Basildon Local Plan Employment Land Needs Focused Update

Basildon Borough Council

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LICHFIELDS

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1.0 Introduction

1.1 Basildon Borough Council ("the Council") commissioned Lichfields to prepare updated evidence on future employment land needs in the Borough to provide updated context for the Council's emerging Local Plan employment policies which will cover the period between 2014 and 2034.

Summary of Council's Evidence

1.2 The submitted Local Plan employment policies set out in "Chapter 7: Building a Strong, Competitive Economy" draw upon the following employment land evidence studies prepared over a number of years:

- 2013 Employment Land and Premises Study (2013 ELPS);
- 2016 Essex Grow-on Space Feasibility Study (and 2020 Update);
- 2017 South Essex Economic Development Needs Assessment ('2017 EDNA'); and
- 2018 Economic Development Topic Paper.

1.3 For the purposes of the Local Plan, the 2017 EDNA provides the latest evidence on employment demand and supply assessment for Basildon. The EDNA identifies a total demand of 28 ha of employment land in Basildon under the 'combined scenario'. This is comprised of 6 ha for offices, 10 ha for manufacturing and industrial and 12 ha for storage and distribution uses.

1.4 The Essex Grow-on Space Feasibility Study (2016) suggests that 3.6 ha of office and 1.0ha of industrial land should be provided in Basildon over a 10-year period to provide for grow-on space, which is a term used to describe the slightly larger premises that growing small medium enterprises (SME) require in order to expand their operations. On a pro-rata basis for 20 years, the Council proposes to provide 9.0 ha of land for offices (7.0 ha) and industrial (2.0 ha) to help address a market failure to provide sufficient grow-on space in the Borough.

1.5 The Council also proposes to accommodate some displaced or unmet employment growth needs arising from Greater London, equating to an additional 14.0ha of land. The 2017 EDNA includes a 'London Industrial Land Re-location' scenario which identifies a potential need for an additional 68.0 ha for B2 and B8 uses in Basildon, over and above the baseline requirements. However, the EDNA's recommended 'combined scenario' only included an allowance of 9ha for London's unmet B2 and B8 uses. The Council therefore decided to increase the needs to be accommodated by an additional 14.0 ha as part of the Borough's contribution to meeting the needs identified.

1.6 Synthesising the above, there is an identified requirement for employment land of 51.0 ha across the 2014-2034 Plan period. Then, the 2018 Economic Development Topic Paper considers the impact that unexpected losses and churn had had on the Basildon Borough for the period since the ELPS was published in 2013, suggesting that in order to accommodate 4.8 ha of additional B or E(g) Class employment need, 8.1 ha of land supply (i.e. +60%) is required in order to account for windfall losses and churn. This was considered based on the 2017 EDNA's reference to a 'supply-side' adjustment where additional land supply is required to meet needs. Combining the above evidence, the identified requirement equates to c.80.0 ha.

Scope

1.7 The purpose of this report is to consider the latest position in terms of the future growth potential of the Borough's economy, focusing specifically upon the latest job growth forecasts (i.e. labour demand) as an indicator of future needs. In doing so, the report provides updated

context for the Council's emerging Local Plan, but is not intended to supersede or replace the earlier evidence upon which the Local Plan is based.

1.8 The report assesses future labour demand taking account of recent changes in the macroeconomy and likely changes in local circumstances and market conditions across the area in line with the Planning Practice Guidance (PPG) requirements for preparing economic need assessments.

1.9 This report includes consideration of economic development as defined by the NPPF, with a primary focus upon the typologies set out in the 'B' Use Classes and part 'E' Use Classes as outlined below:

- **Office**: including offices in Eg(i) – formerly B1(a) – Use Class and research & development in Eg(ii) – formerly B1(b) – Use Class.

- **Industrial**: including light industrial in Eg(iii) – formerly B1(c) – Use Class and industrial and manufacturing space in B2 Use Class.

- **Distribution**: including storage and distribution, warehousing and wholesale uses typically in B8 Use Class.

1.10 References to 'employment uses/space' and 'employment sectors' refer to all the above uses.

1.11 An important consideration for any technical work of this type is that the study is inevitably a point-in-time assessment. The study has used the latest available data and other evidence available at the time of reporting, while the accuracy of third-party data has not been checked or verified by Lichfields.

