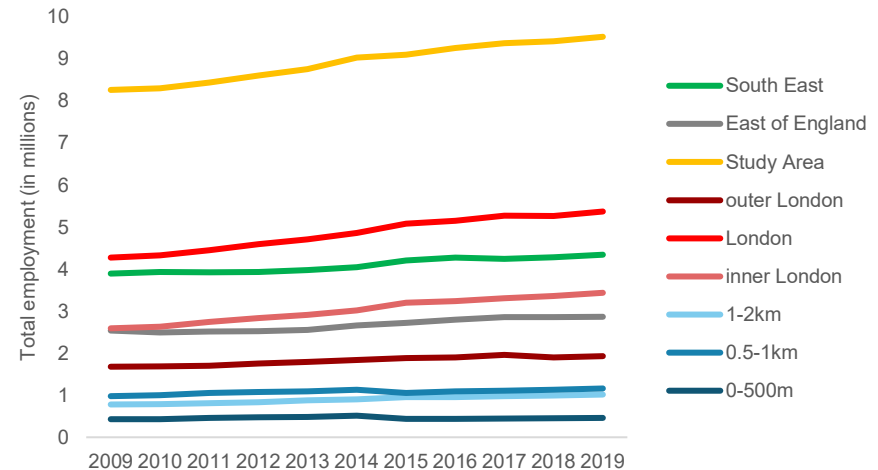
Figure 22: Employment change year on year, 2010 – 2019

Source for both graphs: Business Register and Employment Survey at the LSOA level*, Employment count, 2009-2019**, ONS, 2021
* Excluding units registered for PAYE only up to 2014
** Many LSOA boundaries in the country were redrawn in 2015, which means that we had to develop a set of code in Python to match the pre-2015 area boundaries with the current ones. Our approach used the 2015 employment shares of split LSOAs to calculate the pre-2015 likely measures (using the lookup table provided by ONS)

* Employment includes employees plus the number of working owners. BRES therefore includes self-employed workers as long as they are registered for VAT or Pay-As-You-Earn (PAYE) schemes. Self employed people not registered for these, along with HM Forces and Government Supported trainees are excluded.

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5. Employment and business structure

Employment density

Average employment density in the Crossrail Study Area amounted to 4.6 jobs per hectare in 2019. The average for London in 2019 was 34 jobs per hectare, comprising of inner London's 102 jobs per hectare and outer London's 16 jobs per hectare.

The highest employment density was observed in areas within 500m from future Elizabeth line stations, at an average 194 jobs per hectare. The density within 0.5 – 1km was similar to the average inner London level of 112 jobs per hectare, while the figure for areas 1 – 2km from future Elizabeth line stations was similar to the average London level density of 45 jobs per hectare.

The highest increase in employment density from 2009 to 2019 was observed in inner London and areas from 1 to 2km from future Elizabeth line stations. Areas within a 500m radius from the stations observed a lower percentage increase than elsewhere in London as a whole (8% compared to 26% for London), potentially due to already high initial employment densities and building constraints in the area.

Figure 23: Employment density in 2009 and 2019, and 2009-2019 percentage change
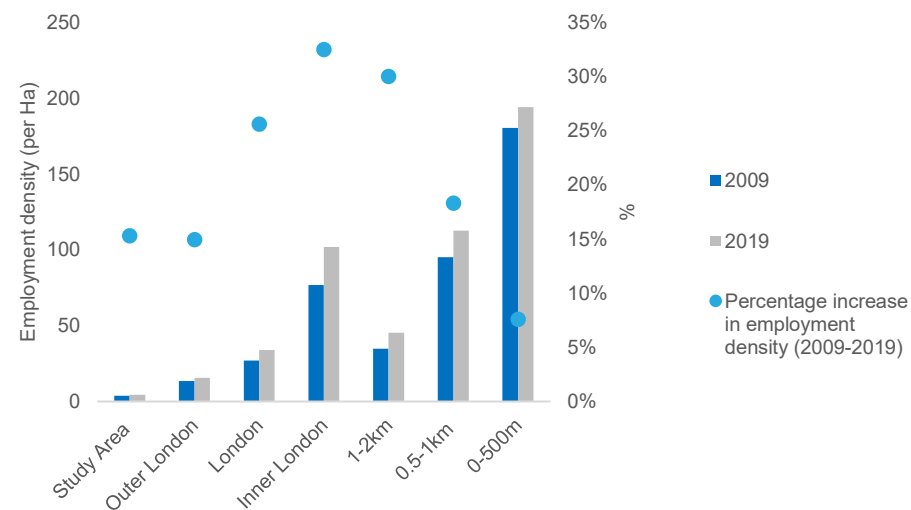
Source: Business Register and Employment Survey at the LSOA level*, Employment count, 2009-2019**, ONS, 2021 and LSOA boundaries shapefile and ARUP QGIS Analysis to calculate LSOA Surface

* Excluding units registered for PAYE only up to 2014
** Many LSOA in the country were redrawn in 2015, which means that we had to develop a set of code in Python to match the pre-2015 area boundaries with the current ones. Our approach used the 2015 employment shares of divided LSOAs to calculate the pre-2015 likely measures (using the lookup table provided by ONS)

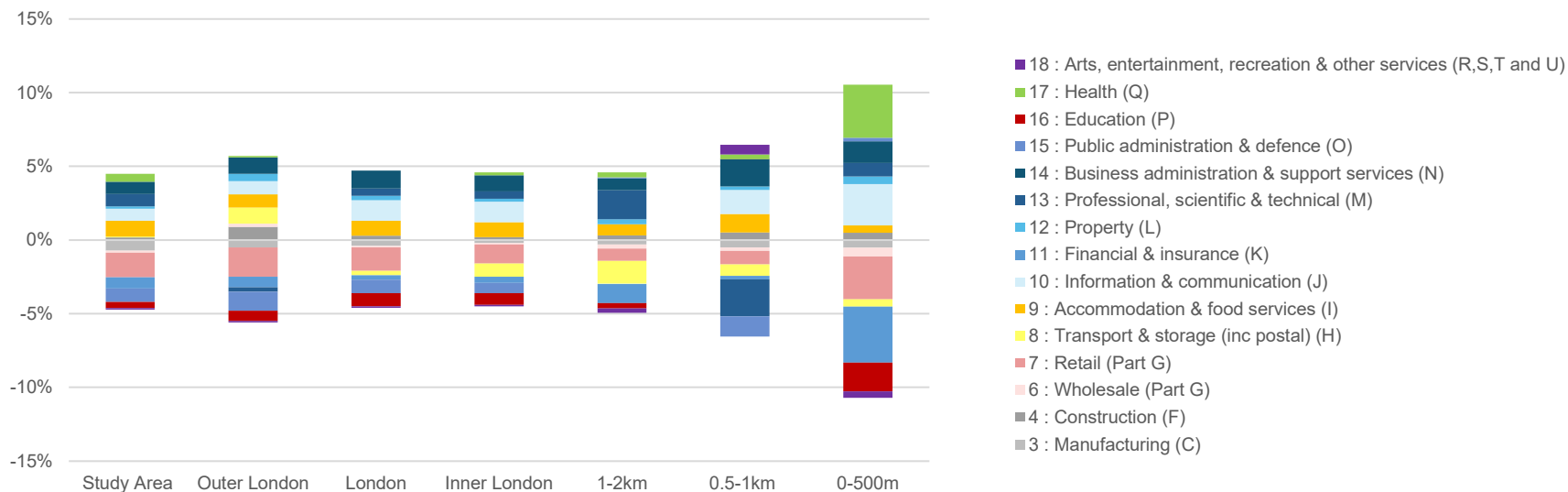# 5. Employment and business structure

Sectoral employment

The sectoral employment breakdown by broad industrial groups (as per ONS classification) demonstrates the predominance of knowledge economy sectors and, in particular, Professional, Scientific & Technical (M), Financial & Insurance (K) and Information & Communication (J) across all areas shown in Figure 24. These were important across the Crossrail Study Area, and were disproportionately strong in the areas immediately around future Elizabeth line stations.

The accommodation and food services industry was the most important sector outside of the knowledge economy, with 10% of total employment within 500m of future Elizabeth line stations in 2019.

Information & Communication services was noticeably lower in the areas further from future Elizabeth line stations and in outer London. It made up 11% of employment in the areas within 500m from the stations, compared to 5% in Outer London.

Manufacturing, Construction, Education and Transport & Storage sectors, these represented a significantly higher proportion of employment further away from the future stations, demonstrating the opposite pattern to the Information and Communication sector. [again, need to use colour in the chart to demonstrate the points that we are making in the text]

Figure 24: Sectoral employment breakdown, 2019
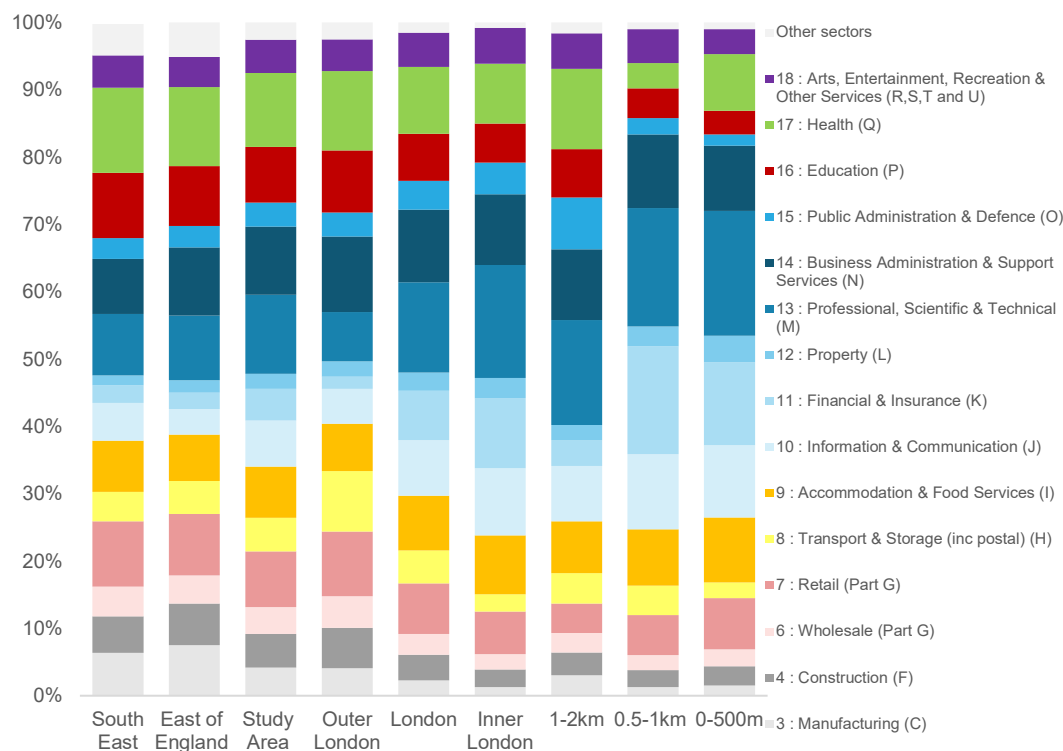
Source: Business Register and Employment Survey at the LSOA level* per broad industrial group**, Employment count, 2009-2019***, ONS, 2021
* Excluding units registered for PAYE only up to 2014
** Sectors with less than 0.1% employment not shown
*** Many LSOA in the country were redrawn in 2015, which means that we had to develop a set of code in Python to match the pre-2015 area boundaries with the current ones. Our approach used the 2015 employment shares of divided LSOAs to calculate the pre-2015 likely measures (using the lookup table provided by ONS)

5. Employment and business structure

Sectoral employment

The areas closest to future Elizabeth line stations changed most substantially over the period 2009 to 2019, in terms of employment structure. The share of employment in Information and Communication Services (J) and Health (Q) near future Elizabeth line stations increased by 3% and 4% respectively and share of employment in Retail (G) and Financial Services (K) decreased by 3% and 4% respectively. In other comparison areas these increases in Information and Communication Services (J) and Health (Q) were lower.

Areas within 0.5 – 1km from future Elizabeth line stations had the highest decrease of share in Professional, Scientific and Technical (M) – with this dropping by 2% despite the anticipation of the line potentially incentivising such sectors to move in.

Across all comparator areas, retail was the sector that consistently experienced a drop as a proportion of the total employment.

Figure 25: Change in sectoral employment structure, 2009-2019

Legend:
- 18 : Arts, entertainment, recreation & other services (R,S,T and U)
- 17 : Health (Q)
- 16 : Education (P)
- 15 : Public administration & defence (O)
- 14 : Business administration & support services (N)
- 13 : Professional, scientific & technical (M)
- 12 : Property (L)
- 11 : Financial & insurance (K)
- 10 : Information & communication (J)
- 9 : Accommodation & food services (I)
- 8 : Transport & storage (inc postal) (H)
- 7 : Retail (Part G)
- 6 : Wholesale (Part G)
- 4 : Construction (F)
- 3 : Manufacturing (C)

Source: Business Register and Employment Survey at the LSOA level* per broad industrial group**, Employment count, 2009-2019***, ONS, 2021
* Excluding units registered for PAYE only up to 2014
** Sectors with less than 0.1% employment not shown
*** Many LSOA in the country were redrawn in 2015, which means that we had to develop a set of code in Python to match the pre-2015 area boundaries with the current ones. Our approach used the 2015 employment shares of divided LSOAs to calculate the pre-2015 likely measures (using the lookup table provided by ONS)

6. Labour market, earnings & incomes

6. Labour market, earnings & incomes

Commuting patterns (workplace population)*

The figure shows method of travel to work for the *workplace* populations of inner and outer London, London and the Greater South East. Inner London is the only area of employment where workers are unlikely to drive a car/van to access employment: in inner London these were the third most popular modes of transport after the London Underground and the train. Only 13% of inner London's workplace population commuted by car or van, compared to 45% in outer London.

27% of London's total workforce population commuted by car/van relative to 47% across the Greater South East, whereas 45% and 47% of outer London and the Greater South East's workplace population commuted by car or van.

Inner London's workplace population travelled the furthest to get to work. The average worker based in inner London travelled 22.2km to get there compared with 13.7km for those accessing outer London jobs. Since the Elizabeth line will significantly improve accessibility from various points of outer London and the South East to central London, it may be possible that it increases the average distance travelled by workers to inner London.

* Commuting data is not available for the workplace population at the same level of detail as it is for the resident population. As a result, it cannot be estimated for the Crossrail Impact Area or the Crossrail Study Area.

Figure 26: Average distance travelled to work (km), 2011 (workplace population)

Inner London	Outer London	London	Greater South East
22.2	13.7	17.8	16.5

Source: Census, ONS, 2011, QS702EW Distance travelled to work

Figure 27: Mode of travel to work (% of commuters aged 16-74) (workplace population)
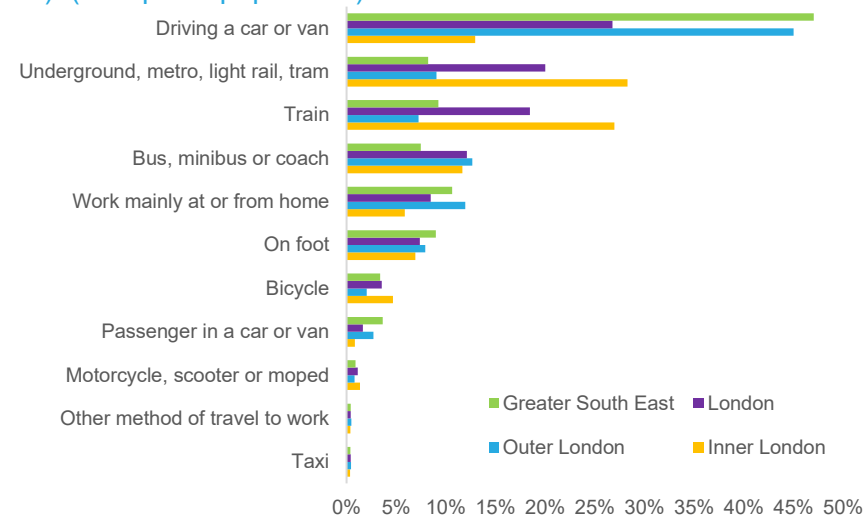
Source: Census, ONS, 2011, WU03UK Location of usual residence and place of work by method of travel to work

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6. Labour market, earnings & incomes
Commuting patterns (resident population)

The average distance travelled to work for *residents* in Inner London was less than outer London at 9.6km compared to 12.4km in 2011.

Differences between average distance travelled to work suggest that people living in places further away from central London will, on average, travel further to work (see table), potentially to access the relatively lucrative opportunities in central London itself.

Similar to workplaces, Inner London was the only area where driving a car or a van was not the dominant mode to access employment for residents (car/van was the third most popular mode in this area). Only 14% of journeys to work were taken by car in Inner London in 2011, compared to 49% in the Greater South East as a whole.

In the each of the bands of the Crossrail Impact Area (0-500m, 500m-1,000m, and 1,000m-2,000m) 26%, 27% and 30% of journeys to work were undertaken by car respectively, in 2011. 41% of commuting trips for Inner London residents travelled by train or tube compared with 31% in Outer London. Indicating the importance of this mode to more central areas. Both the Inner and Outer London areas may increase once the Elizabeth line opens.

Figure 28: Average distance travelled to work (km), 2011 (resident population)

0 - 500m	500 - 1000m	1000 - 2000m	Study Area	Inner London	Outer London	London	Greater South East
12.5	11.5	11.4	14.3	9.6	12.3	11.2	14.9

Source: Census, ONS, 2011, QS702EW Distance travelled to work

Figure 29: Mode of travel to work by study area (resident population)
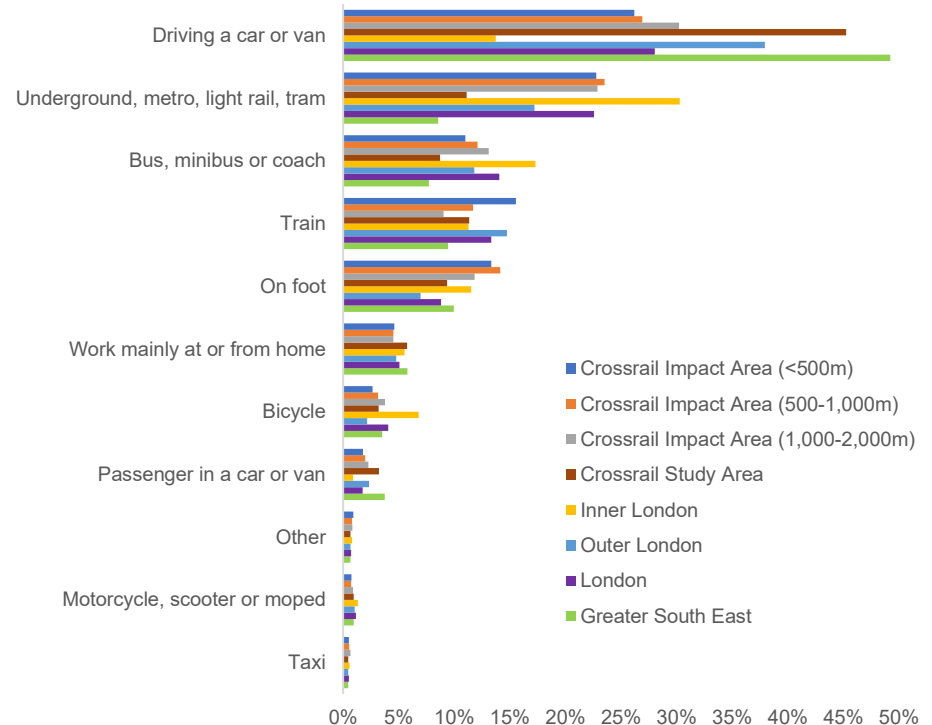
Source: Census, ONS, 2011, WU03UK Location of usual residence and place of work by method of travel to work

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6. Labour market, earnings & incomes

Unemployment

In December 2019, the number of London residents who were unemployed stood at 218,000; and the unemployment rate of working age residents (aged 16-64) was 4.6%. Of these, 126,000 unemployed people were resident in Outer London, and 92,000 were resident in Inner London. The unemployment rate in Outer and Inner London were comparable, at 4.7% and 4.5% respectively.