Structure

1.12 The remainder of this report is structured as follows:

- **Employment growth scenarios (Section 2.0)** – updates the net employment requirements related to labour demand scenarios considering the previous evidence (namely the 2017 EDNA) and national planning policy guidance.

- **Net to gross employment requirements (Section 3.0)** – considers all the potential allowances that could be added to net employment requirements to inform the planning requirements.

- **Conclusions (Section 4.0)** – summarises the overall findings.

2.0 Employment growth scenarios

2.1 This section considers a range of employment growth scenarios for Basildon over the 2014-2034 Local Plan period, and translates these into potential space requirements for the each of the main employment uses.

Overview

2.2 Following the Planning Practice Guidance (PPG) on preparing economic development needs assessments (para 027), a number of potential future economic scenarios are updated on a consistent basis with the 2017 EDNA . These scenarios are detailed below:

1 **Scenario 1 – Baseline labour demand (EEFM 2019):** baseline forecasts of employment growth derived from the East England Forecasting Model 2019 (EEFM 2019) (latest release in August 2020). The 2017 EDNA was based on the 2016 EEFM;

2 **Scenario 2 – Baseline labour demand (Experian, September 2021):** baseline projections of employment growth derived from the latest Experian forecasts to reflect more recent macroeconomic changes including Brexit and the Covid-19 pandemic;

3 **Scenario 3 – EEFM 2019 growth scenario (in line with 2017 EDNA assumptions):** adopting the assumptions used in the 2017 EDNA, this scenario presents an updated estimate of the combined scenario forecast based on EEFM projections; and

4 **Scenario 4 – Experian 2021 growth scenario (in line with 2017 EDNA assumptions):** adopting the assumptions used in the 2017 EDNA, this scenario presents an updated estimate of the 'combined scenario' forecast based on Experian baseline projections.

2.3 The outputs of each scenario are discussed below.

Baseline Job Growth Scenarios

Scenario 1: Baseline labour demand (EEFM 2019)

2.4 Forecasts of employment growth in Basildon over the plan period of 2014-2034 have been sourced from the EEFM 2019, which take into account regional and national macro-economic patterns to predict future economic growth at the local authority level. It should be noted that the East of England Local Government Association has decided to discontinue updating the EEFM, and so the 2019 version is the latest release available[1].

2.5 The EEFM 2019 is based on assumptions which precede the Covid-19 pandemic and does not therefore factor in the economic implications associated with this. The EEFM 2019 baseline forecasts indicate an overall growth of 14,497 jobs for the Borough over the Local Plan period, equivalent to 690 jobs per annum. This is just 86 jobs or 4 jobs per annum below the growth assumed in the 2016 EEFM used in the 2017 EDNA, across the same period. In both releases, the growth rate for all sectors represents about 16%.

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[1] East of England Forecasting Model (EEFM)

Table 2.1 Scenario 1 - EEFM 2019 Baseline - Forecast Jobs Change in Basildon, 2014-2034

Type of Space / Use Class	Number of Jobs		Change
	2014	2034	2014-2034
Offices E(g)(i)/E(g)(ii)	21,494	22,062	567
Manufacturing E(g)(iii)/B2	13,699	14,654	955
Distribution B8	9,102	9,760	657
Total Employment Class Jobs	44,296	46,475	2,179
Jobs in All Sectors	93,074	107,571	14,497

Source: EEFM 2019 / Lichfields analysis

2.6   Employment in office-based sectors is expected to increase by 567 jobs, while employment in manufacturing and distribution is expected to increase by 955 and 657 jobs respectively, over the Local Plan period.

2.7   This forecast compares with an average of 772 jobs per annum recorded within Basildon for 2001-14 period[2] (data derived from EEFM 2019). As a result, the current forecast suggests that employment sectors are expected to perform less strongly over the Local Plan period than has been the case historically.

2.8   Table 2.2 shows forecast employment change for individual sectors. Health and care, retail, construction, accommodation and food services, professional services, employment activities and arts and entertainment are expected to drive the majority of employment growth in the Borough up to 2034. This suggests that mainly non-employment class sectors are expected to drive the majority of job growth (85%) over the study period.

2.9   The employment sectors playing a much less significant role in job growth terms, with the exception of professional services, which relate mainly to office space requirements and is expected to grow significantly (24.2%). It is also noted that the highest decline in employment relates to employment class jobs as presented below.

Table 2.2 Jobs Change by Sector – Scenario 1 (EEFM), 2014-2034

Sector	Employment class sector?	Job Change 2014-2034	Change %
Health and care	No	4,281	35.2%
Retail	No	3,225	28.1%
Construction	Part	3,144	56.8%
Accommodation and Food	No	2,081	45.7%
Professional Services	Part	1,932	24.2%
Employment Activities	No	1,074	50.0%
Arts and Entertainment	No	992	54.5%
Education	No	-312	-4.4%
Publishing & broadcasting	Yes	-653	-55.2%
Business services	Part	-829	-17.8%
Manufacturing - general	Yes	-845	-34.7%
Manufacturing - metals	Yes	-884	-33.8%
Finance	Yes	-908	-24.4%

Source: EEFM 2019 / Lichfields analysis

[2] Data available from 2001 onwards

2.10 These jobs forecasts are then converted to future employment space requirements assuming typical ratios of jobs to floorspace for the different uses. The same density and plot ratio assumptions used within the 2017 EDNA have been applied[3] as follows:

- **Offices**: 1 job per 12 sqm (NIA)[4] at a plot ratio of 1.0;

- **Industry**: 1 job per 36 sqm (GIA)[5] at a plot ratio of 0.4;

- **Warehousing and Distribution**: 1 job per 70 sqm (GEA) at a plot ratio of 0.4.

2.11 Adopting the same methodology as the 2017 EDNA and including a vacancy rate of 8%[6] for all positive floorspace requirements to reflect a normal level of market vacancy[7], the base forecast implies a net employment floorspace requirement up to 2034 of about 122,000 sq.m, or c. 30ha (Table 2.3).

Table 2.3 Net Employment Space Requirements based on Scenario 1, 2014-2034

Type of Space / Use Class	Net Floorspace Requirement (sqm)	Net Floorspace Requirement (ha)
Office E(g)(i)/E(g)(ii)	8,460	1.5
Manufacturing E(g)(iii)/B2	63,610	15.9
Distribution B8	49,700	12.5
Total Employment Space Requirements	**121,760**	**29.9**

Source: EEFM 2019 / Lichfields analysis (rounded figures)

Scenario 2: Baseline labour demand (Experian, September 2021)

2.12 The Experian September 2021 forecast comprises the latest available jobs growth forecasts reflecting latest economic developments in relation to Covid-19 and Brexit (further information regarding the Experian input assumptions is provided in Appendix 1).

2.13 The Experian baseline forecasts indicate an overall growth of 16,400 jobs for the Borough over the Local Plan period, equivalent to 781 jobs per annum. This indicates a stronger employment growth compared to EEFM 2019, forecasting 90 more jobs per annum across the Local Plan period. The growth rate of all sectors represents an increase of 17% or 0.8% per annum.

2.14 In particular, employment in office and distribution-based sectors is expected to increase significantly more compared to what is forecast by the 2019 EEFM, but manufacturing-based employment is expected to decrease over the Local Plan period (Table 2.4).

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[3] 2017 EDNA, paragraph 8.34, pages 170-1

[4] This is the density ratio used in 2017 EDNA, which is then translated to 13.8 GEA sqm per worker by adding 15%

[5] This is the density ratio used in 2017 EDNA, which is then translated to 37.8 GEA sqm per worker by adding 5%

[6] For example, the Greater London Authority cites an industrial vacancy rate of 8% for this purpose. See
Land for Industry and Transport Supplementary Planning Guidance, Greater London Authority (2012), pg 31
https://www.london.gov.uk/file/5275/download?token=2kudYJzP

[7] This is required to support the efficient operation of a 'normal' market, to give choice and allow for movement of firms (e.g. expansion, relocation etc) in the marketplace.

Table 2.4 Scenario 2 - Experian (September 2021) Baseline - Forecast Jobs Change in Basildon, 2014-2034

Type of Space / Use Class	Number of Jobs		Change
	2014	2034	2014-2034
Offices E(g)(i)/E(g)(ii)	20,750	25,746	4,995
Manufacturing E(g)(iii)/B2	16,132	15,071	-1,061
Distribution B8	8,723	11,103	2,381
Total Employment Class Sectors	**45,605**	**51,921**	**6,315**
Jobs in All Sectors	**95,600**	**112,000**	**16,400**

Source: Experian (September 2021) / Lichfields analysis

2.15   Table 2.5 shows forecast employment change for individual sectors. Professional services, health and care, land transport, residential care, specialised construction, education and wholesale are expected to drive the majority of employment growth in the Borough up to 2034. This suggests that the majority of job growth (61%) over the study period will be driven by sectors outside the employment use classes, albeit the proportion is smaller when compared to the 2019 EEFM equivalent of 85%.