Unemployment data for 2011 is presented alongside the most recent data [2019] since this is available at more detailed geography, enabling comparison to the Crossrail Impact Areas. Unemployment rates in the Crossrail Impact Area were higher than for the other comparators in 2011.

Unemployment rates have fallen in all the areas since 2011, suggesting that unemployment near Crossrail stations may have also decreased.

Rates of unemployment were at relatively low levels in 2019, in the context of trends over the last decade. Across all areas, unemployment rates increased during the global recession before falling.

More recently, unemployment has increased during the pandemic but employment has recently rebounded. The longer term impact is uncertain.

Figure 30: Unemployment rate – aged 16-64, Jan 2019 – Dec 2019; Unemployment rate, 2011 (% of economically active)

Impact area	Unemployment rate (2011) (%)	Unemployment rate (Jan 2019 – Dec 2019) (%)	Number of unemployed (Jan 2019 – Dec 2019) (people)
CIA (0 - 500m)	8.0	-	-
CIA (500 - 1000m)	8.2	-	-
CIA (1000 - 2000m)	8.3	-	-
Inner London	7.8	4.5	91,800
Outer London	6.9	4.7	126,200
London	7.3	4.6	218,000
Greater South East	6.2	3.7	461,000
Crossrail Study Area	6.0	-	-

Figure 31: Unemployment rate (% of economically active), aged 16-64. 2019

2000m station buffer
Inner London
Outer London

Unemployment rate
1.8 - 2.6
2.6 - 3.3
3.3 - 4
4 - 4.9
4.9 - 6.1
6.1 - 8.7

(Source: Annual Population Survey, ONS)

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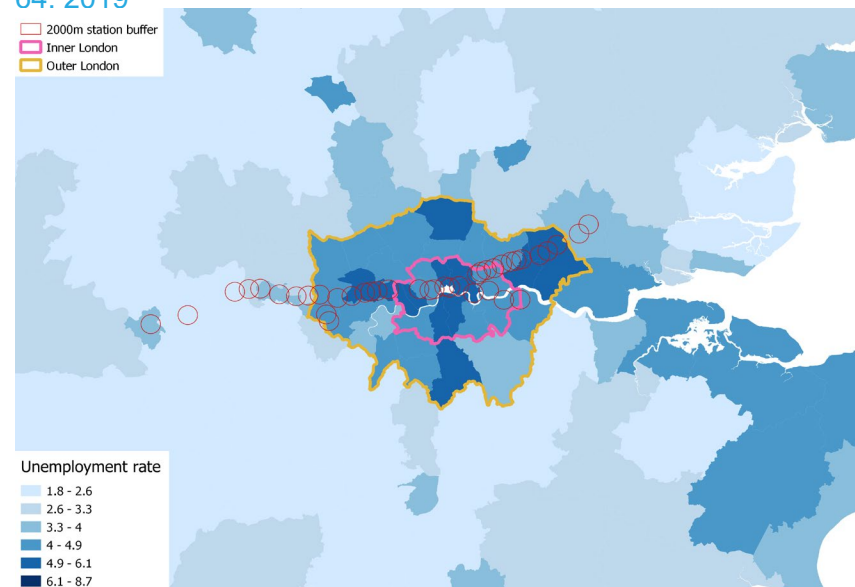
6. Labour market, earnings & incomes
Economic inactivity

Economic inactivity rates varied across local authorities, from 6% to above 30%, and averaging out at around 20% across Inner London, Outer London, and the South East. Within London, boroughs to the north of the river Thames tended to have a higher level of inactivity than those to the south. Some London boroughs, such as Enfield and Kensington & Chelsea, had among the highest levels of economic activity in the Greater South East.

Figure 32: Percentage of 16-64 year olds who are economically inactive (resident population), 2019
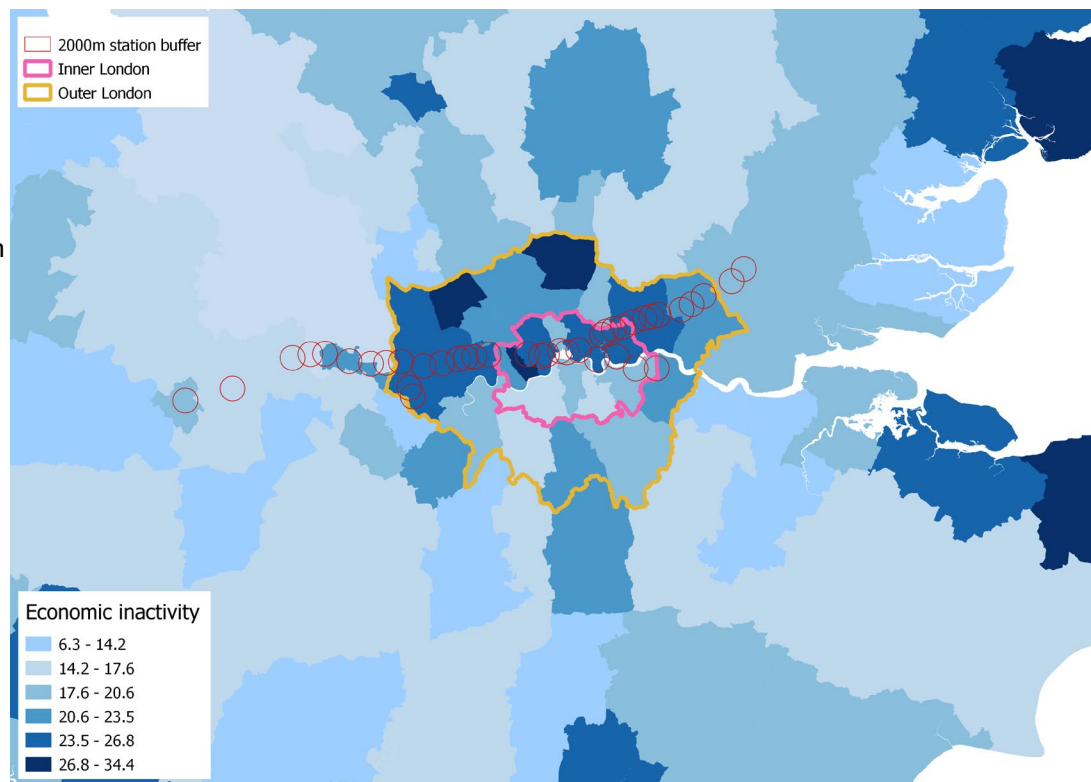
Source: Model-based unemployment estimates, ONS

Figure 33: Percentage of 16-64 year olds who are economically inactive (resident population, 2019

Inner London	Outer London	London	Greater South East
21	22	22	20

Source: Annual Population Survey, ONS

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6. Labour market, earnings & incomes

Earnings

Both workplace and residence-based annual gross pay is higher in London than the East and South East.

Between 2009 – 2019, workplace annual gross pay level followed a general upward trend in the East and Greater South East, while it was more static in London, prior to an upward trend from 2016.

From 2011 to 2012, there was a fall in the workplace-based annual gross pay of -2.9% in London, but not in the East nor South East. A fall was also observed in London in 2015 (-2.7%) prior to increases in the next three years.

The resident-based mean annual gross pay in London declined from 2011 to 2015 before picking up in 2016. In the East and South East, it has grown relatively steadily over the same time period. This might be a result of both pay freezes observed in the private and public sectors in these years, as well as economic restructuring following the shock of 2008-2009 and more low-paid jobs being created*.

In London, the resident-based mean annual gross pay was lower that the workplace pay, suggesting that Londoners have lower renumeration than those that are willing to travel further to work.

*ONS: Changes in real earnings in the UK and London: 2002 to 2012

Figure 34: Workplace-based mean annual gross pay for full-time workers, 2009-2019
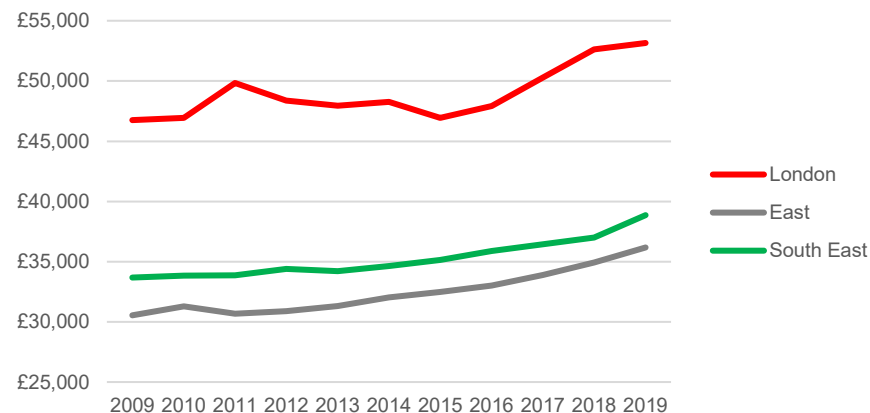
Figure 35: Resident-based mean annual gross pay for full-time workers, 2009-2019
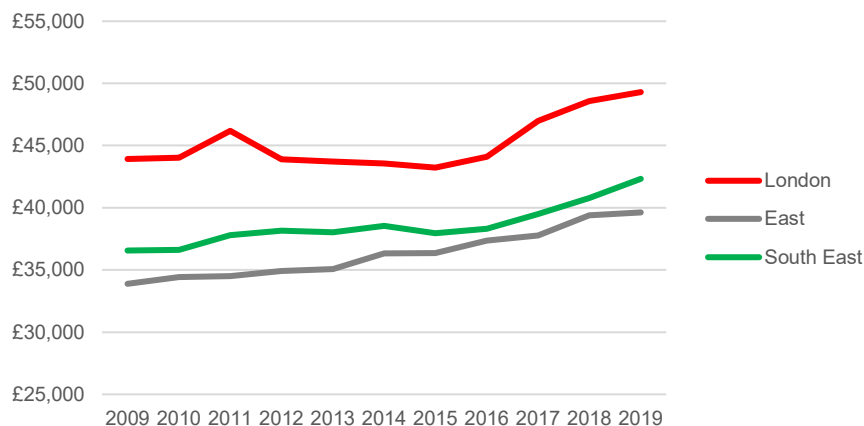
Source for both graphs: Annual Survey of Hours and Earnings, 2009-2019, workplace-based and resident-based, ONS, 2021

6. Labour market, earnings & incomes
Household expenditure

Over the period of 2018 to 2020, average weekly household expenditure in London was £703. This was marginally higher than total expenditure in the South East (£699), and Greater South East (£670), and significantly higher than the East (£608).

However, larger household sizes in London (2.7 compared to 2.5 in the Greater South East) meant that the average weekly expenditure was often similar, or lower.

The graph (bottom) disaggregates this spending by broad expenditure groups for London and the Greater South East for the same period. In London, the spending group that accounted for most of the expenditure was housing (net, excluding mortgage interest payments and council tax), fuel and power, which accounted for 19% of household spending. Housing (net), fuel and power was also the highest spend group in the Greater South East.

Expenditure on transport was the third highest group for both areas: 12% of household expenditure was spent on this category in London, compared to 14% in the Greater South East (households spent £82 on transport in London per week but £91 in the Greater South East, which may be due to savings from lower car ownership levels).

*Household expenditure data is released in 2 yearly intervals, ending on even years. Data for the period of 2018 to 2020 is presented as the most relevant to 2019.

Figure 36: Household expenditure by region, 2018 to 2020

Household expenditure	London	East	South East	Greater South East
Total expenditure	£703	£608	£699	£670
Average weekly expenditure per person (£)	£260	£255	£285	£267
Weighted average number of persons per household	2.7	2.4	2.5	2.5

Source: Family Spending, ONS; NB: Greater South East figures weighted by number of households so may be subject to rounding errors

Figure 37: Household expenditure by region and expenditure group, 2018 to 2020
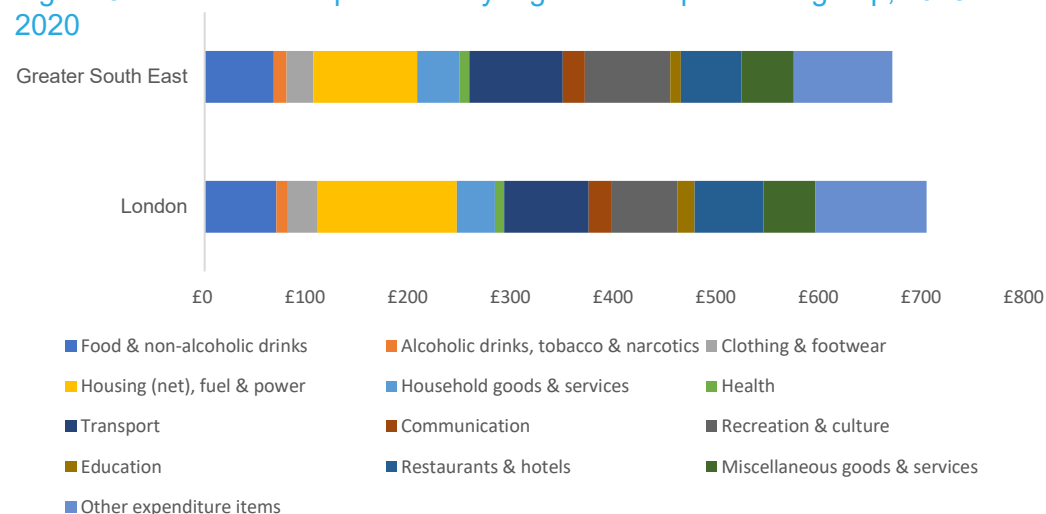
- Food & non-alcoholic drinks
- Alcoholic drinks, tobacco & narcotics
- Clothing & footwear
- Housing (net), fuel & power
- Household goods & services
- Health
- Transport
- Communication
- Recreation & culture
- Education
- Restaurants & hotels
- Miscellaneous goods & services
- Other expenditure items

Source: Family Spending, ONS; NB: Greater South East figures weighted by number of households so may be subject to rounding errors

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6. Labour market, earnings & incomes
Index of Multiple Deprivation

Levels of deprivation were measured using Indices of Multiple Deprivation (IMD) data from the Department for Levelling Up, Housing and Communities (DLUHC). To form the IMD rating, each lower super output area (LSOA) is scored on a number of categories and an overall ranking of multiple deprivation is produced.

The graph shows that the proportion of LSOAs close to Crossrail stations, and across Inner London that were in the most deprived 20% in England fell substantially in the period 2007-2019. A shallower fall was experienced in Outer London and across the Greater South East. Nevertheless, by 2019, Inner London still had a slightly higher proportion of LSOAs in the 20% most deprived (23%), the highest of any study area.

In 2019, the three impact areas around stations were all below the national average of 20%, ranging between 17% for the 0 – 500m area and 19% for the 1000 – 2000m area. The largest improvement was in the 0 - 500m area where, in 2007, 44% of LSOA's were in the top 20% most deprived. By 2019, this had fallen to 17%.

All benchmarking areas improved on their 2007 ranking and Outer London and the Greater South East performed significantly better than the national average.

The bottom figure maps deprivation. Here the shades of blue represent different deciles of deprivation; the darker the blue, the more deprived an area. Although widely spread around the Study Area, there is a concentration in a north-eastern corridor from central London, and an eastern one.

Figure 38: Proportion of LSOA's in top 20% most deprived, by study area
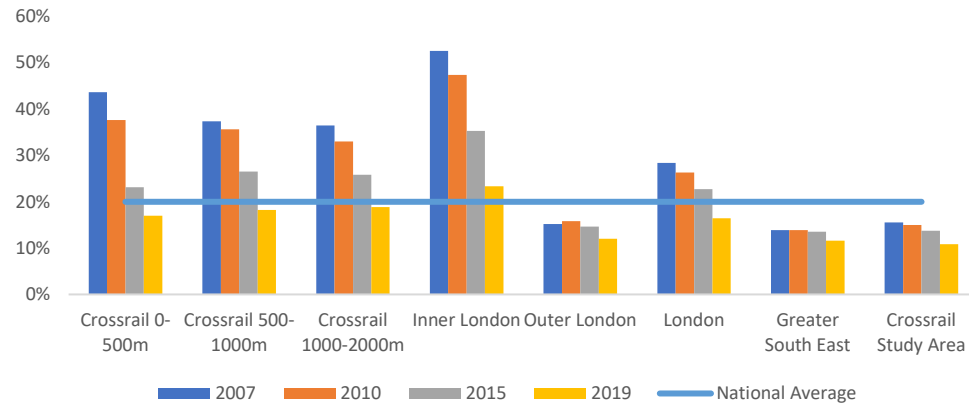
Source: Index of Multiple Deprivation, MHCLG

Figure 39: Decile of IMD by LSOA (2019)

Source: Index of Multiple Deprivation, MHCLG

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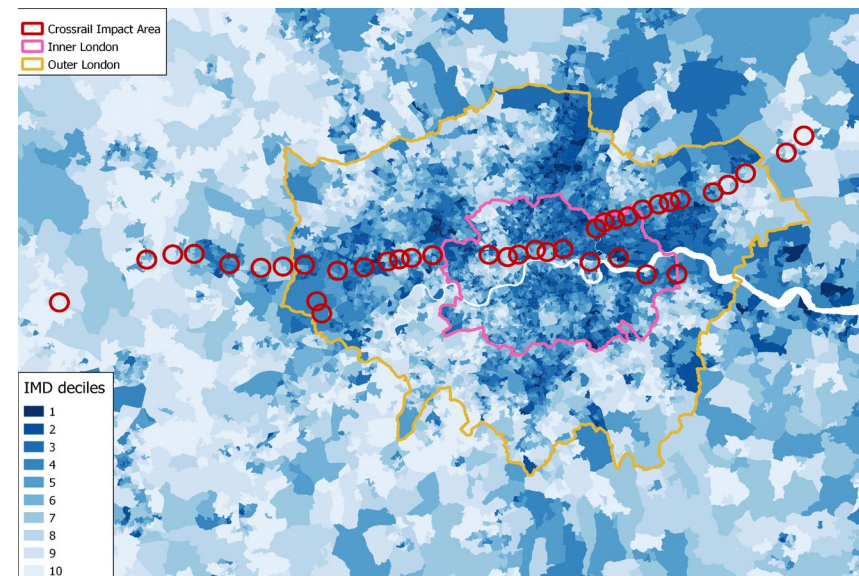
7. Property market & land values

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7. Property market and land values
Residential property and housing stock

Although the Business Case for Crossrail was not built on housing or development targets, the opening of the line will affect these markets. The purpose of the following section is to provide a comprehensive baseline of the property market and land values prior to the Elizabeth line opening. It does not look at effects of the announcement, although some patterns observed could be the reflection of markets' reaction to it.

Throughout the baseline period, the nature of the UK housing market, and supporting policy context has shifted. Between 2008 and 2019, the total housing stock in England increased annually by an average 0.74% per year. In 2019, there were an estimated 24.4m dwellings, showing an increase of 240,000 dwellings from the previous year.

Housing stock has continuously increased, but the rate of change fluctuated: decreasing sharply from 2008, with recovery starting in 2013. The tenure of the housing stock has also shifted. There has been a significant growth in private rental stock, mirrored by a decrease in local authority housing stock. This decline can be attributed to large scale housing stock transfer towards private, combined with lower local authority building rates, and 'right to buy'. Whilst the decline in local authority housing and other public sector dwellings suggest the withdrawal of the public sector from the dwelling stock, it is being somewhat balanced by funding schemes and grants (through Homes England and others).