Table 2.5 Jobs Change by Sector - Scenario 2 (Experian), 2014-2034

Sector	Employment class sector?	Change 2014-2034	Change %
Professional Services	Part	4,800	68.6%
Health and care	No	3,800	45.8%
Land Transport, Storage and Post	Part	2,000	46.5%
Residential Care & Social Work	No	1,800	42.9%
Specialised Construction Activities	Yes	1,600	26.2%
Education	No	1,500	24.2%
Wholesale	Part	900	12.9%
Computer & Electronic Products (manufacture of)	Yes	-500	-62.5%
Metal Products (manufacture of)	Yes	-500	-26.3%
Printing and Recorded Media (manufacture of)	Yes	-500	-55.6%
Retail	No	-500	-4.4%
Transport Equipment (manufacture of)	Yes	-1,400	-77.8%

Source: Experian (September 2021) / Lichfields analysis

2.16   Adopting the same methodology as the 2017 EDNA (see paragraph 2.10) and including a vacancy rate of 8% to all positive floorspace requirements (see paragraph 2.11), the Experian base forecast implies a net employment floorspace requirement up to 2034 of about 261,000 sq.m, or c. 60ha (Table 2.6).

Table 2.6 Net Employment Space Requirements based on Scenario 2, 2014-2034

Type of Space / Use Class	Net Floorspace Requirement (sqm)	Net Floorspace Requirement (ha)
Office E(g)(i)/E(g)(ii)	74,450	13.0
Manufacturing E(g)(iii)/B2	6,790[8]	1.7
Distribution B8	180,000	45.0
Total Employment Requirements	**261,220**	**59.7**

Source: Experian (September 2021) / Lichfields analysis (rounded figures)

Growth Scenarios

2.17   In addition to the baseline forecast, the 2017 EDNA considered an "*advanced manufacturing scenario*" for Basildon, which uplifted the growth rates for certain industrial sectors as follows:

It is considered likely that the ICT, transport and health sector activities in Basildon will have a very different experience over the projection period as the economy evolves in certain directions. As such, these sectors are boosted to reflect improved growth prospects. This translates into an annual boost of 0.5% for Pharmaceuticals manufacturing, 1.5% for transport equipment manufacturing, 1% for electronics manufacturing, 1% for R&D activity and 1% for professional services activity over the projection period to 2036." (2017 EDNA, para 8.48).

2.18   An updated version of this scenario has been prepared, by applying the same adjustment factors to the 2019 EEFM and 2021 Experian baseline forecasts as outlined above. Essentially this will increase the expected activity in office and manufacturing-based sectors.

Scenario 3: EEFM 2019 Growth Scenario

2.19   Scenario 3 presents the EEFM 2019 baseline forecast adjusted to reflect the advanced manufacturing scenario. This indicates overall growth of 17,325 jobs for the Borough over the Local Plan period, equivalent to 825 jobs per annum. It presents a stronger employment growth compared to the EEFM 2019 baseline forecast with 135 more office- and manufacturing-based jobs per annum than Scenario 1 across the Local Plan period. The growth rate represents an increase of 19% or 0.9% per annum.

Table 2.7 Scenario 3 Forecast Jobs Change in Basildon, 2014-2034

Type of Space / Use Class	Number of Jobs		Change
	2014	**2034**	**2014-2034**
Offices E(g)(i)/E(g)(ii)	21,494	24,164	2,670
Manufacturing E(g)(iii)/B2	13,699	15,305	1,606
Distribution B8	9,102	9,760	657
Total Employment Class Jobs	**44,296**	**49,229**	**4,933**
Jobs in All Sectors	**93,074**	**110,399**	**17,325**

Source: EEFM 2019/ GVA 2017 / Lichfields analysis

[8] It should be highlighted that although the combined light industrial and manufacturing jobs forecast is negative, the estimated floorspace projection is positive due to the fact that the light industrial jobs increase is translated to higher positive floorspace requirement compared to manufacturing jobs and, consequently, floorspace decrease.

2.20   Adopting the same methodology as the 2017 EDNA (see paragraph 2.10) and including a vacancy rate of 8% to all positive floorspace requirements (see paragraph 2.11), Scenario 3 results in the following net employment floorspace requirements up to 2034 (Table 2.8).

Table 2.8 Net Employment Space Requirements based on Scenario 3, 2014-2034

Type of Space / Use Class	Net Floorspace Requirement (sqm)	Net Floorspace Requirement (ha)
Office E(g)(i)/E(g)(ii)	39,790	7.0
Manufacturing E(g)(iii)/B2	75,920	19.0
Distribution B8	49,690	12.4
Total Employment Space Requirements	**165,410**	**38.4**

Source: EEFM 2019/ GVA 2017 / Lichfields analysis (rounded figures)

Scenario 4: Experian 2021 Growth Scenario

2.21   Scenario 4 presents the Experian (September 2021) baseline forecast adjusted to reflect the advanced manufacturing scenario by applying the same assumptions to those sectors as presented in paragraph 2.17.

2.22   This indicates overall growth of 19,146 jobs for the Borough over the Local Plan period, equivalent to 912 jobs per annum. This presents a higher rate of employment growth compared to all the above scenarios, representing an increase of 20% or c. 1.0% per annum.

Table 2.9 Scenario 4 Forecast Jobs Change in Basildon, 2014-2034

Type of Space / Use Class	Number of Jobs		Change
	2014	**2034**	**2014-2034**
Offices E(g)(i)/E(g)(ii)	20,750	28,185	7,435
Manufacturing E(g)(iii)/B2	16,132	15,292	-840
Distribution B8	8,723	11,103	2,381
Total Employment Class Jobs	**45,605**	**54,581**	**8,976**
Jobs in All Sectors	**95,600**	**114,746**	**19,146**

Source: Experian 2021/ GVA 2017 / Lichfields analysis

2.23   Adopting the same methodology as the 2017 EDNA (see paragraph 2.10) and including a vacancy rate of 8% to all positive floorspace requirements (see paragraph 2.11), Scenario 4 results in the following net employment floorspace requirements up to 2034 (Table 2.10).

Table 2.10 Net Employment Space Requirements based on Scenario 4, 2014-2034

Type of Space / Use Class	Net Floorspace Requirement (sqm)	Net Floorspace Requirement (ha)
Office E(g)(i)/E(g)(ii)	110,810	19.4
Manufacturing E(g)(iii)/B2	11,790[9]	3.0
Distribution B8	179,980	47.6
Total Employment Space Requirements	**302,580**	**67.3**

Source: Experian 2021/ GVA 2017 / Lichfields analysis (rounded figures)

[9] It should be highlighted that although the combined light industrial and manufacturing jobs forecast is negative, the estimated floorspace projection is positive due to the fact that the light industrial jobs increase is translated to higher positive floorspace requirement compared to manufacturing jobs and, consequently, floorspace decrease.

Benchmarking with historic trends

2.24   Given the range of potential requirements implied by the different scenarios, it is useful to benchmark the forecast rates of job growth for each of the office, manufacturing and distribution uses with historic trends in Basildon. Whilst it is recognised that the past is not necessarily a predictor of the future, it helps to provide some context for interpreting the forecasts arising under each scenario particularly where these past trends cover a number of different economic cycles.
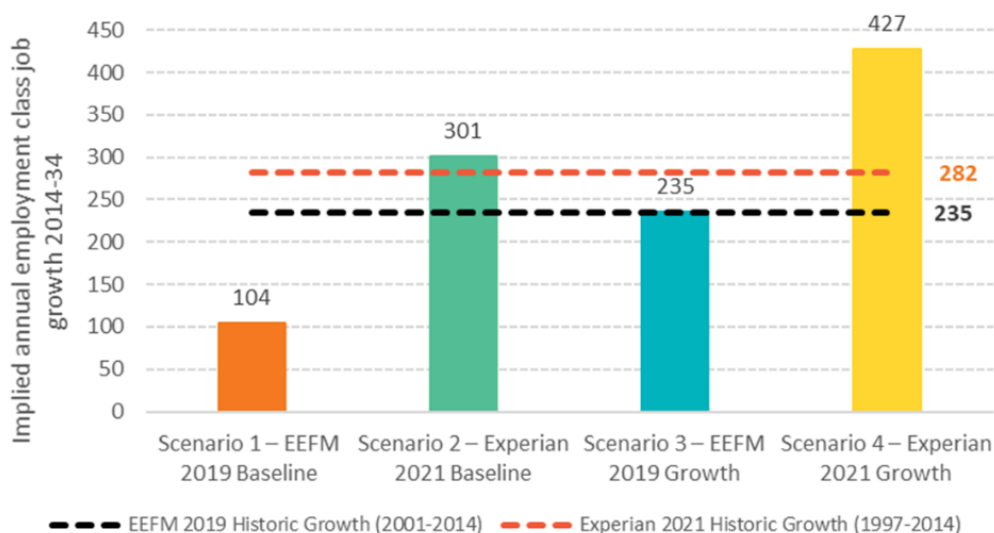
2.25   Table 2.11 and Figure 2.1 provide a comparison of the forecast scenarios with the trend data for Basildon sourced from EEFM (for 2001-2014) and Experian (for 1997-2014) on an annualised basis.