Figure 40: Dwelling stock in England year on year, 2006-2019
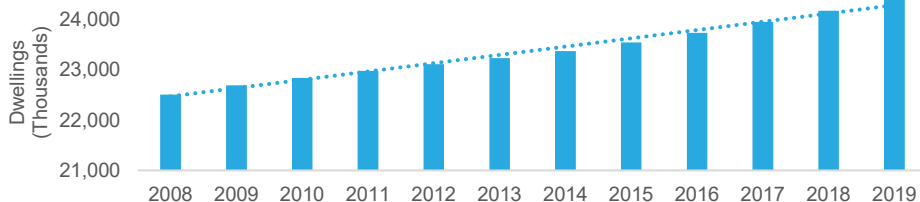
Source : DLUHC, Table 104 number of dwellings by tenure, England (historical series)

Figure 41: Net change as a % of existing stock in England 2006-2019
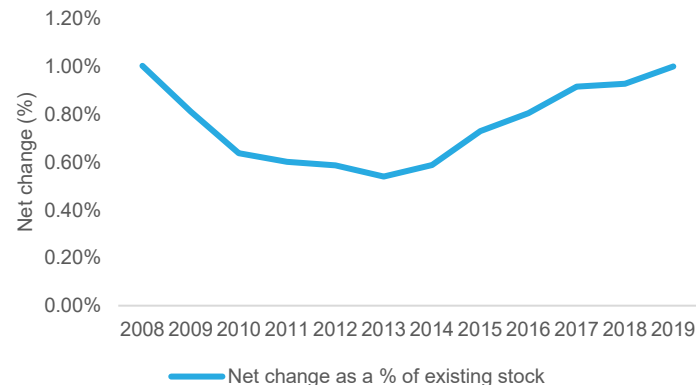
Source : DLUHC, Table 104

Figure 42: Dwelling stock in England by tenure, 2006-2019

Source : DLUHC, Table 104

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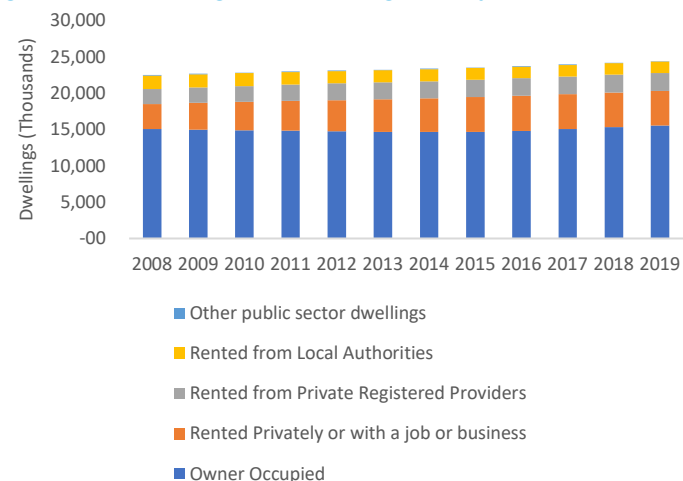
7. Property market and land values
Housing stock (continued)

Throughout the baseline period, total housing stock has remained relatively stable across London.

Figure 43: Dwelling stock in London, inner London and outer London

There was significant variation in the quantum of housing stock in authorities along the Crossrail route. The figure above shows a comparison of total housing stock in 2006, 2015 and 2019 across line-wide authorities. Across all line-wide authorities, housing stock increased, with the highest levels of growth in outer London to the east and west, including Hillingdon, Ealing, Westminster, Tower Hamlets and Newham. The London Borough of Islington also showed a significant growth in housing stock across the baseline period.

Figure 44: Comparison of dwelling stock by line-wide local authority, 2010/2015/2019
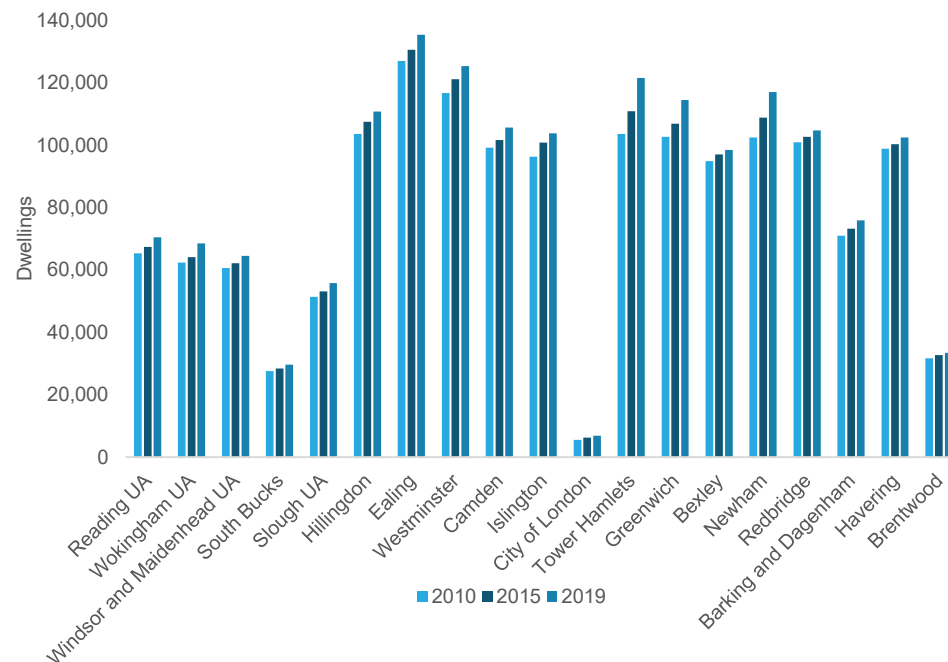
Source : DLUHC, Table 100 : number of dwellings by tenure and district, England

The composition of London's housing stock has changed, with new delivery mechanisms helping to accommodate housing need. Over the decade to 2019, around 240,000 new homes were built in London. The net increase in the dwelling stock was higher at around 285,000 homes, due to a decline in the number of demolitions and increased conversions of use class, particularly in the case of office to residential. This demonstrates the increasing contribution of non-new build dwellings make to the overall housing stock in London. The City of London and Westminster, for example, saw 42% and 38% of their net completions provided by changes of use over this period*.

*For the City of London this does not include office to residential prior approvals, as the City is entirely exempt.

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7. Property market and land values
Housing delivery

The baseline assessment was set against a strong policy context, with a number of key Government and mayoral initiatives supporting large scale housing delivery across London. The identification of Opportunity Areas in the London Plan may have helped to respond to significant housing need across the capital, and the long term under delivery of housing across the South East and East of England. The now-abolished South East Plan identified a need for 654,000 net additional dwellings across the period 2006-26, equivalent to an annual average provision of 32,700.

Figure 45: Net additional dwellings across the baseline period in the South East, compared to South East Plan regional targets
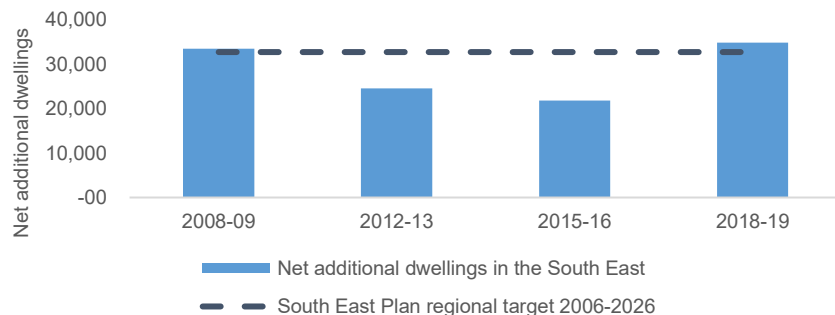
Sources : DLUHC, table 118 : annual net additional dwellings and components, England and the Regions – 2000-01 to 2019-20 ; South East Plan regional targets (DCLG, table 118)

Demand for housing in the South East was particularly acute over the baseline period, and significantly exceeded supply in many local housing markets. The evidence base for the Mayor's Housing Strategy 2018, Housing in London, summarised key housing trends across London. Despite a resurgence in house building activity, the 2019 rate remains well below current growth in population and jobs.

At the national level, the 2014 Barker Review of Housing Supply, identified that around 240,000 homes would be required annually across the UK to align with population growth, to replace ageing housing stock and to accommodate the growing backlog. Housing delivery across the UK over the ten years to 2018 was significantly below this recommendation, peaking in 2006/07 at around 223,000 dwellings completed.

Figure 46: UK House Building : Permanent dwellings completed, 1970-2019
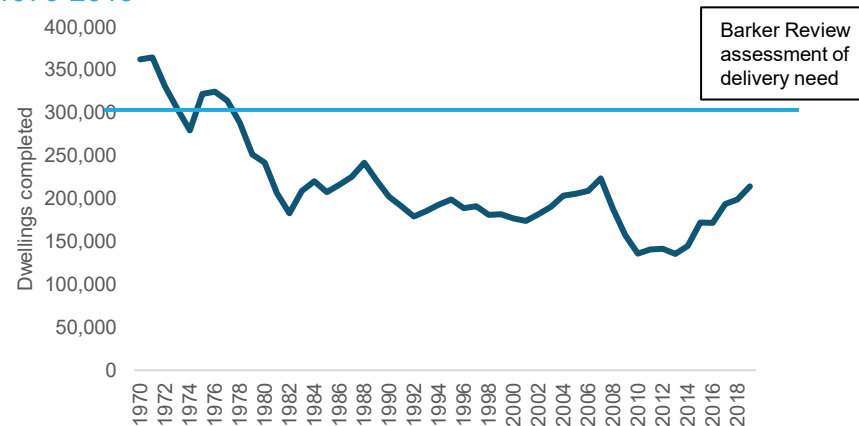
Source : ONS UK Housing Statistics - UK House Building: Permanent dwellings started and completed - table 3a

Although housing stock has been increasing, the delivery of new housing in the UK has experienced a long term downward trend since the 1970s. A number of key trends may have contributed to this decline, including skills shortages in the construction industry, the planning system, local market conditions in areas with a high availability of land, the 2008 recession and more recently the turmoil and uncertainty surrounding the financial crisis, the EU referendum and Brexit, as well as the COVID-19 pandemic.

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7. Property market and land values

Housing delivery – starts and completions

Housing starts and completions are an important indicator of house building activity in the UK. The country as a whole has experienced an overall weakening in construction activity, with starts and completion rates approximately 10% lower (bottoming at 40% lower in 2012) than levels prior to the 2008 recession*. This reflected increasing house builder caution in a period of economic and political uncertainty. In 2019, the number of new build housing completions by private housebuilders showed an increase of 6% from the previous year, with a 16% increase in homes delivered by local authorities, and was at the highest level since 2008, perhaps due to Government planning reforms to increase building and delivery rates.

Figure 47: Permanent dwellings started and completed in the UK through the baseline period
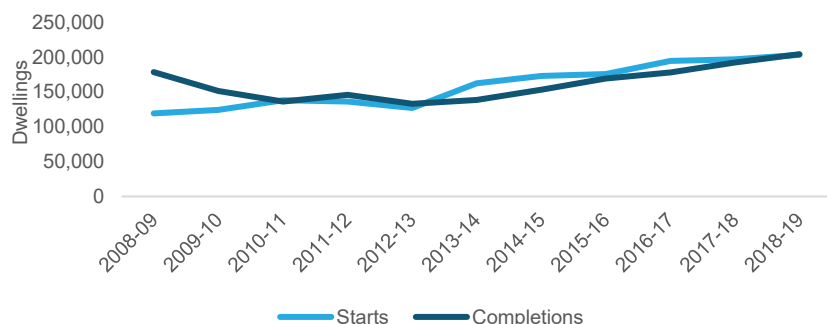
Source : ONS, House building, UK : permanent dwellings started and completed - Table 2a

Housing starts in London, East of England and South East experienced a decline between 2008/09 and 2012/13, mirroring uncertainty in the economic climate. For the years 2020 and 2021 a decline is expected due to the impacts of the COVID-19 restrictions on construction, labour force and supplies of materials, with the new equilibrium being uncertain.

Figure 48: Housing starts and completions by region (SE,EE and London)
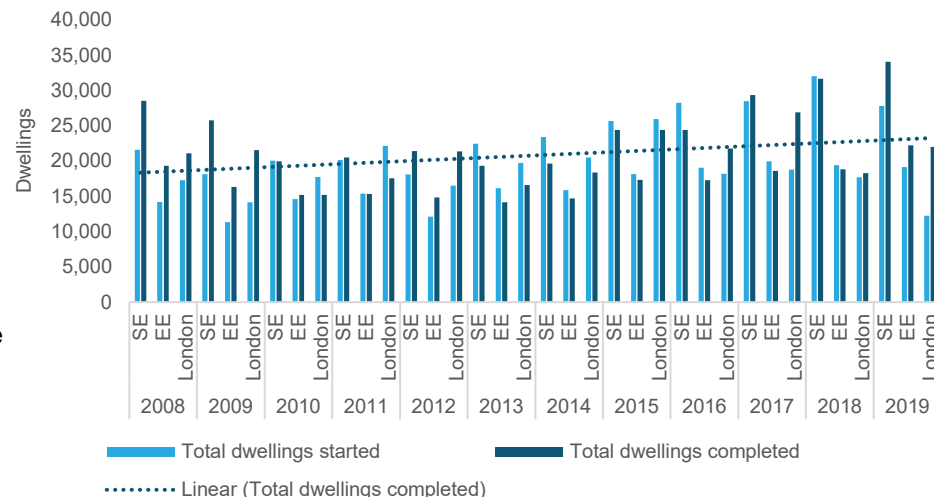
Source: ONS, 2021, Table 6

Economic growth in the wider South East and East of England regions has driven demand for housing and commercial property. There has been strong regional growth, with Cambridgeshire, Northamptonshire, Oxfordshire and the Thames Estuary experiencing high levels of housing starts.

The South East has consistently had the highest number of housing starts as compared to London and the East of England, with the exception of 2011/12. More recently, the East of England has lagged behind, with lower levels of housing activity. Over the 2015-2017 period, housing completions in London rose sharply, reflecting wider policy agendas surrounding housing delivery. However the past two years showed that this trend was already losing momentum.
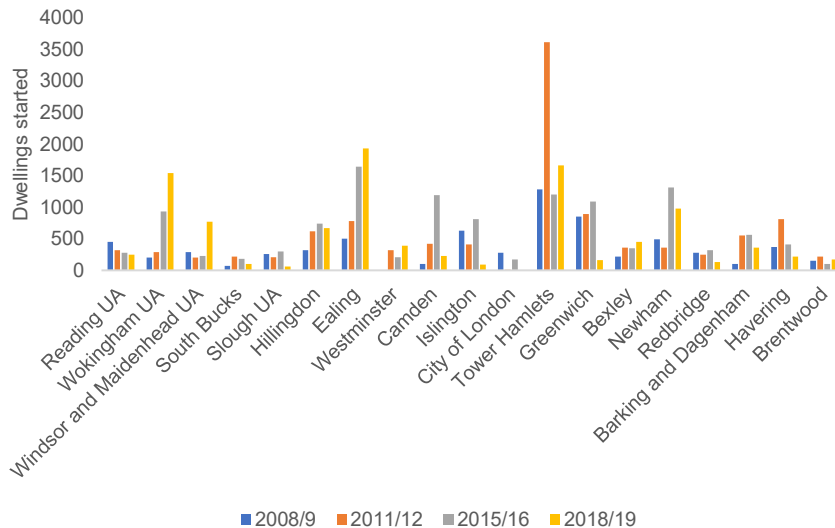
*UK Housing Market Prospects Spring 2016, BNP Paribas Real Estate

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Figure 50: Housing completions for line-wide authorities – 2006-2019

Source : DLUHC – Table 253 – Permanent dwellings started and completed by tenure and district**

7. Property market and land values
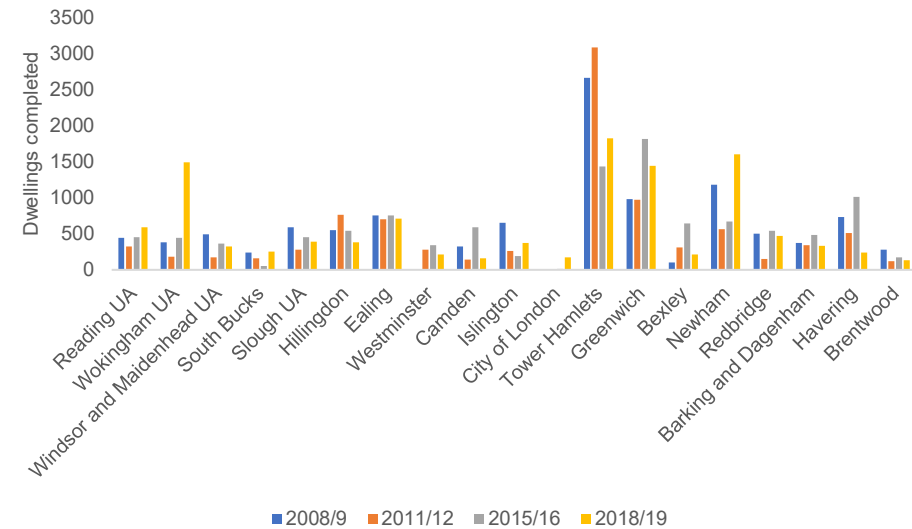## Housing delivery – starts and completions

The Elizabeth line is expected to open up new housing locations within a given travel time from central London, and in doing so, is expected to support the London Plan objectively assessed housing need of 42,000 homes per year*. It is hoped that this will mean that the rate of demand increase does not continue to exceed the rate of supply increase.

Figure 49: Housing starts for line-wide authorities – 2006-2019

Source : DLUHC – Table 253 – Permanent dwellings started and completed by tenure and district**

It is usual for housing completions to remain below the number of starts, due to uncertainties in the development process. The chart above shows high levels of housing activity along the Crossrail route, particularly within key growth locations in the east and west. Tower Hamlets has seen the largest growth in housing stock, along with Greenwich, Ealing, Newham and Hillingdon. In contrast, South Buckinghamshire and Brentwood, along with the City of London, have shown the lowest levels of housing starts and completions. These figures, in part, reflect strategic growth areas across London, identified for large scale housing and infrastructure investment.

A few authorities have seen consistent growth in completions across the key baseline years, including Reading and Newham.

*The London Plan 2016

**The data available for Westminster, Camden and Newham is incomplete, and therefore underrepresents house building activity in these boroughs for years 2006/2007. For Newham the data should not be seen as an estimate for the individual authority but is given on an authority basis to allow custom totals to be constructed – an overall figure was given and the tenure split imputed

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# 7. Property market and land values

New home building

London, the South East and the East of England (mutually exclusive areas) had the highest build rates among all regions in terms of new build housing. Although the South East region had the highest delivery rates during the baseline period (due to it being the most populous region), from 2009, London has had very similar or even higher delivery numbers, reflecting increasing efforts to reach planned housing targets within the capital. The graph to the right shows that many areas in outer London have seen high levels of new build housing. This demonstrates the emerging policy focus on releasing housing capacity in outer London, by bringing forward brownfield sites, combined with investment infrastructure.

Figure 51: Quantum of new build dwelling completion across regions

Source: Department for Levelling Up, Housing and Communities (DLUHC), 2021, Table 123

Figure 52: Quantum of new build dwelling completion in line-wide authorities
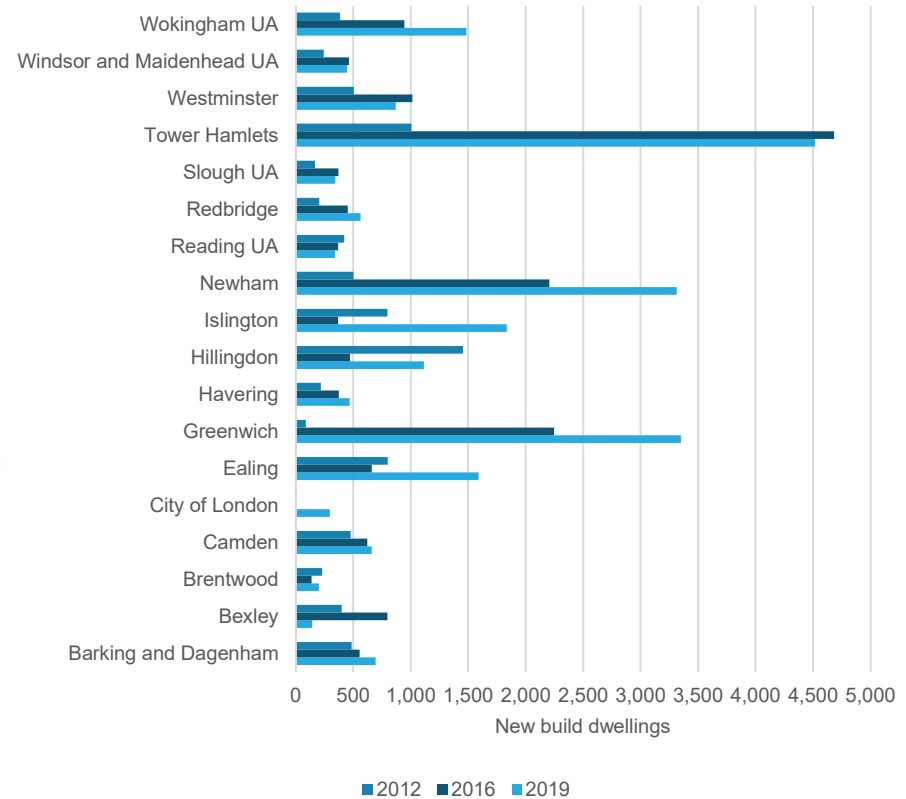
Source: Department for Levelling Up, Housing and Communities (DLUHC), 2021, Table 123

A number of authorities along the Elizabeth line have consistently delivered high numbers of housing. Tower Hamlets, Newham, Greenwich, and Islington have delivered the highest numbers of new build housing, each peaking in different years as a result of the diversity of individual house building schemes between authorities (e.g Local Authority Housing Grant Scheme (LAHG) in Tower Hamlets or more recently Greenwich Builds in Greenwich).

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7. Property market and land values

New home building (continued)

The Study Area outside of the impact buffers around stations has shown the highest absolute level of new build housing, peaking in 2014 with 6,622 new homes but showing a very similar pattern to smaller areas of analysis. Across all spatial scales, new build housing delivery declined in 2016. Unfortunately, the datasets used earlier were discontinued in 2016; therefore, the analysis was unable to update these graphs beyond that year.

Across all spatial scales, new build housing delivery follows similar trends on a wider scale such as the Crossrail study area or London compared to the micro-level analysis of buffers around stations. This could suggest that wider market conditions are a factor in housing delivery across these areas.

Figure 53: Quantum of new build residential properties 2006-2016
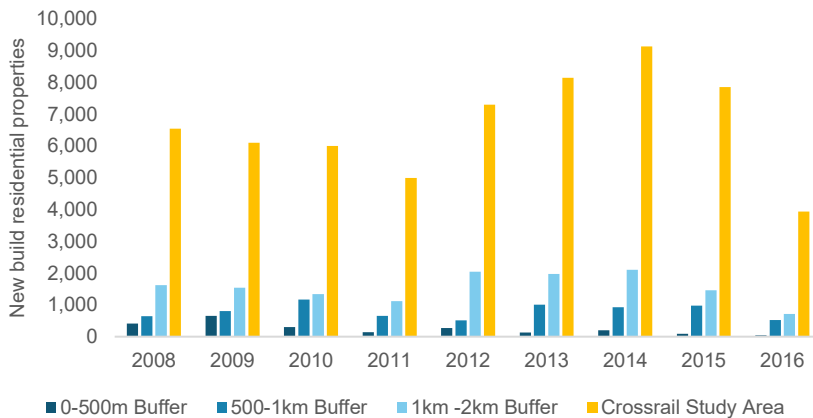
Source: Land Registry

Figure 54: Quantum of detached new build residential properties in the study area 2006-2016

Source: Land Registry

Figure 55: Quantum of detached new build properties within buffers 2006-2016
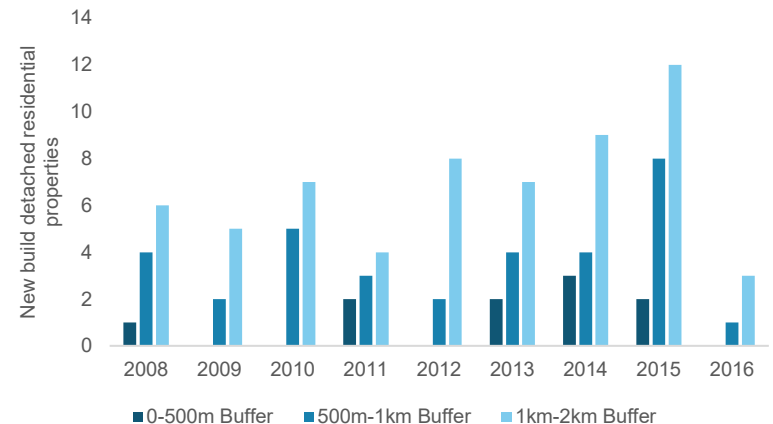
Figure 17: Quantum of Detached new build properties within the Buffers, 2006 – 2016, Land Registry

7. Property market and land values
New home building (continued)

The delivery of new build flats over the baseline period slowed across the South East and East of England during the baseline period. In 2006, the UK delivered over 70,200 new build flats, in comparison to around 26,000 in 2016. However there was a rallying of growth in new build flats in London and the Crossrail Study Area, particularly between 2012 and 2014, which has declined again in the period to 2016. This may reflect policy shifts towards higher density urban living.

Figure 56: Quantum of new built flats in London and wider region 2006-2016

Source: Land Registry

Figure 57: Quantum of new build flats in buffers 2006-2016
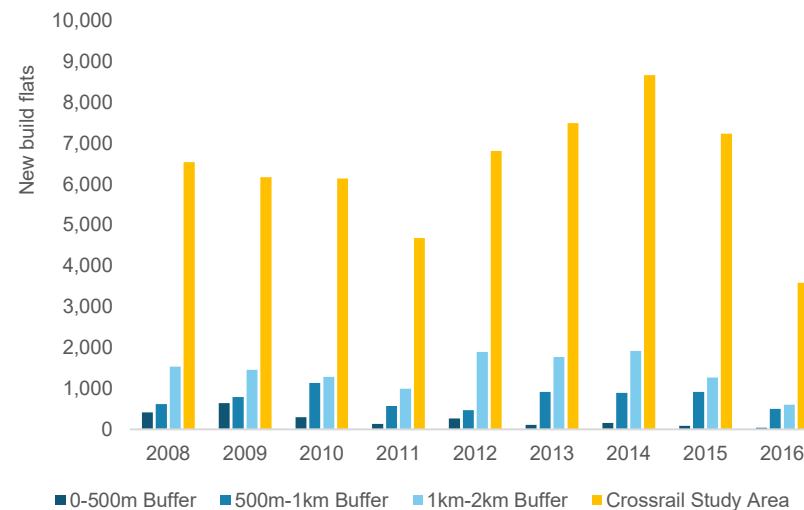
Source: Land Registry

The patterns in the Crossrail Study Area mirrored wider property trends in relation to new build housing. Between 2014 and 2016, new build flats declined sharply, with 2016 delivering the lowest quantum across the whole baseline period.

The 500m-1km buffer remained the most stable over the period, showing a rather constant trend in numbers of deliveries even during the steep fall experienced by other areas between 2014 and 2016. The number of new build flats was increasing in some part as a result of change of use conversions, contributing significantly to the overall housing stock in the UK. Part of the decrease observed in London and the buffers around stations in 2015 and 2016 could also be explained by the fact that developers have controlled flat new build numbers in central London due to an oversupply of luxury flats, and subsequent decline in prices.

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# 7. Property market and land values

New home building (continued)

Energy Performance Certificates (EPC) are issued for all buildings constructed, sold or let since 2008 by property address. These provide a reliable source of information and were used to monitor the number of new dwellings (our first choice of dataset for new dwellings, from the Land Registry, was discontinued during the baseline period).
The EPC count showed that around 51,600 new dwellings were delivered between 2008 and 2019 within 1km of new stations (and 55,000 up to 2021).
Crossrail has never approved any housing delivery targets and the original business case for the investment* did not include housing targets. Nevertheless, in a later report, GVA produced two estimations on the likely housing delivery within 1km of new stations. The 2012 Property Impact Study** from 2012 estimated 57,000 dwellings by 2021, and their 2016 revision 91,000 by 2021***.

Figure 58: Number of new dwellings delivered in buffers arounds stations based on Energy Performance Certificates 2008-2019
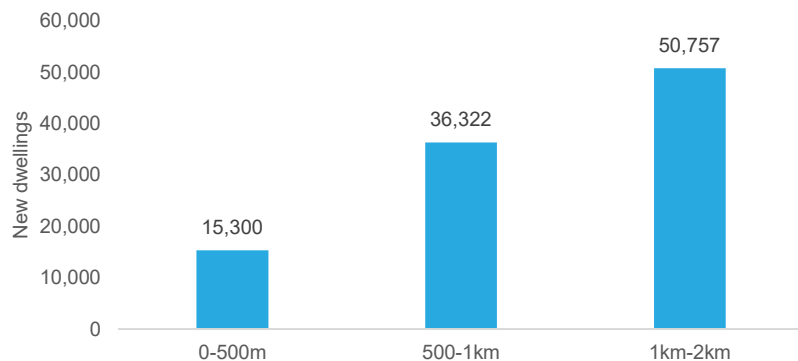
Source: Energy Performance Certificates data England and Wales

* The Appraisal and Business Case for Crossrail - Crossrail Learning Legacy
**Crossrail Property Impact Study led by GVA
*** Crossrail Property Impact and Regeneration Study led by GVA in 2016

Figure 59: Cumulated new dwellings by square km in station buffers 2008-2021
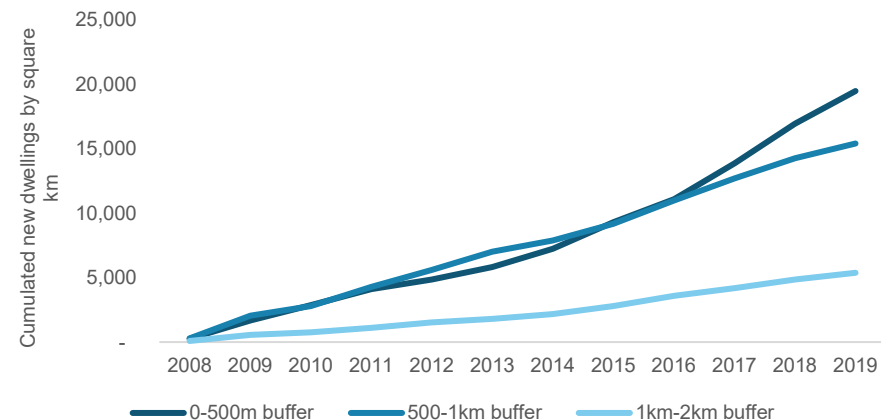
Source: Energy Performance Certificates data England and Wales

In order to compare the various buffer areas' performance in new dwellings built, we divided the number of new dwellings by the square kilometre size of each buffer (Figure 59). The 0-500m buffer has had the highest new housing building activity. While the 0-500m and 500m-1km buffers have followed a similar trend from 2008 to 2016, there has been a significant up-take in housing deliveries for areas closer to the future Elizabeth line stations (0-500m) as the opening date got closer. The buffer further away from stations (1-2km) experienced a slower rate of home-building activity during the same period.
The impact of the Elizabeth line on new home building will be explored further in post-opening evaluation, to understand the contribution of the line opening as well as other factors.
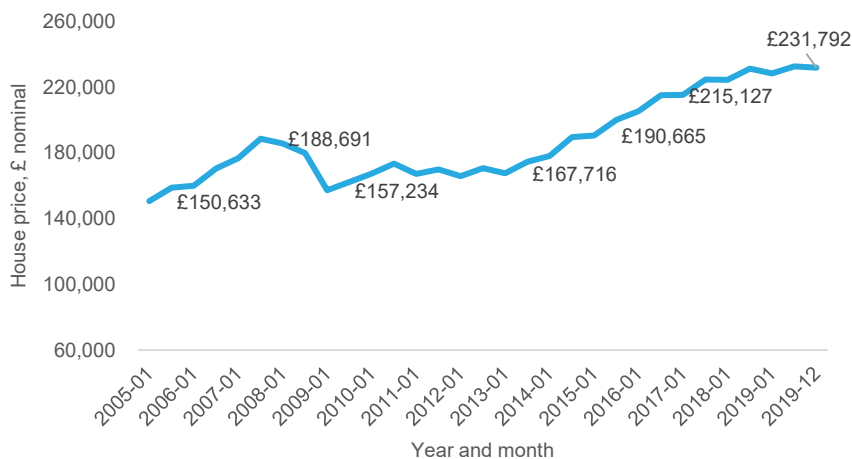Despite a difficult context in the last couple of years (among others the impact of the EU referendum impacting from 2016), there was a stronger increase of housing deliveries in areas closer to future Elizabeth line stations, perhaps maintained by the number of central Government and Mayoral initiatives.

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7. Property market and land values
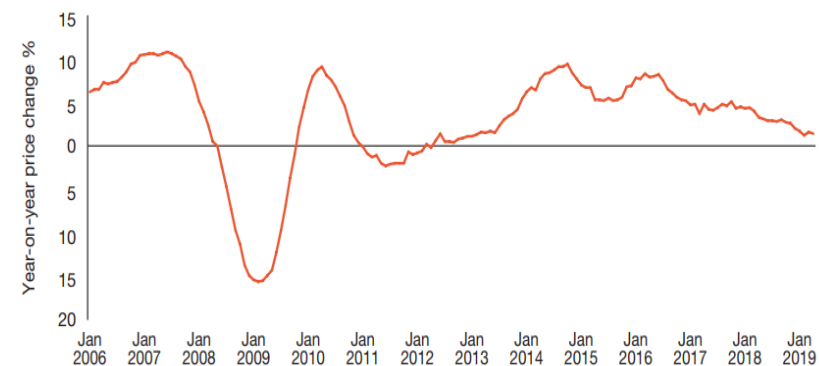
Residential property prices in the UK

Over the baseline period, UK house prices grew substantially, particularly in the years following the economic downturn in 2008. The divergence between real wages and house prices has increased, with average house price being around 8 times the average earnings in England and Wales. In December 2019, the average house price in the UK was £231,792, and the House Price Index which captures changes in the value of residential properties from a base of 100 set in January 201, 5was at 122, with a strong growth since 2013. The financial crisis of 2008 had a significant impact on the housing market, with house prices falling by around 15% between January 2008 and March 2009**.

Figure 61: Annual% change in UK house prices

Source: PWC, 2019, UK Housing Market Outlook, using ONS and Land Registry data

Figure 60: Average (nominal) house price (all property types) in the UK

Source: Land Registry, 2021, UK House Price Index

*Land Registry (2021)

**House Price Index, October 2016, Office for National Statistics

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7. Property market and land values

Residential property prices in the UK (continued)

London continues to have the highest house prices in the UK, followed by the South East, East of England and South West. London house prices pulled away in the 2010s, with the gap between London and the rest of the UK regions accelerating from around 2013.

Average house prices in London were around 50% higher by the end of 2019 than they were at in 2006. Strong growth in housing prices in the South and East of England may have been partly driven by advancements in the service economy, and proximity to London, as well as macro factors such as low interest rates. There does appear to remain a demand-supply imbalance, with housing developments being slow to meet demand.**

Figure 62: UK house prices by region
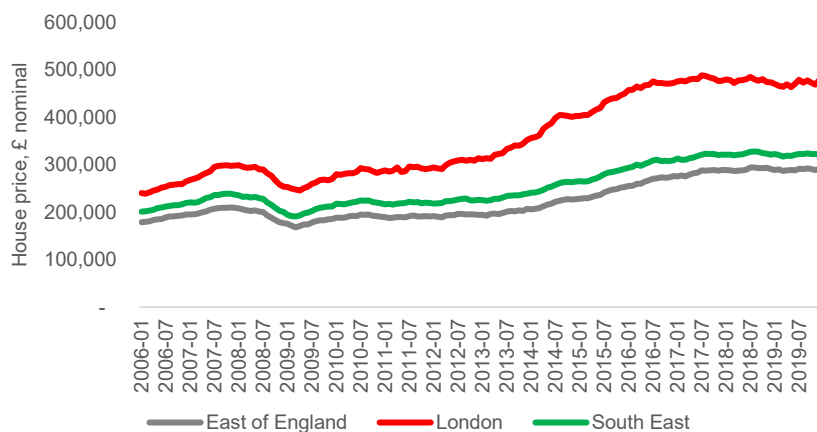
Source: Land Registry, 2021, House price index UK

Outside of London, the South West saw strong growth in prices, the overall volume of housing might have partly boosted by the extension of the Help-to-Buy initiative. For example, Bristol has seen some of the strongest growth in value of the housing stock. Large investments in transport infrastructure might also supported growth in the property market, with the development of East and West Coast Main Lines, prospect of HS2 and other transport improvements.

All regions and major areas across the UK also have higher property values in 2019 compared to the first quarter of 2006:

- Outer London (up by 87.6%)
- South West (up by 41.5%)
- East Midlands (up by 38.5%)
- West Midlands (up by 34.2%)

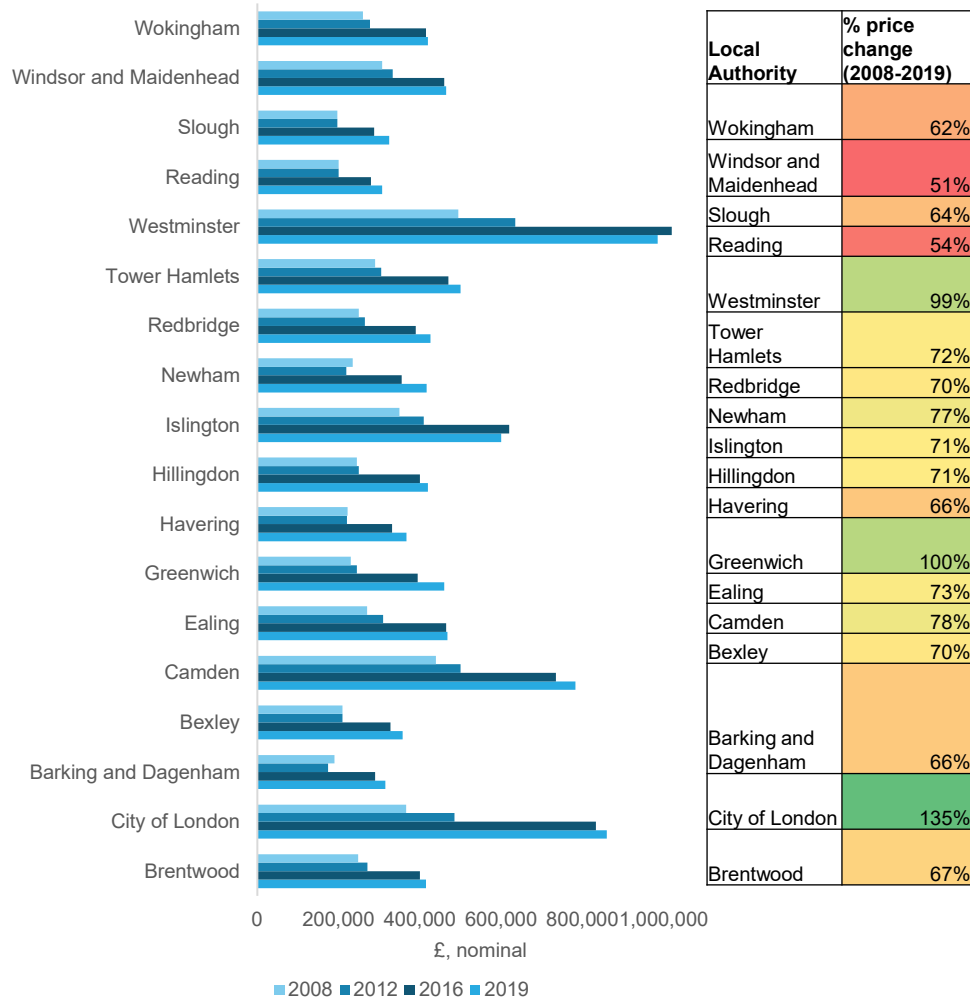The remaining UK regions have experienced a slower growth, with weaker performance of prices.

** Global Property Guide, UK, Price History, March 2021

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7. Property market and land values
Residential property prices in the UK (continued)

Although central London remains the strongest performing market in terms of prices, all local authorities within the Crossrail Study Area have seen major growth in property prices. Areas in Outer London have seen a significant increase in residential prices, potentially due to a rising demand for close proximity to central London at a lower cost, as prices rise further closer to the centre.

Between 2008 and 2019, property prices in London rose the fastest in the City, Greenwich, Camden and Westminster, central areas and areas towards the north, east and south of the West End. Property prices have continued to grow beyond 2019, and most recently may have been affected by the desirability for more space at home following COVID-19, a stamp duty holiday, and continued low interest rates.