Table 2.11 Comparison of Annualised Employment Growth between Forecast Scenarios and Historic Trends

Type of Space / Use Class	Scenario 1 – EEFM 2019 Baseline	Scenario 2 – Experian 2021 Baseline	Scenario 3 – EEFM 2019 Growth	Scenario 4 – Experian 2021 Growth	EEFM 2019 Historic Trend (2001-2014)	Experian 2021 Historic Trend (1997-2014)
Office E(g)(i)/E(g)(ii)	27	238	127	354	425	380
Manufacturing E(g)(iii)/B2	45	-51	76	-40	-358	-195
Distribution B8	31	113	31	113	168	97
Total Employment Class Jobs	**104**	**301**	**235**	**427**	**235**	**282**

Source: EEFM 2019, GVA 2017, Experian 2021 / Lichfields analysis

Figure 2.1 Comparison of Annualised Employment Growth between Forecast Scenarios and Historic Trends

Source: EEFM 2019, GVA 2017, Experian 2021 / Lichfields analysis

2.26   In terms of the two baseline scenarios considered, Scenario 2 (Experian) (301 jobs p.a.) appears more aligned with historic trends in terms of growth across all employment uses (235 – 285 jobs

p.a.), with Scenario 1 (EEFM) (104 jobs p.a.) representing a much lower growth rate overall than Basildon has seen in the past. There is greater alignment when the upward adjustments are made to the EEFM in Scenario 3 (217 jobs p.a.), and which take Experian in Scenario 4 to above historic trends (427 jobs p.a.).

2.27   However, it is also necessary to look at how this job growth is distributed across the different employment uses:

- For **office uses**, historic trends show between 380-425 jobs p.a. being generated in Basildon. In this context, the EEFM baseline forecast (Scenario 1) appears conservative at just 27 jobs p.a, while the Experian baseline forecast (Scenario 2) is closer to what has been delivered in the past (albeit still lower) at 238 jobs p.a. The Experian growth scenario (Scenario 4) is the closest to historic trends (354 jobs p.a.).

- For **manufacturing uses**, historic trends show job losses ranging between 195-358 jobs p.a. Both baseline forecasts indicate the scale of previous manufacturing job declines in Basildon is expected to slow, with the EEFM forecasting some job growth of 45 (Scenario 1) to 76 (Scenario 3) jobs p.a., and Experian forecasting continued but relatively small scale declines of -51 (Scenario 2) to -40 (Scenario 4) jobs p.a.

- For **distribution uses**, trends show between 97-168 jobs p.a. being generated. In this context, the EEFM baseline forecast (Scenario 1) appears low at 31 jobs p.a, while the Experian baseline forecast (Scenario 2) is closer to past delivery of 113 jobs p.a.

2.28   Taken together, this suggests that the EEFM baseline forecasts are comparatively conservative when compared to historic job growth trends in Basildon, and that the levels of growth implied by the Experian forecasts are generally closer to the historic trend. The effect of this is most notable for office and distribution uses. The main effect of the advanced manufacturing scenarios is to further boost the expected activity in office and manufacturing-based sectors.

Summary

2.29   Drawing together the results from each of the future growth scenarios for Basildon, the net E(g)/B class employment floorspace requirements for the Borough are summarised below.