Figure 63: Median paid residential property prices within line-wide authorities

Local Authority	% price change (2008-2019)
Wokingham	62%
Windsor and Maidenhead	51%
Slough	64%
Reading	54%
Westminster	99%
Tower Hamlets	72%
Redbridge	70%
Newham	77%
Islington	71%
Hillingdon	71%
Havering	66%
Greenwich	100%
Ealing	73%
Camden	78%
Bexley	70%
Barking and Dagenham	66%
City of London	135%
Brentwood	67%

7. Property market and land values

Residential property prices in the UK (continued)

Each property type (detached, semi-detached, terrace, flat) was significantly more expensive in London, often at least twice as much than for the rest of England. Houses received the largest mark-up, perhaps reflecting their relative rarity in the capital (Figure 62).

Figure 64: Median house price (paid) in GBP by property type, England, and London, 2019
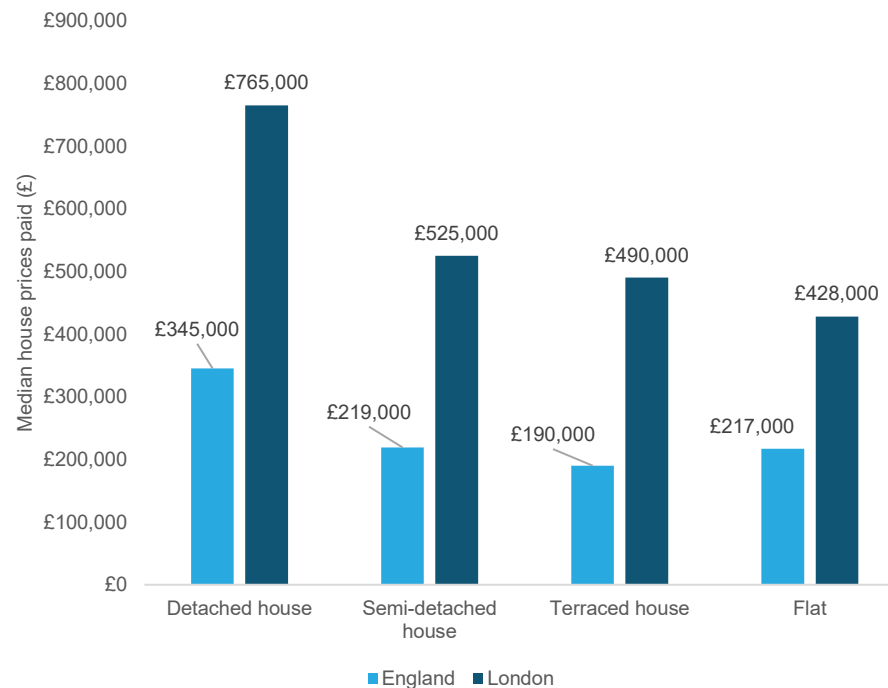
Source: ONS, 2021, Median house prices for administrative geographies: HPSSA dataset 9

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7. Property market and land values

Residential property prices in the UK (continued)

Figure 64 on the previous slide shows median house prices (paid) in GBP by property type, across the line-wide authorities in 2008 and 2019. There has been a universal increase in prices between 2008 and 2019, across line-wide authorities, with the highest prices being experienced in the most central locations that are Westminster, Islington and Camden.

Detached and semi-detached houses appear as the most desirable type of properties in these central location, with prices often 3-4 times higher for a detached house than for a flat (from average £920,000 for a flat in Westminster to £4,8 million for a detached house).

Flats in Westminster are also worth more than houses anywhere along the line except from Camden and Islington.

Figure 65: Median house prices (paid) in GBP by property type, across the line-wide authorities in 2008 and 2019

Source: ONS, 2021, Median house prices for administrative geographies: HPSSA dataset 9

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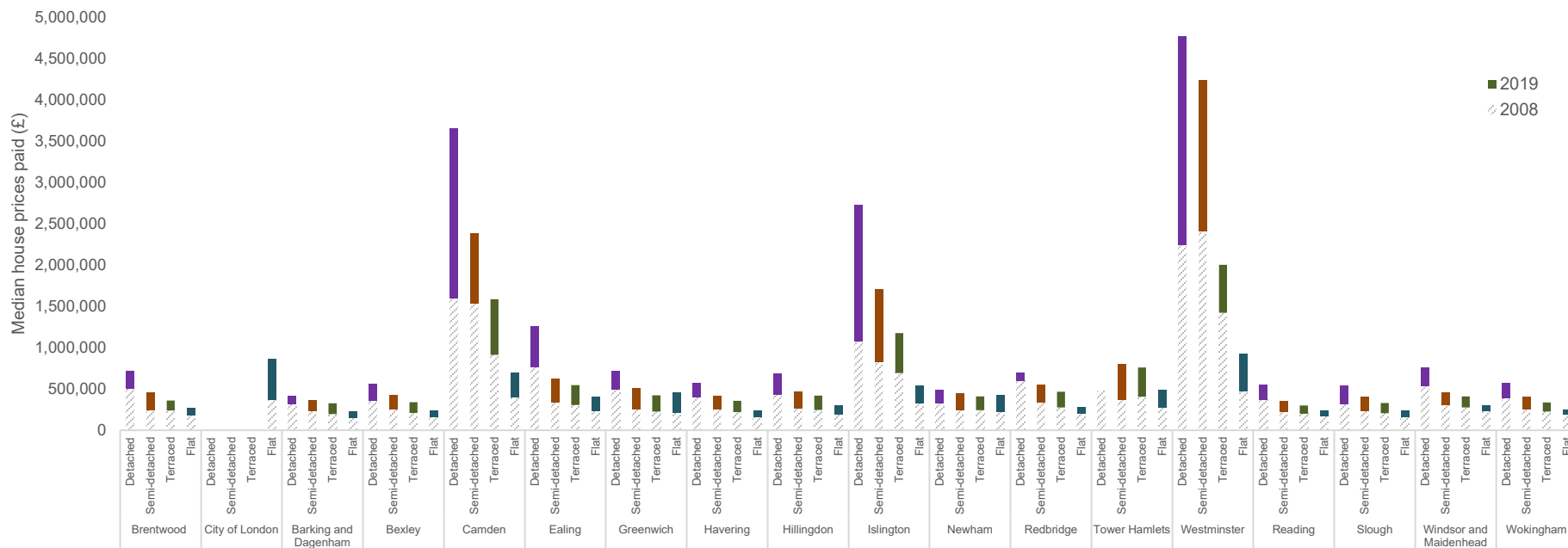
7. Property market and land values

Residential property prices in the UK (continued)

Residential property prices for areas surrounding the Elizabeth line almost doubled between 2009 and 2019. Areas within 500m of Crossrail stations saw the highest growth, with the rate of increase broadly decreasing with further distance from the stations. However, it is not possible to say from this data alone that the increase was due to the Crossrail announcement.

Across all of the buffer areas surrounding the Elizabeth line (0-500m, 500-1km, 1-2km), the average residential property price (£515,833) was higher than that of the London average (£482,021) in 2019. In London, the average price paid for new build residential properties was higher than that of existing residential properties, suggesting that building activity may have driven some of the growth.

Figure 66: Median prices for residential properties in Crossrail buffer zones
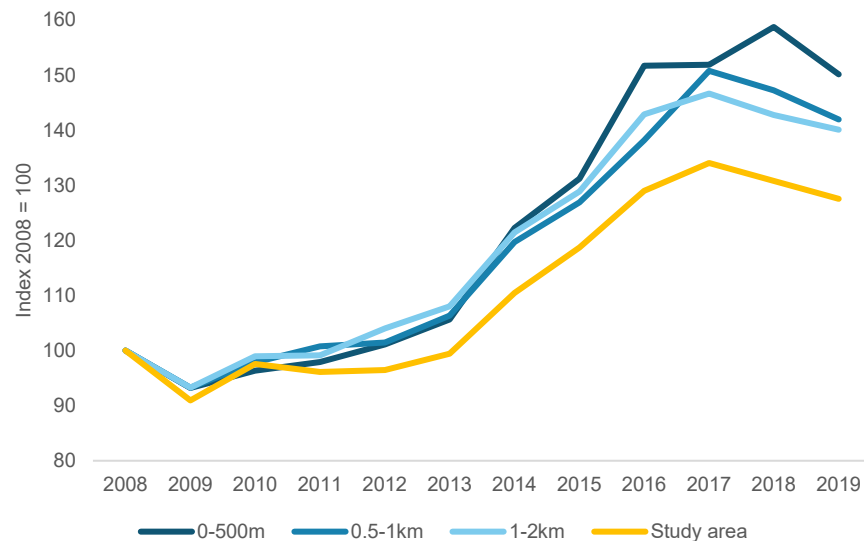
Source: ONS, 2021, House price statistics for small areas

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7. Property market and land values

House price affordability

Across the UK, the ratio of property prices to income increased from 2009 to 2017 before easing, slightly, from 2017 to 2019, as prices fell back. The London ratio fell back at a greater magnitude, but remained higher than other areas. By the end of 2019, the London ratio was at 8.8, up from 5.4 at the start of 2009.

The London market can affect the wider region, impacting the wider South East.

Figure 68: Ratio of lower quartile house price to lower quartile gross annual earnings, 2019
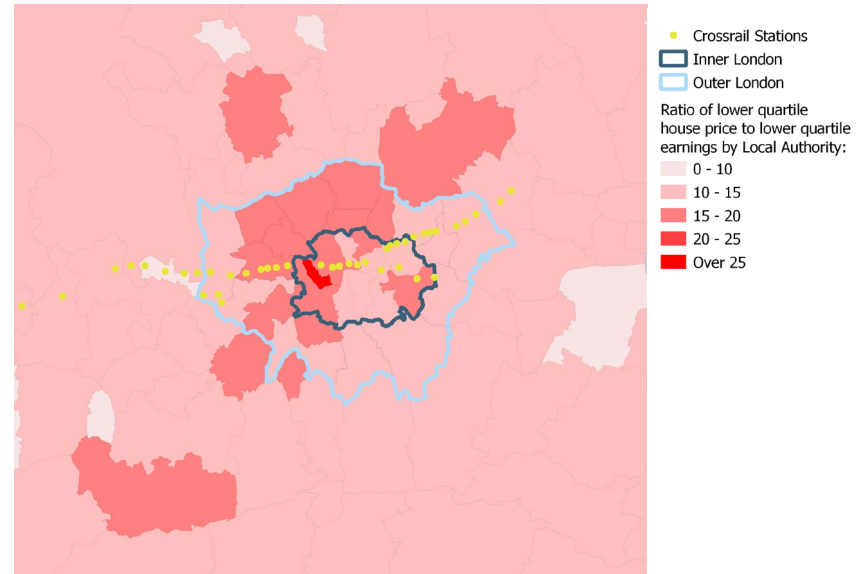
Source: ONS, House price to workplace-based earnings ratio, 2019, table 6c, 2021

Figure 68 illustrates housing affordability for lower earners by showing the ratio between lower quartile earnings and lower quartile house prices. This ratio is particularly high within west and north London. The map shows that the western section of the Elizabeth line impacts some of the areas with the highest affordability problem.

Figure 67: Ratio of lower quartile house price to lower earnings, 2009 - 2019

Source: Nationwide, Nationwide Affordability Indicators: First time buyer house price to earnings ratios by region, 2021

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7. Property market and land values

House price affordability (continued)

Affordability within the capital has had an impact on home ownership levels, with mortgaged homeownership falling annually at around 1% for the past decade. Less than half of London's population own their homes.

Local authority-wide analysis show that the affordability challenge is the highest in central areas with Westminster, the City of London and Camden being particularly unaffordable. Other areas showing high ratios are outer London areas in the West (Ealing showing high levels of unaffordability) and Red Bridge and Newham showing high ratios in the East.

Figure 70: Lower quartile residential price to lower quartile earnings for inner London-wide authorities, 2009-2019
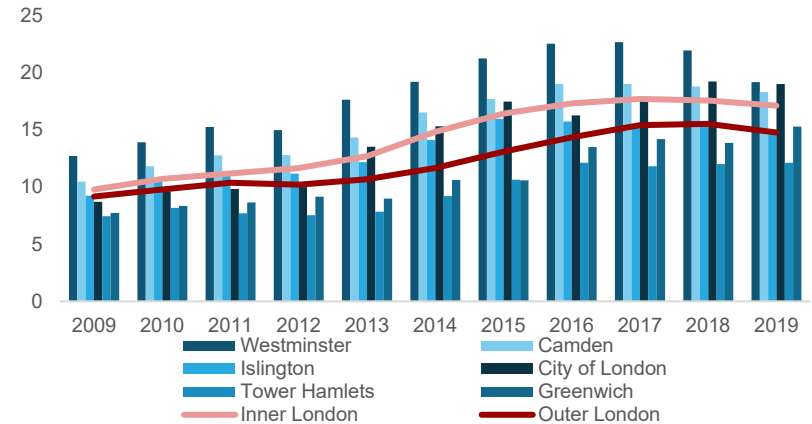
Source: ONS, House price to workplace-based earnings ratio, 2019, table 6c and 2C, 2021

Figure 69: Lower quartile residential price to lower quartile earnings for outer London-wide authorities, 2009-2019

Source: ONS, House price to workplace-based earnings ratio, 2019, table 6c, 2021

Figure 71: Lower quartile residential price to lower quartile earnings for non-London-wide authorities, 2009-2019
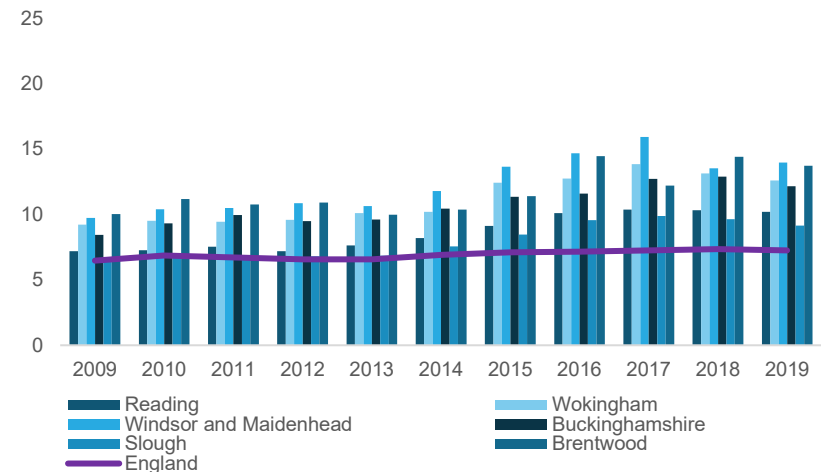
Source: ONS, House price to workplace-based earnings ratio, 2019, table 6c and 2C, 2021

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7. Property market and land values
Residential property transactions

After the reducing during the financial crisis the number of UK residential property transactions steadily increased, peaking in March 2016, just before the introduction of higher rates of stamp duty for additional properties from April 2016. After 2016, the number of transactions stabilised in the period to 2019 around an average of 100,000 per month, with strong seasonal variation.

Figure 72: UK residential property transactions, 2005-2019

Source: HMRC – UK monthly property transactions commentary

Within the line-wide buffers, the 1km-2km radius around stations showed the highest transaction activity, steadily increasing from 2008 to 2014. Between 2014 and 2019, the number of residential transactions dropped, potentially due to a decline in consumer confidence, the change in stamp duty in late 2014, which caused buyers to defer or delay transactions, the aftermath of the EU referendum, and other market factors.

Figure 73: Residential transaction across spatial scales of the study area, 2006-2019
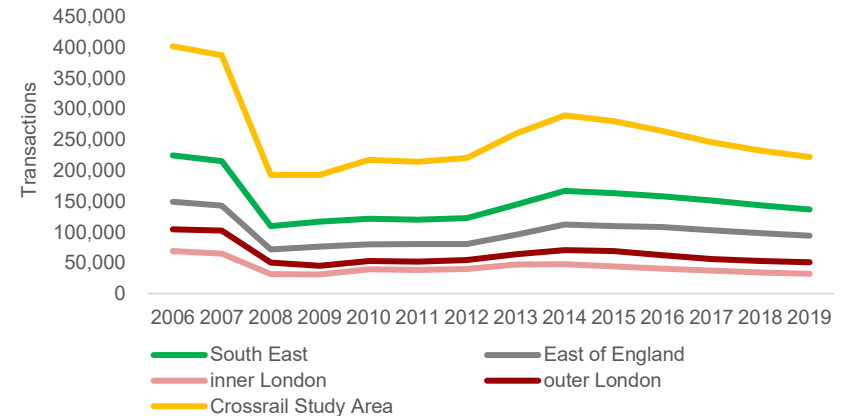
Source : ONS, Residential property sales for administrative geographies : HPSSA dataset 6 (table 1a)

Figure 74: Residential transaction within Crossrail stations buffers, 2006-2019
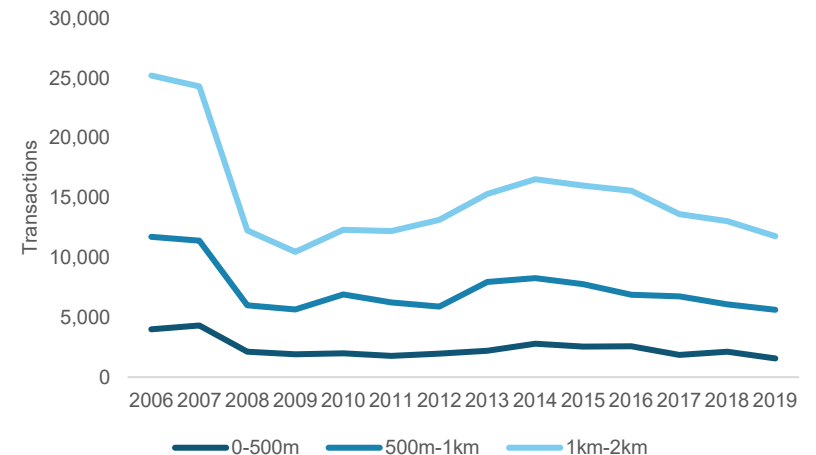
Source : ONS, Residential property sales by LSOA : HPSSA dataset 41 (table 1a)

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7. Property market and land values
Commercial property

Commercial property includes office, retail and industrial uses, and forms a key part of the physical and economic renewal of locations. Activity within the commercial property market thus provides a good indication of wider economic activity, investor confidence and sectoral demand. Transport accessibility increases effective density, whereby more people can access opportunities and services, and the catchment for highly skilled jobs, leisure and retail opportunities is expanded. There is a theoretical relationship between investment in transport infrastructure and the value capture opportunities for the commercial property sector.

Commercial property values experienced strong growth between 2012 and 2014, stabilized between 2015-2017, then showed strong downward momentum, with volumes in Q3 2019 being down 20% compared to Q3 2018 and 31% below the five-year quarterly average. This may be due to uncertainty following the EU referendum.

UK-wide, growth in commercial investment was driven by the regions with an important increase in East of England, Scotland and Yorkshire and the Humber. This resulted with around 60% of all spending outside of London in 2019 compared to the 45% 5-year average (2014-2019). 2019 saw a greater shift of investment from retail and office towards industrial and alternative uses, perhaps reflecting a perception that this sector was best placed to cope with uncertainty related to Brexit. Retail suffered from the growing e-shopping trend (which has accelerated over the more recent COVID-19 period). However, overall, in 2019 office uses remained the dominant sector, accounting for around 44% of all investment.

Figure 75: UK Investment volumes capital deployed and deal counts – 2010-2019
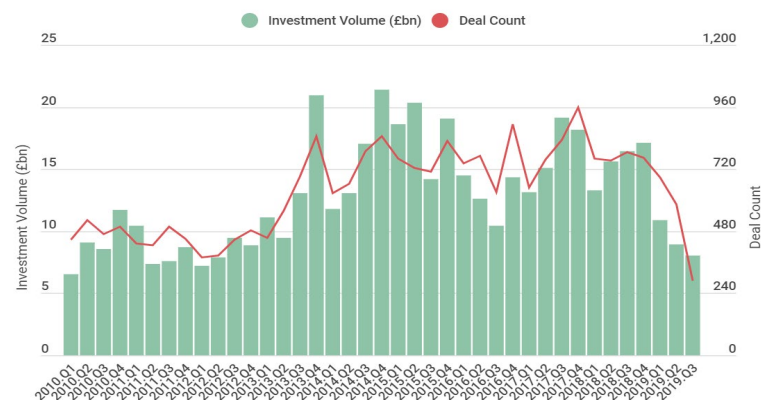
Source : Savills – Market in Minutes UK Commercial 2019 ; PropertyData.com

7. Property market and land values
Commercial property (continued)

London significantly outperformed the UK average in commercial property price growth between 2009-2019, which is reflected in the widening gap in yield at both the lower and higher end of the market. Higher value deals have achieved more stable levels of growth, however the overall growth rate has declined.
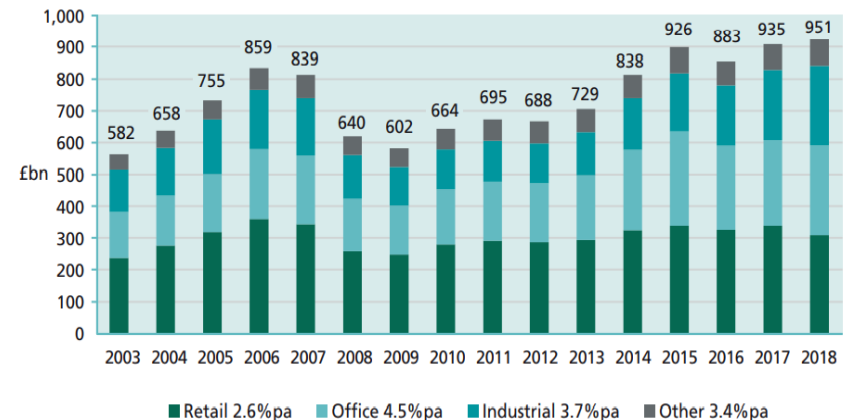
The UK's commercial property stock has steadily grown in value since the 2007/08 financial crisis. The strongest growth has been in the office and industrial sectors, with less marked growth in retail and others.

Figure 76: Average Yield in London vs UK – 2010-2019
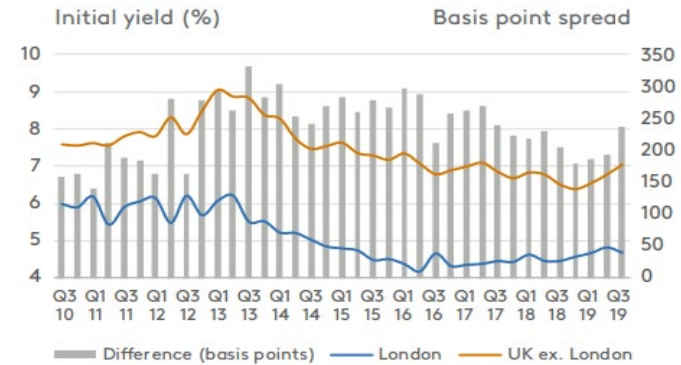
Source : CoStar Q3 Investment Report

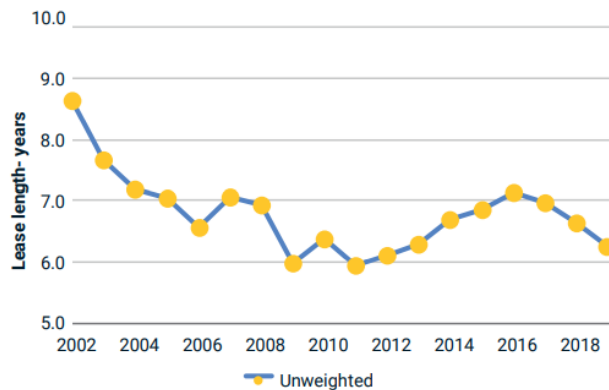### Figure 77: Total value of commercial property in the UK – 2003 - 2018

Source : The Size and Structure of the UK Property Market, IPF Research

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7. Property market and land values
Floor space leased

The average length of new commercial property leases in the UK has experienced a long-term downward trend since the 1980s - when leases were on average around 25 years long – until falling under 7 years on average in 2007. Since then, average lease length has remained between 6 and 7 years, and shortened to 6.3 years in 2019 according to the UK Lease Events Review 2019 by MSCI and BNP Real Estate. This trend has been most acute in the retail sector, reflecting the preferences of smaller occupiers for greater flexibility. Longer leases remained more prevalent amongst larger businesses, often residing in higher quality premises, perhaps in order to ensure continuity and retain value from initial fit out costs.

Across the three regions of the Study Area (London, South East, East), the South East experienced the highest growth over the period 2006-2019. There was significant, but a lower magnitude of growth in London and the East.

Figure 78: Average length of new leases, UK, excluding the effect of break clauses

Source: MSCI, BNP Real Estate - UK Lease Events Review 2019

Figure 79: Floor space leased split across London, East of England and South East
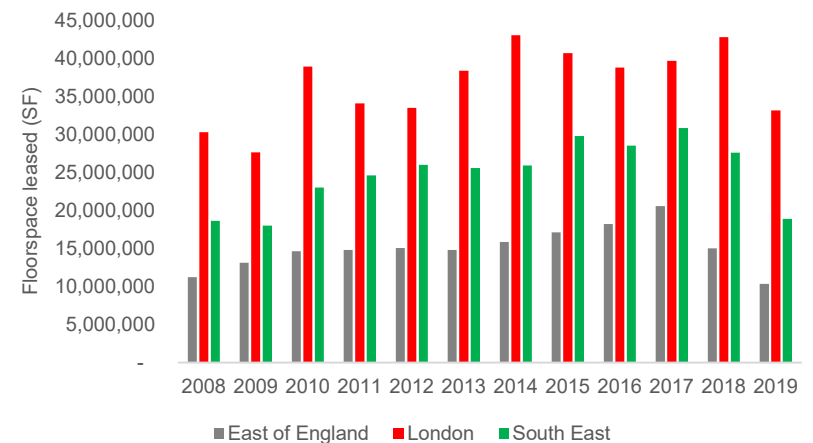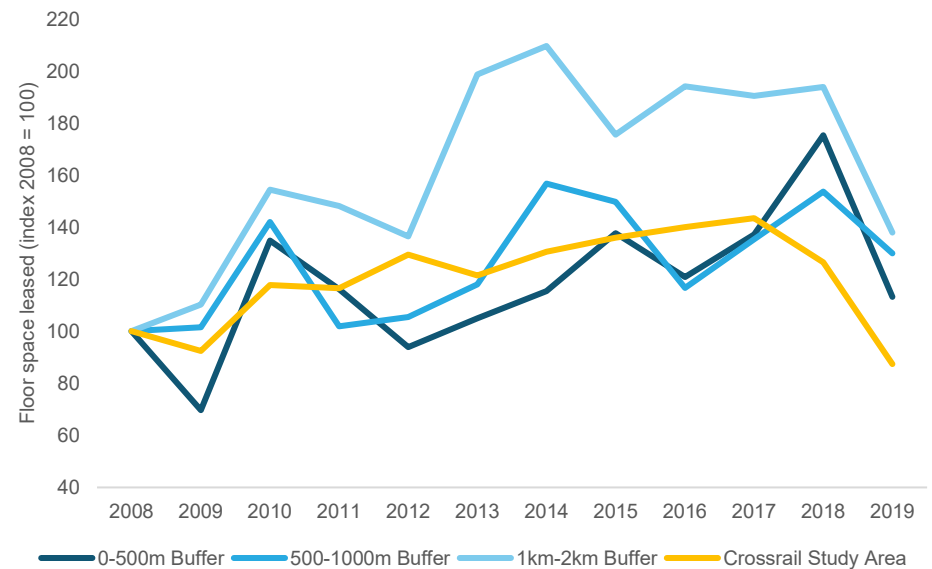

Source : CoStar data, 2021

7. Property market and land values
Floor space leased (continued)

Between 2009-2019, all the Crossrail buffer areas experienced growth of floor space leased, with small variations year-on-year and experiencing a steep decrease between 2018 and 2019. The annual variations were similar across the buffers and including for the Crossrail Study Area.

The growth in floor space leased since 2008 was slightly slower for the 500-1000m buffer than the 0-500m and 1-2km buffers. This could be due to a focus on residential new build in these areas.

Figure 80: Indexed floor space leased split across Crossrail buffers and the Study Area over time

Source: CoStar data 2021

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7. Property market and land values

Floor space leased in London (continued)

Figure 81: Floor space newly leased each year split across Crossrail line-wide London submarkets
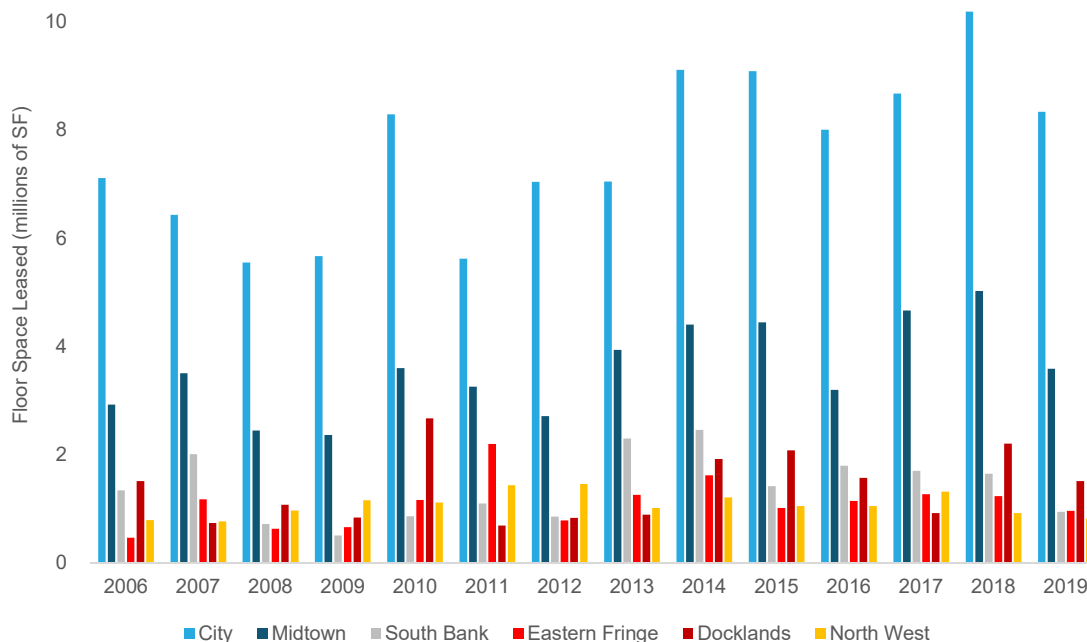

Figure 59: CoStar, 2021

Analysis of floor space leased was done using data from Costar and focused on pre-defined London commercial property sub-markets that are generally used by real estate specialists and which will be served by the future Elizabeth line.

The City had the highest quantity of floor space leased over the baseline period. Nevertheless, sub-markets within London showed strong growth in the office market over the same period, including the South Bank (SE1, SW8), Midtown (WC1, WC2, part N1/EC1/EC4) and Docklands (E14). The North-West W1, W2, NW1) and the Eastern Fringe (E1, E2) had more modest growth, consolidating their position as more residential orientated submarkets.

7. Property market and land values
Sub-regional market reports in London

The future Elizabeth line stations fall within a number of London commercial property sub-markets. Overall, commercial property vacancy rates have been declining but remain higher than London average (2015-2019) in Hillingdon, the City fringe, Docklands and Redbridge. The high vacancy rates observed in the Docklands submarkets may be due to recent additional supply.

Figure 82: Commercial property vacancy rates across London line-wide submarkets
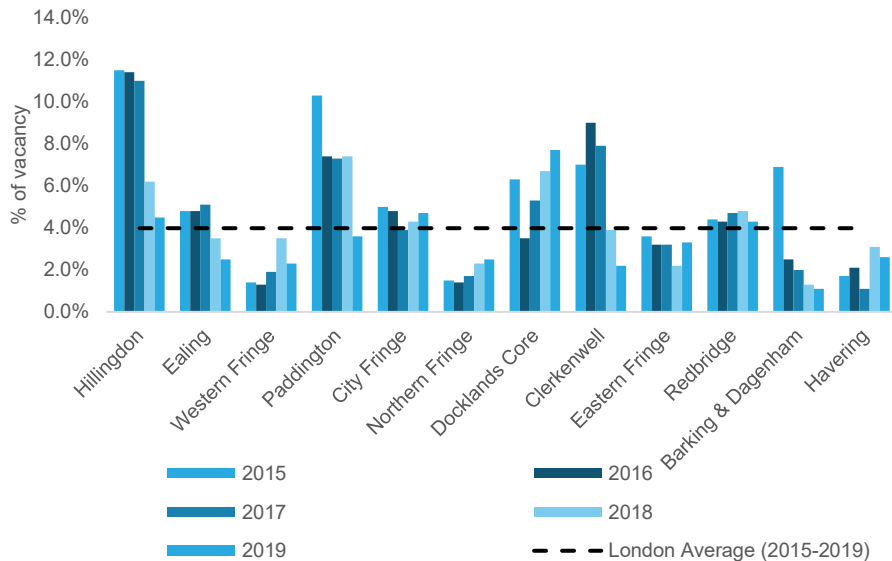
Source : CoStar 2021

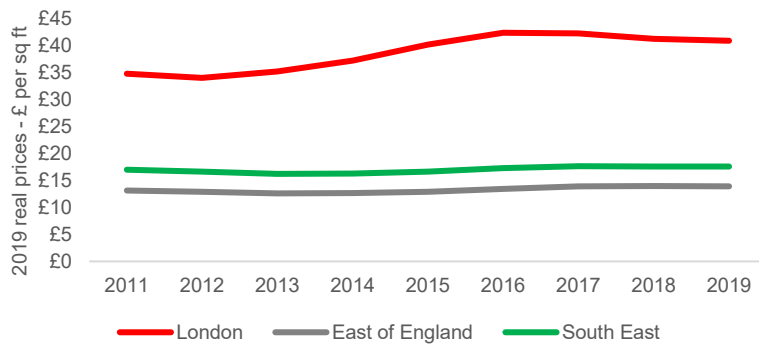Figure 83: Average market rents of commercial properties across London line-wide submarkets

Source : Co-Star 2021

Average market rents are higher in more central areas, often reaching £60 per square feet, around three times higher than rents on western and eastern fringes. In 2019 real prices, the most central areas have witnessed a light decrease in rental values between 2015 and 2019.

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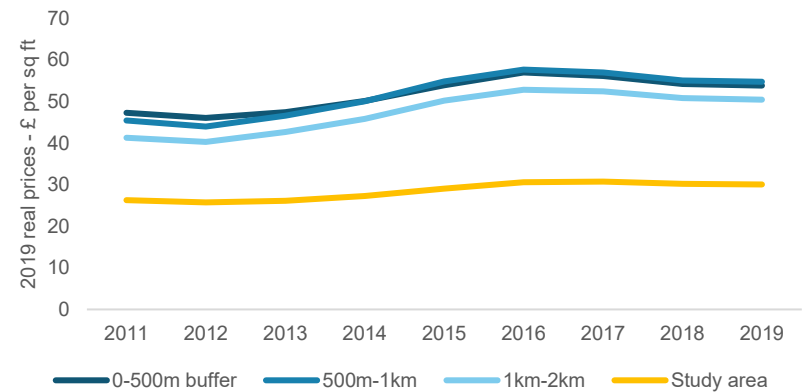
7. Property market and land values

Sub-regional market reports in London (continued)

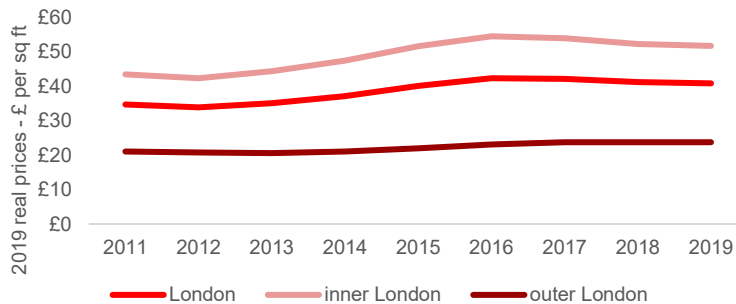### Figure 84: Average market rents across study area regions

Source : CoStar 2021

Figure 85: Average market rents in London

Source : CoStar 2021

Figure 86: Average market rents across Crossrail stations buffers

Source : CoStar 2021

London as a whole experienced faster growth in commercial property rents than East of England and the South East. Inner London has consistently shown the highest rent per square foot across the baseline period although rents have slightly decreased from 2016 when considering them in 2019 real terms. The rate of rent increase has been particularly strong within the 500m and 1km buffers of stations along the Crossrail route, which are all above London average rents both in values and growth rates. Further analysis led in the Pre-opening property impact study has shown that a part of this higher growth closer to station is attributable to Crossrail's announcement.

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7. Property market and land values

Residential land-values

Land values are determined by the demand for land of a particular use, relative to the supply of those uses. Throughout the baseline period, residential land values peaked in 2007/08 for greenfield and brownfield land in the UK. London exceeded this peak level in 2013, after strong growth between 2011 and until 2015, after which land values decreased sharply only to stabilise by the end of 2018.

Residential land values in London varied based on localised characteristics, and the sub region. Between September 2018 and September 2019, land values in Central London decreased by 1.8%, leaving land values 31% under the 2014/15 peak. However, land buying activity has continued to increase in Outer London, in line with the delivery of large regeneration schemes. In Outer London, demand for development land has increased, accompanied by rising residential land values in areas of strong house price growth. The South East has a strong market, and has experienced growth in the value of greenfield land.

Figure 87: Residential land values UK, 2007-2020
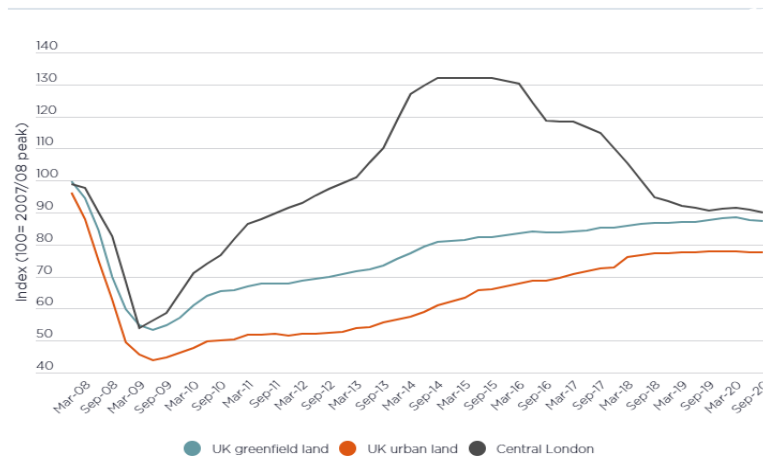
Source: Savills Research

Figure 49: Residential Land values, 2007 – 2020, Savills Development Land Index

Most recently, the growth in residential property since COVID-19 has meant that demand for land has increased. Completed transactions in April 2021 were 59% higher than the 2008-2020 average according to HMRC.

7. Property market and land values

Residential land-values (continued) and commercial land-values

Across London in 2019, the highest residential land values tended to be in central areas, followed by the south and west sub-regions/ property market areas. In contrast, the lowest residential land values were found in the east and north. Average values varied considerably along the Crossrail route.

Residential land values are the highest in central London locations like Westminster and Islington. The lowest land values in 2019 were found in outer east and north-east London. Average values ranged from around £7m per ha in Havering in the east, compared to around £11.5m per ha in the west near Park Royal and Heathrow (Hillingdon).

Commercial property land values have consistently lagged behind residential values. In central London, however, this gap was closing, potentially as a result of more affordable housing being provided during the 2010s, and the re-adjustment was most notable in 2018 after this policy became embedded in land value. As a result, landowners may have been less inclined to dedicate their land to residential use meaning that the land that was brought forward was more likely to be used for other purposes. This was particularly present in traditionally high residential land value areas such as Kensington & Chelsea and Westminster where almost 50% fewer homes had consent granted in the year to June 2019 compared to the same period in 2018.