Table 2.12 Net Floorspace Requirement by Scenario, 2014-34 (sqm)

Type of Space / Use Class	Scenario 1 – EEFM 2019 Baseline	Scenario 2 – Experian 2021 Baseline	Scenario 3 – EEFM 2019 Growth	Scenario 4 – Experian 2021 - Growth
Office E(g)(i)/E(g)(ii)	8,460	74,450	39,790	110,810
Manufacturing E(g)(iii)/B2	63,610	6,790	75,920	11,790
Distribution B8	49,700	180,000	49,690	179,980
Total Employment Space Requirements	**121,760**	**261,220**	**165,410**	**302,580**

Source: EEFM 2019, GVA 2017, Experian 2021 / Lichfields analysis

Table 2.13 Net Land Requirement by Scenario, 2014-34 (ha)

Type of Space / Use Class	Scenario 1 – EEFM 2019 Baseline	Scenario 2 – Experian 2021 Baseline	Scenario 3 – EEFM 2019 Growth	Scenario 4 – Experian 2021 - Growth
Office E(g)(i)/E(g)(ii)	1.5	13.0	7.0	19.4
Manufacturing E(g)(iii)/B2	15.9	1.7	19.0	3.0
Distribution B8	12.5	45.0	12.4	47.6
Total Employment Space Requirements	**29.9**	**59.7**	**38.4**	**67.3**

Source: EEFM 2019, GVA 2017, Experian 2021 / Lichfields analysis

3.0 Employment land requirements

3.1   This section considers potential adjustments to the net employment space needs drawn from the employment growth scenarios set out in section 2.0, in order to identify the potential gross planning requirements for employment land in Basildon over the Local Plan period to 2034.

3.2   This is to help inform the extent to which the Council will need to make provision over and above the net requirements, in order to allow for factors such as delays in development sites coming forward, an allowance for replacement of ongoing losses of employment space, and in the context of the London industrial land relocation requirements and the need for grow-on space as identified by the Council's existing evidence.

Past Development Rates

3.3   The Council has analysed data on past completions for employment space between 2011/12 and 2020/21 as presented below. This provides an indication of market demand and records actual patterns of development that has been delivered in the Borough and can be used to inform the levels of the appropriate allowances.

3.4   This data incorporates development involving change of use to non-employment uses, including prior approvals from office to residential uses. Therefore, this analysis includes the period since the introduction of office to residential permitted development rights in 2013 (PDRs).

3.5   Table 3.1 shows the gross and net total and annual completion rates recorded since 2011/12. It is evident that the stock of office floorspace has been reducing over the last ten years with industrial and particularly distribution space driving net completions.

Table 3.1 Gross and Net Completions by Type of Space in Basildon, 2011/12 to 2020/21

Type of Space / Use Class	Gross Completions		Net Completions	
	Total	Annual Rate	Total	Annual Rate
Office E(g)(i)/E(g)(ii)	43,003	4,300	-28,934	-2,893
Manufacturing E(g)(iii)/B2	63,069	6,307	12,798	1,280
Distribution B8	74,284	7,428	50,961	5,096
Total	**180,356**	**18,036**	**34,825**	**3,483**

Source: Basildon Council 2021

3.6   It should be noted that the office decrease relates to 28,934 sqm and this is lower than the level of loss identified in the submitted 2018 Economic Development Topic Paper [EV025] which was estimated at c 33,850 sqm for 2013-16 period (and was weighted towards trends immediately post introduction of PDR). On the same basis, the current loss levels are also lower than those identified in the 2017 EDNA, which applied a windfall loss allowance of over 106,800 sqm based on net completions between 2011 and 2016. In general, the figures set out above give a longer term view of trends as they are derived from monitoring data over a wider timeframe.

Flexibility Margin

3.7   Whilst no specific guidance or recommendations are provided by the PPG, an allowance that is equivalent to the average time for a site to gain planning permission and be developed, typically up to about two years, is a typical margin to provides flexibility and market choice. This is equivalent to around 10% of the Local Plan period and is applied to positive net space requirements.

3.8   On this basis, the flexibility margin equates to two years of net positive annual completions figures. For offices, where there is a net loss annually over the monitoring period, the gross equivalent has been applied. Table 3.2 shows the level of margin applied per type of use.