Figure 88: Residential land values for line-wide authorities, 2019
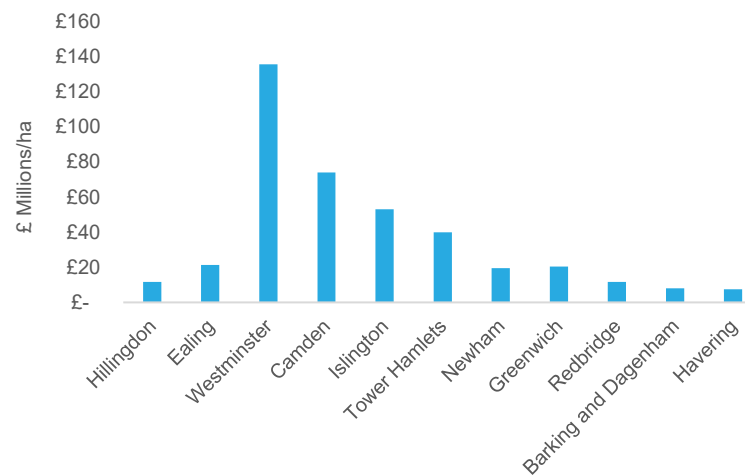
Source : MHCLG, Land value estimates 2019

8. Planning policy

8. Planning Policy
Planning policy context and local plans

Planning policy sets the framework within which regeneration and development activity take place, helping to regulate uncertainty, and guide sustainable development. Assessing current and potential development activity along the Crossrail route, along with relevant planning policy, provides an insight into the role of transport in unlocking growth.

In the duration of the baseline period, the UK planning system underwent a significant transformation. In 2011, the Coalition Government introduced Localism as a key policy agenda, which had significant implications for the planning system, and approach to strategic planning more broadly.

The Localism Act received Royal Assent in November 2011, and replaced the regional planning tier in favour of Neighbourhood planning. Localism provided the legal framework for neighbourhood planning powers and the duty to cooperate with neighbouring authorities, and was intended to give communities new powers to shape and support development at the local level.

The National Planning Policy Framework (NPPF), revised in 2021, sets out the government's planning policies for England and how these should be applied (MHCLG, 2021). The Local Plan, first introduced in 2004, is a key policy tool, which sets out local planning policies and identifies how land is used within Local Authorities. The Local Plan forms part of the Development Plan Document, which outlines policy aspirations for a local authority, underpinned by statutory rounds of consultation with residents and key stakeholders across a range of indicators, including housing, infrastructure, economic growth, sustainability and community cohesion. There is a requirement for Local Plans to be positively prepared, justified, effective and consistent with the National Planning Policy Framework (NPPF) to guide appropriate and viable development.

The Government has shown a drive towards Local Plan reform, identifying 'special measures' for Local Authorities which failed to have an up-to-date Local Plan in place by March 2017. A review of the Local Plan process by Savills identified that as of 2019 around 58% local authorities in the UK had an NPPF-compliant and up to date Local Plan (compared to less than a third in 2017), showing an acceleration in local plans adoption.

A report undertaken by NLP identified that the NPPF has brought about a significant boost in housing supply across the UK, and up to date and compliant Local Plans play a key role in achieving housing delivery. The London Local Plan map (Planning Aid for London, 2021) shows disparity between the stages of adoptions of London local authorities, with only 8 local authorities out of 33 having an approved Local Plan, 2 having outdated Local Plans and 23 being in the process of consultation or examination of their plans. Overall, plan-making has been markedly slower in authorities with large areas of green belt land.

Some of the principal reasons for not having a Local Plan in place include:

• Agreeing housing needs

• Challenges surrounding Duty to Cooperate

• Lack of clarity around key issues (SHLAA)

• Lack of political will

• Lack of resource, support and guidance

• Responding to too many policy changes

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8. Planning Policy

Planning policy context and local plans (continued)

Figure 89: Local Plan status across South East England, 2019

Adopted
Reviewed
Submitted
Draft version
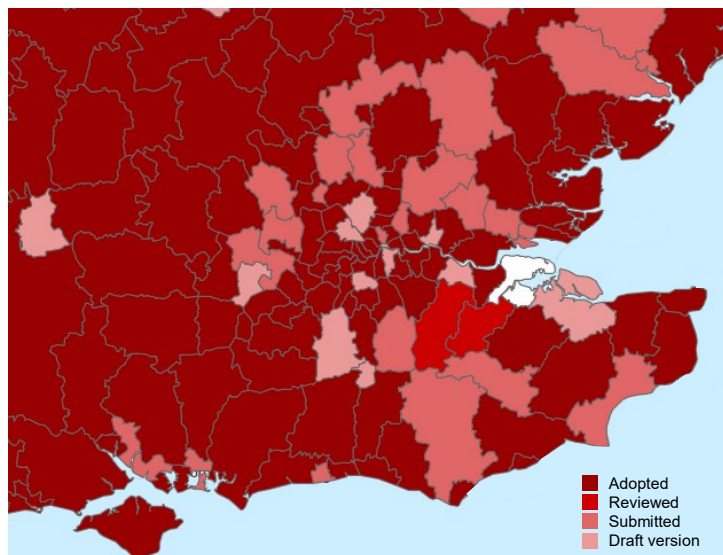
Source: Planning Inspectorate data 2021.

Since the introduction of the NPPF, around 25 Local Plans have been withdrawn from the examination process. Figure 89 above shows the status of local plans in 2019. The majority of local authorities have already adopted their local plans; however, especially in the east, north-east and south of London many authorities were lagging behind.

Figure 90: London Local Plan map and stage of plan-making

Regulation 18 consultation upcoming or live

Regulation 19 consultation upcoming or live

Examination in Public upcoming or live

Examination in Public concluded and Plan adopted

Local Plan outdated, review may be upcoming

Source: Planning Aid for London, Local Plan Status ; The Planning Inspectorate, Local Plan: Monitoring Progress, 2021

In 2018, DLUHC stipulated that a Plan would be considered out of date if it has not been examined for five years. Plans prepared under the previous system can be considered compliant as long as it can be demonstrated that the policies are in line with the NPPF. As of 2019, 58% of local authorities were successful in adopting a plan and another 32% were at a draft plan stage. The 2018 NPPF introduced a new way of calculating housing needs, setting general targets higher to respond to market pressure.

The baseline period saw a period of local policy transition, with many London boroughs currently preparing Local Plans, setting out renewed housing and employment targets and responding to existing challenges.

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8. Planning Policy
Local Plan targets

Local Plans for the authorities along the Crossrail route had a significant range in future housing targets. Tower Hamlets, Greenwich and Newham had particularly high targets. Across the baseline period, a number of authorities also failed to meet previous targets. This was particularly true for South Bucks, Greenwich, Newham, Redbridge and Barking & Dagenham. Some areas in the west (Reading, Slough, Hillingdon, Ealing and Westminster) exceeded their targets.

Many local authority areas have been identified for large scale strategic housing delivery beyond the baseline period. A new London Plan has been released in 2021 setting the housing targets even higher for the authorities in order to respond to the current housing crisis and taking into account the rising demand around Crossrail stations. Local authorities are expected to act as leaders in reaching these objectives.

Figure 91: Comparison of annual average housing delivery targets with actual net additional dwellings delivered within authorities from individual Local Plan base year to Plan period end year

- Average annual housing delivery target over current Plan period
- Actual annual housing delivery (2006-2019) - average
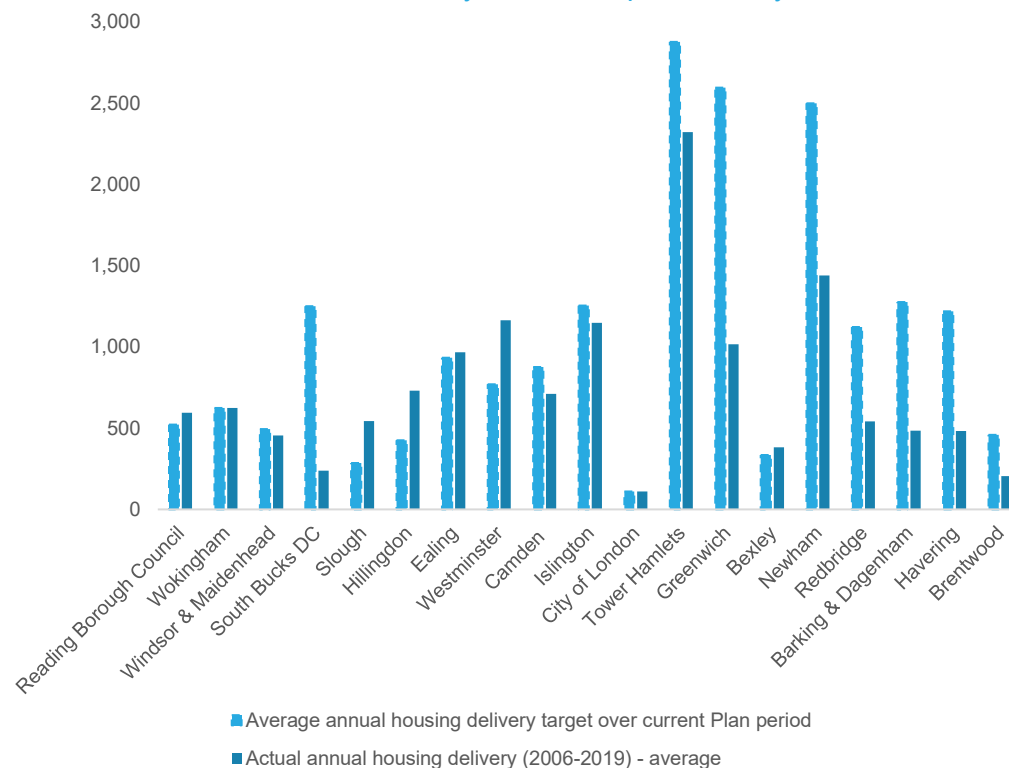
Sources : DLUHC Table 122 : Housing supplu; net additional dwellings, by local authority district, England 2001-02 to 2019-20, London Local Plan 2016, Local Authority Plans

9. Planning Activity

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9. Planning Activity
Planning applications

Planning activity is an indicator of the wider development and regeneration climate. During periods of economic growth, the number of planning applications submitted typically increases, reflecting developer ambitions, consumer demand and availability of credit. 447,000 planning applications were submitted to local planning authorities across England in the year ending 2018/19 (DLUHC, 2019).

The historical planning activity set out in Figure 92 shows that number of applications received, decided and granted per year UK-wide have all followed a similar trend. It is clear from the graph that overall planning activity has remained relatively constant since 2009, and has slowed down from 2017 until 2019. The number of applications approved each year has increased overall from 2009 to 2019.

There was variation of the number of housing approvals along the Crossrail route, often coinciding with London Plan designations. Key areas of growth and regeneration along the route included Southall, Paddington, Bond Street, Tottenham Court Road, Farringdon and Woolwich. As presented in Figure 93, over the baseline period, housing approvals grew at a faster rate in Outer London as compared to Inner London and London overall.

Figure 92: Planning applications received, decided and granted in the UK
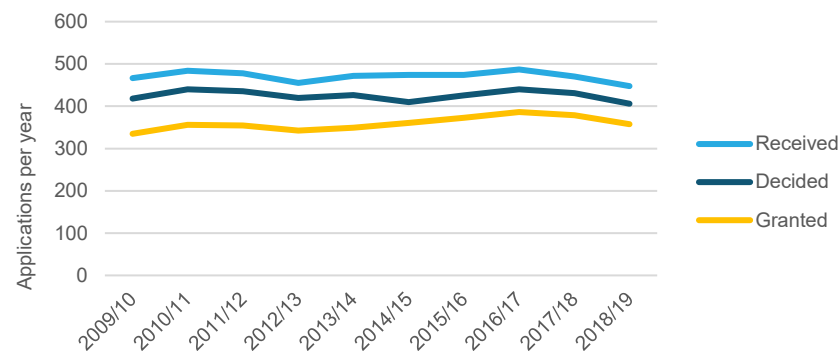
Source : DLUHC, Table P120: district planning authorities - planning applications received, decided and granted, performance agreements and speed of decisions, England - 2019

Figure 93: Housing approvals in London, Inner London and Outer London throughout the baseline period, 2005/2006-2018/2019

Source: London Development Database 2021 – Planning permissions on the LDD, Housing Approvals unit level ;

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9. Planning Activity

Trends in planning activity – major planning applications

Figure 94 sets out the number of major planning applications granted across the Crossrail local authorities, in the year ending 2019.*

Except the City, which has a low residential population, Westminster, Buckinghamshire and Windsor & Maidenhead experienced the highest levels of major planning application granted per 1,000 residents in 2019.

Figure 94: Major planning applications granted per 1,000 population (2019) across the Crossrail 4local authorities
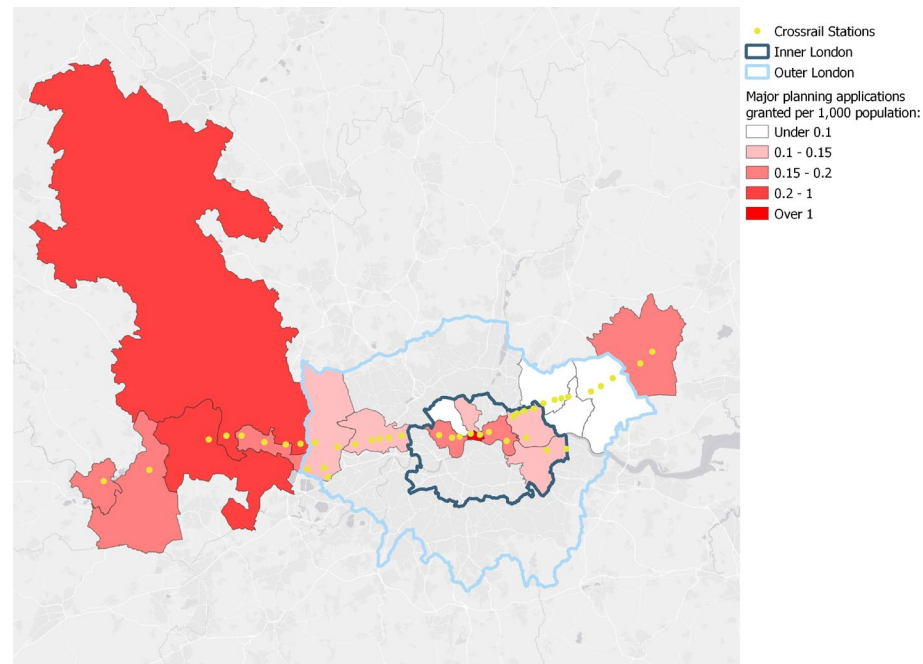
Source: MHCLG, Planning Applications Decisions - Major and Minor Developments, England, District by Outcome Live Tables, 2019 and ONS Population Estimates, 2019

* Major and minor planning applications were classified according to the principal use within the development, usually defined as the use which accounts for the greater proportion of the new floor space. A major application was defined as including 10 or more dwellings, the provision of a building or buildings where the floor space to be created by the development is 1,000 sqm or more and development carried out on a site of a hectare or more.
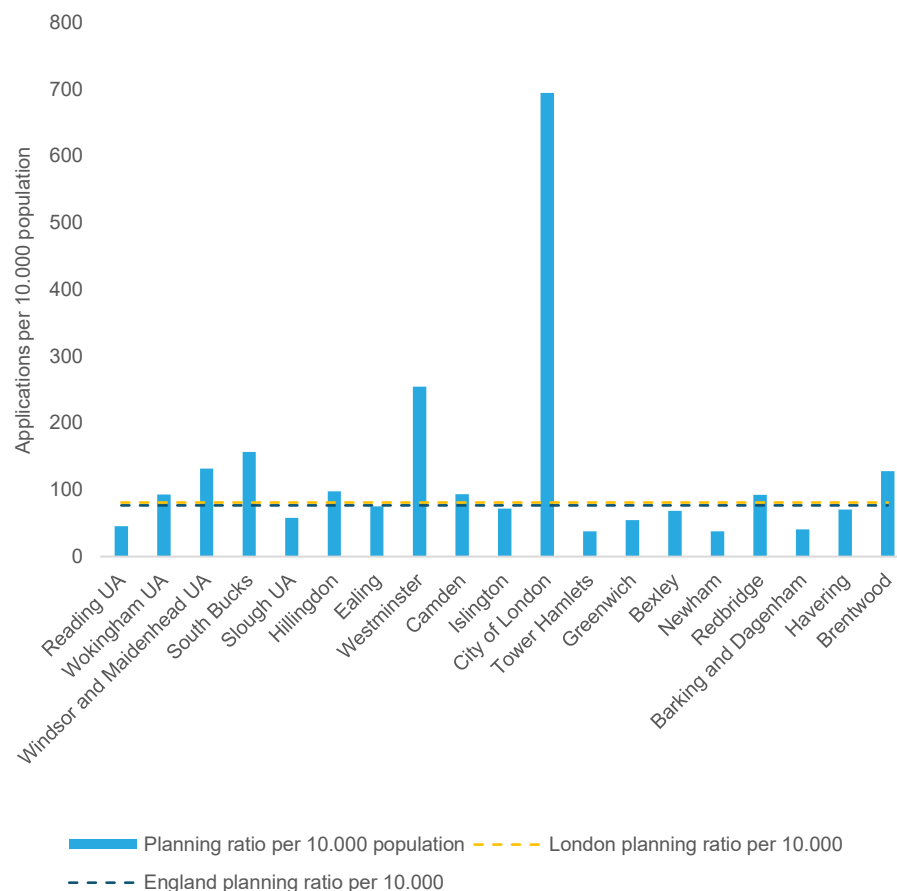
9. Planning Activity

Trends in planning activity – all planning applications

Figure 95 sets out the number of planning applications (all types) per 10,000 population along the line-wide authorities in 2019. A number of authorities along the line had lower levels of planning activity per capita than the UK as a whole, including Reading, Slough, Ealing, Tower Hamlets, Greenwich, Bexley, Newham, Barking & Dagenham and Havering. Inner London had a higher per capita planning activity than Outer London, London as a whole and the South East and East of England.

Peak planning activity was focused within the central areas of the route, especially in the City of London and City of Westminster. There are a number of authorities showing high levels of planning activity to the west and east as well, including Windsor & Maidenhead, South Buckinghamshire, Wokingham and Brentwood.

Figure 95: Number of planning applications per 10,000 population, along line-wide authorities. Compared to average for England and London in 2019

Source: Census 2019 ONS, DLUHC, Live tables on planning application statistics – Reference table 1: PS1 – England totals

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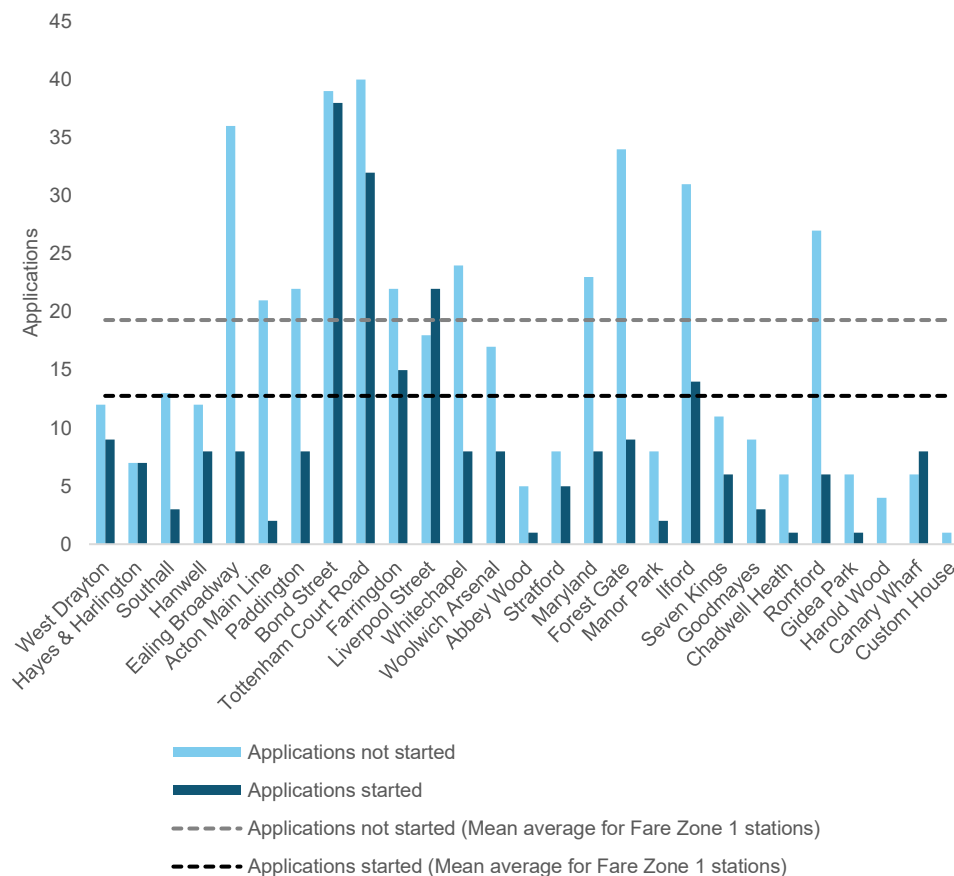# 9. Planning Activity
Planning applications within buffers

The London Development Database includes aggregated impacts of planning application activity in London and highlights applications according to those not started, started and completed*. This source was not available for 2019, and so the data that follows is from 2021; therefore, this chart is an exception to the baseline period.

Along the section of the Crossrail route falling within Greater London, the stations which have shown the greatest level of planning activity within a 500m radius include Bond Street, Tottenham Court Road, Farringdon, Liverpool Street and Ilford. Applications started for Bond Street and Tottenham Court Road were significantly above the average number of applications started for stations in Fare Zone 1 of London in 2021.

There are a number of developments in the pipeline in Ealing Broadway, Acton Main Line, Paddington, Maryland, Forest Gate, Ilford and Romford, which fed into a high number of applications not yet started. These align with the key growth and regeneration areas.

The potential effects of the COVID-19 crisis can be observed through the gap between applications not started and started. There was a rise of around 20% in applications between 2017 and 2021 in the 500m radius around Crossrail stations, when they fell by 12% around Fare Zone 1 stations in the same period.

*See definitions on the London Development Database, "Further Information" tab

Figure 96: Largest planning applications within a 500m radius, compared with mean average of applications for stations within Fare Zone 1, 2021

Legend:
- Applications not started
- Applications started
- Applications not started (Mean average for Fare Zone 1 stations)
- Applications started (Mean average for Fare Zone 1 stations)

Source; London Development Database Web Map, 2021

9. Planning Activity

Planning applications within buffers (continued)

Figure 97: Largest planning applications within a 1km radius, compared with mean average of applications for stations within Fare Zone 1, 2021
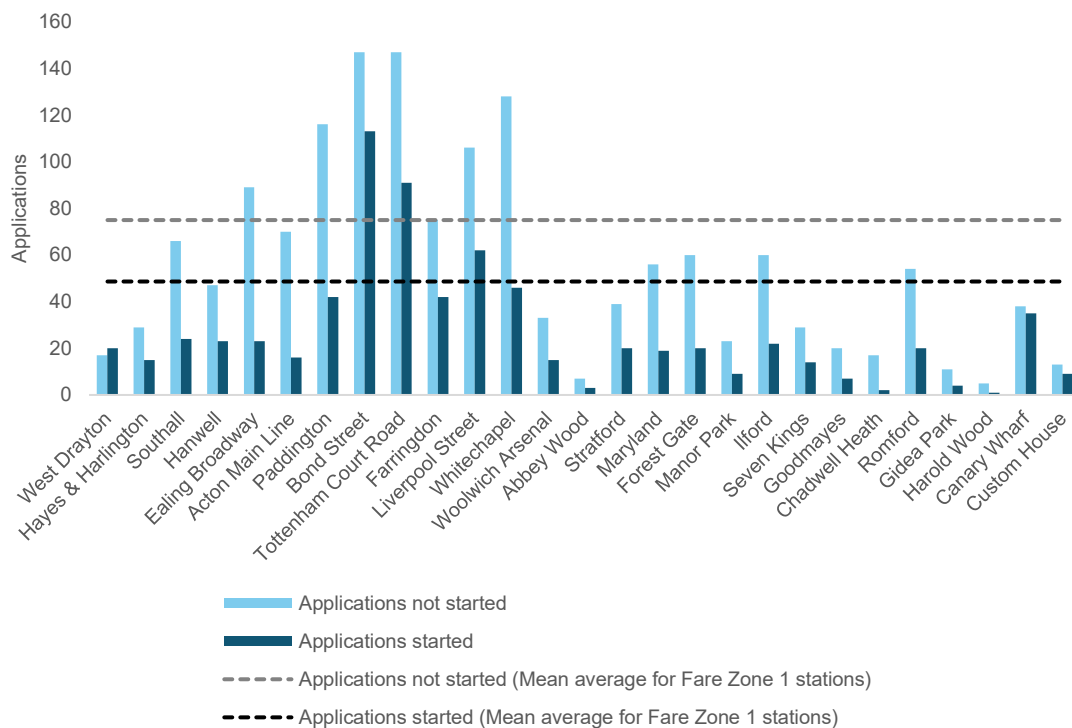

Within the 1km buffer, there was higher planning activity around the central station locations in 2021. Planning activity around central London Elizabeth line stations was significantly higher than the average planning activity of Fare Zone 1 stations overall. Across both the 500m and 1km buffers, Ealing Broadway was one of the only stations to have shown higher levels of applications started, in relation to pipeline activity. This may reflect how planning activity at Ealing Broadway was more mature compared to much of the Crossrail route.

In the 1km radius around future Elizabeth line stations in central London, around 25% of total applications were located within the 500m radius. For stations outside of Fare Zone 1 40% of them were in the 500m radius. This suggests that the further away the stations are from central London, the more they play a role of sub-centralities, with Crossrail potentially reinforcing the attractiveness of these areas compared to their direct surroundings.

Source; London Development Database Web Map, 2021

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10. Regeneration

10. Regeneration
Regeneration in London – Policy context

The Elizabeth line is expected to underpin a number of strategic regeneration schemes within London, and to connect residents to opportunities across the capital. It is expected to play a significant role in connecting key regeneration and opportunity areas within London. The new link will provide the vital access to opportunities and services that will contribute to the delivery of Good Growth.

This section focuses on the impact of the Elizabeth line's regeneration impact using four case studies on Stratford, Paddington Basin, Greenwich Peninsula and Canada Water. Focusing on these case studies supports our understanding of how the Elizabeth line will affect different areas in London.

Throughout the baseline period, a number of strategic regeneration projects have been delivered, or received approval to bring forward development in the next Plan period. The 2021 London Plan (Greater London Authority, 2021) identified 48 Opportunity Areas (Figure 98) and numerous Strategic Areas for Regeneration (Figure 99), which together, were aimed to contribute to Good Growth.

The London Plan defined Opportunity Areas as large areas with significant potential to accommodate new housing and commercial development, along with improved public realm and transport accessibility. They can typically support at least 2,500 net additional homes or 5,000 net additional jobs, or a combination of the two.

In order to establish certainty in the planning and development process, the GLA provides support to develop Opportunity Area Planning Frameworks (OPAFs). These frameworks set out the planning strategy to guide infrastructure and transport provision, and accessibility and design for new development sites.

Figure 98: Opportunity Areas

Source: Greater London Authority, 2020

Figure 99: Strategic Areas for Regeneration
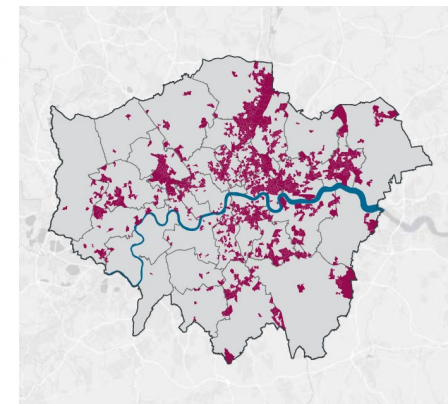
● Strategic areas for regeneration

Source: GLA Planning and DCLG, 2021, The London Plan 2021

According to the London Plan 2021, the primary policy ambition for large scale urban regeneration was to use developments as a way to achieve social objectives. These include delivery of housing, job creation, placemaking, social integration and sustainable urban living. Strategic Areas for Regeneration were identified within the London Plan as areas where regeneration initiatives will be taken across London's most deprived areas. The aim was for the regeneration initiatives to address poverty and inequality, and underlying social, economic, and environmental barriers that stand in the way of Good Growth. Good Growth, growth that is socially and economically inclusive and environmentally sustainable, underpins the entire London Plan and each policy (London Plan, 2021).

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10. Regeneration
Stratford, East London

Stratford station will be a key interchange on the future Elizabeth line. For the COVID-19 year of 2020, it was the busiest railway station in the UK. Since London won the bid to host the 2012 Olympics in 2005, the area around Stratford station has been transformed, and has attracted significant media and policy attention due to the huge changes in transport, housing, retail and office space, contributing to a step-change improvement in Stratford's image. The 2012 Olympics were intended to transform Stratford and the Lower Lea Valley, and ensure that regeneration impacts across East London were spread out more broadly and linked to regeneration of riverside areas, such as the Thames Gateway. The significant investment in the area was intended to create a legacy of favourable social, economic and environmental impacts, and to fully utilise key sporting infrastructure beyond the 2012 Olympics.

There are a number of future investments and developments that ongoing in the area currently in 2022, including UCL East, which is part of an integrated urban quarter. The area around the Queen Elizabeth Olympic Park will also continue to see developments up to 2030 and beyond, with new residential and commercial developments.

The delivery of sports venues and housing were underpinned by a number of significant transport improvements, including:
• Jubilee Line extension
• Docklands Light Railway extension to Woolwich
• High Speed 1 and the new Stratford International Station
• Olympic Park Canal Loop for cycling East London Line upgrade

The Elizabeth line will contribute to bring forward growth and development in Stratford and eastwards.
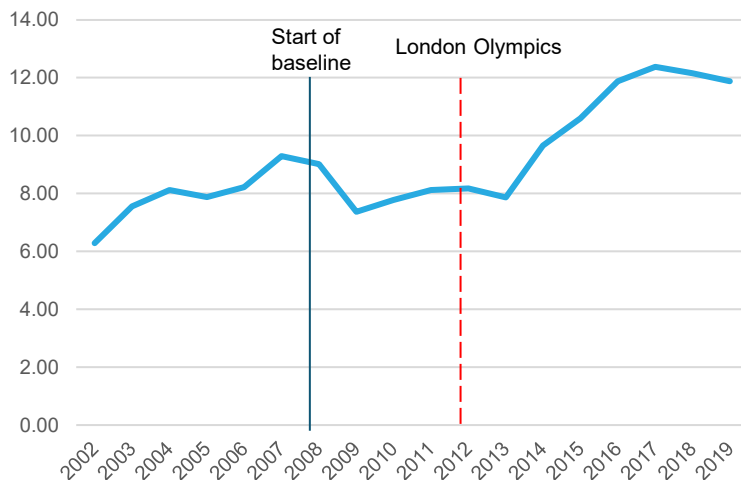
The Local Planning Authority for the area, the London Legacy Development Corporation, set a strategy (LLDC, 2021) for the future of Stratford and the surrounding area to capitalise on all of the growth that has occurred since 2012. Stratford is classed as a labour-attracting area; an area which, according to the 2011 Census, has a considerable difference between the resident and workplace population around the station. The London Plan also considered Stratford to be a potential reserve location for central London office functions. Therefore, it is expected that Stratford, and surrounding areas, will continue to experience an increase in population growth, as well as other developments and investments.

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10. Regeneration

### Stratford, East London (continued)

The Olympic-led regeneration of Stratford had significant impacts on the local property market, including an increase in property prices, and a decline in housing affordability. Figure 100 sets out the average house prices in Newham, the borough in which Stratford is located, for both new build and existing dwellings, demonstrating the rise in prices after the 2012 Olympics. Figure 101 shows the average prices across all property types in Newham, including detached, flats, semi-detached, terrace. It shows that average house prices have more than doubled for new builds and nearly doubled for existing properties since 2008.

Figure 101: Average house prices in Newham

Source: Land Registry, 2021, UK House Price Index

Figure 100: House price ratio to residence-based earnings for Newham

Source: ONS, 2021, Median house price ratio

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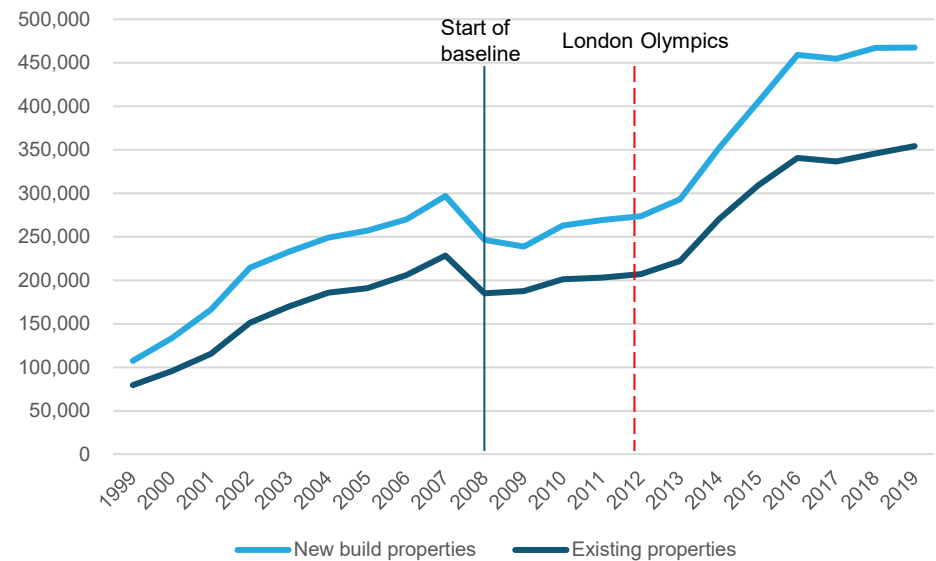
10. Regeneration
Paddington Basin

Paddington railway station will be a major interchange of the completed Elizabeth line. Paddington has a long history of redevelopment, with many rounds of post war reconstruction transforming both the built form and the socio-economic landscape of the area. After subsequent periods of deindustrialisation, Westminster City Council designated Paddington as a Special Policy Area in 1988 to help relieve development pressure across the borough, and to create a strong identity within the wider London context. In 1998, Paddington became the London terminus for the Heathrow Express Rail Link, enhancing its status as a key transport node within the city. Paddington station is also connected to the Great Western Railway and the Bakerloo, Circle, District, and Hammersmith & City lines.

Paddington was first identified as an Opportunity Area in 2004. In addition to improved connectivity and station improvements, Crossrail Ltd has been working with Westminster Council on proposals for improvements to the area around the station (Crossrail, 2018). Paddington is recognised as being a major site for significant regeneration and has, since the 2000s, undergone major change, comprising of 185,000 sq. m of mixed-use development, across a 32 ha site that stretched around Paddington Station and the Grand Union Canal Basin. Significant environmental improvements to the area have also been made. The Grand Union Canal has been cleaned and redeveloped into a key destination for commercial and leisure activities. Figure 102 shows a birds-eye view about the public realm strategy which is a key part of the regeneration process.

The Elizabeth line is expected to increase transport capacity in the area, strengthening Paddington's position as a transport connectivity hub, as well as continue to drive development in the area. Residential and commercial development is expected to continue to increase in Paddington, as well as surrounding areas, all of which the Elizabeth line will contribute to.

Figure 102: Paddington public realm strategy overview

Source: Paddington Public Realm Strategy

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10. Regeneration
Greenwich Peninsula

On the completed Elizabeth line, Canary Wharf, Custom House and Woolwich stations will be in close proximity to the Greenwich Peninsula. Greenwich is recognised as being an area with significant, fast-paced future development. The 2021 London Plan identified two Opportunity Areas in the Royal Borough of Greenwich, Greenwich Riverside and the Greenwich Peninsula.

In its Local Plan (Royal Borough of Greenwich, 2014) Greenwich set out its core strategy for developments that will take place between 2014 and 2028 with a focus on the Greenwich Peninsula as a location with significant housing, cultural and commercial development. To guide future development and support the planning process in the Greenwich Peninsula specifically, the Council published a Peninsula West Masterplan Supplementary Planning Document (SPD) in 2012 (Royal Borough of Greenwich, 2012).

The SPD set out a vision for regeneration in the area, including an ambitions to improve its housing and commercial offer. The primary rationale for regeneration was that the west side of the Greenwich Peninsula had been relatively underdeveloped due to constraints left by the remnants of industrial history, and the location of the Blackwell Tunnel. Although key to the area's history, these features have not been easily integrated into mixed-use development, and have fragmented the urban landscape. This part of the borough was considered to have significant regeneration potential, due to its riverside location and proximity to key destinations across London, including Canary Wharf. In conjunction with a number of other development plans, the Greenwich Peninsula is recognised as having great potential to make a substantial contribution to the sub-region, and drive regeneration across the east of the capital.

The Greenwich Peninsula site was brought forward as part of the drive to release surplus public land, in order to boost the delivery of housing in London. Approval of the stations in the north of the borough, at Abbey Wood and Woolwich was justified due to the opportunity of:

- An increase in housing with a target of almost 30,000 additional homes by 2028 (including serviced apartments and affordable housing), which is a housing target set in the 2021 London Plan.
- An increase in retail space.
- An increase in commercial space.
- Tourist attractions and additional green space.

Figure 103: House prices in Greenwich for new build and existing properties
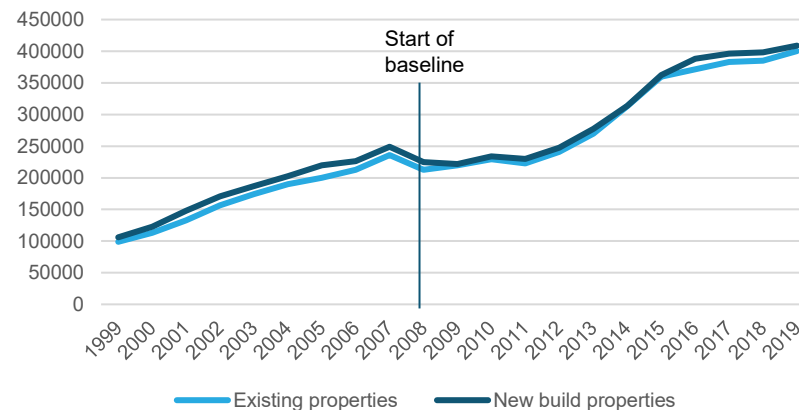
Source: Land Registry, 2021, UK House Price Index

*Paddington is located in Westminster

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10. Regeneration
Canada Water

On the Jubilee line extension, Canada Water station is one stop away from Canary Wharf station, which will be part of the completed Elizabeth line route. Canada Water is a mixed-use regeneration project, which was identified in the 2021 London Plan as an Opportunity Area. The London Plan identified that this site could potentially provide space for around 20,000 additional jobs and 5,000 dwellings.

The Canada Water Masterplan (Canada Water, 2018) covers 53 acres and aims to respond to the needs and aspirations of the GLA and Southwark Council. The scheme is situated in the London Borough of Southwark, located on the Surrey Docks waterfront, and the site has good public transport links through the Jubilee Line and the East London Line. Regeneration of this waterfront site in Southwark will focus on the transport interchange around the shopping centre, with ambitions to become a major new town centre with an extensive retail offer. Principle uses for the site include high quality leisure and retail uses, events space and new public realm. The SE16 Printworks Site formed a key feature in the area's regeneration, which has been transformed its former industrial use to a multipurpose creative arts venue.

The Masterplan also includes the provision of affordable homes, and retail, leisure, entertainment, and community space. Proposed transport improvements are also a crucial part of connecting Canada Water to the rest of London, reducing car use, and promoting healthier streets.

King's College London University will also form an anchor institution by developing a new campus on the former Mulberry Business Park Site. This will include around new student flats, along with a significant increase in teaching and research facilities.

Figure 104: Proposed land use as part of Canada Water regeneration

■ Surrey Quays Shopping Centre Site
■ SE16 Printworks Site
■ Surrey Quays Leisure Park Site

Source: Canada Water Masterplan, 2018