Table 3.2 Flexibility Margin (sqm)

Type of Space / Use Class	Flexibility Margin (sqm)
Office E(g)(i)/E(g)(ii)	8,600
Manufacturing E(g)(iii)/B2	2,560
Distribution B8	10,192
Total	**21,535**

Source: Basildon Council 2021 / Lichfields analysis

Losses

3.9   It may be appropriate for the Council to make an allowance for the replacement of future losses of employment space that may be developed for other (non-office/industrial) uses over the plan period. Where such an allowance is factored into future employment space needs, it seeks to ensure that sufficient space is re-provided to account for employment space that could be lost moving forwards. It is intended, therefore, to provide some protection against the erosion of employment space over the plan period.

3.10   There are typically four approaches to calculate the level of this allowance, including:

1   Forecast the quantity of floorspace that will be lost in future and assume that a high proportion of this space will need to be replaced. The issue here is that there is no robust or scientific way of forecasting how much space will be lost, and the future may be very different from the past. If this method is used, the authority needs to look carefully at past losses and use local knowledge to make a judgement on how the future might compare with the past.

2   Make an overall adjustment to the preferred scenario to give an allowance for replacement. This is a simple approach but may be based on a fairly broad assumption.

3   Monitor the loss of employment space through regular reviews in the local plan. This would avoid the need to make assumptions about the future loss of employment space and base it on robust data. If these periodic reviews indicate a loss of high quality, occupied floorspace and vacancy rates continued to be low, the Council could take steps to replace this space by increasing the floorspace requirement accordingly. However, any Local Plan review reflecting the monitoring findings would take some years to come forward.

4   As part of the employment evidence the Council reviews through a qualitative assessment the existing employment sites and areas, to identify those which could or should be lost to non-employment uses, either because they are no longer suitable or viable for employment, or because they are judged as being needed for an alternative use, such as housing. Based on this assessment, the employment land calculation can develop different scenarios to illustrate possible futures, and plan for new sites accordingly.

3.11   The approach in which the Council specifically identifies employment sites and areas that may be lost to other uses, is generally the most robust way of estimating losses. In this context, it should be noted that the emerging Local Plan Policies E2 and E3 seek to protect all the existing employment areas and there is no scope for further release, and on this basis no further allowance for losses has been applied.

3.12   However, given the Local Plan period commences from 2014 and according to an analysis of the completions from 2014/15 to 2020/21 there has been a net loss of office floorspace of 2,620 sqm or 374 sqm per annum over the first third of the Local Plan period, with other uses recording net completions (Table 3.4).

Table 3.3 Gross and Net Completions by Type of Space in Basildon, 2014/15 to 2020/21 (sqm)

Type of Space / Use Class	Gross Completions		Net Completions	
	Total	Annual Rate	Total	Annual Rate
Office E(g)(i)/E(g)(ii)	40,822	5,832	- 2,621	- 374
Manufacturing E(g)(iii)/B2	60,889	8,698	13,839	1,977
Distribution B8	72,104	10,301	52,002	7,429
Total	173,815	24,831	63,219	9,031

Source: Basildon Council 2021 / Lichfields analysis

3.13   According to the Cushman & Wakefield Basildon Town Centre market report (2021), the office vacancy rate in Basildon town centre pre-Covid stood at around 4.1% of total floorspace, which is below the 10-year average. This indicates limited surplus stock available, and is below the 8% vacancy rate typically assumed in a functioning market, which perhaps reflects the relatively significant degree of office space losses recorded in recent years through PDR.

3.14   Considering the above, together with the NPPF requirement for plans to be positively prepared (Paragraphs 16 and 35), it is considered appropriate to identify some additional office space across the Plan period to balance these windfall office losses. In this context, an additional 5,240 sqm of office floorspace, which is equivalent to the projected loss based on the net loss annual rate over the first third of the Local Plan period, has been added to the net requirements.

London Industrial Land Re-location Requirements

3.15   The 2017 EDNA suggested that *"Basildon's London Industrial land Re-location scenario captures 35% of the total displaced activity in North Thames Gateway, with a split of 70% industrial activity and 30% distribution activity"*. This was then translated[10] to an additional 200,900 sqm or 50 ha of manufacturing space and 71,300 sqm or 18 ha of distribution space.

3.16   However, since the publication of the 2017 EDNA, further engagement with GLA has been undertaken by the Council as part of the emerging Local Plan preparation. On this basis, the Council has agreed its position in a Statement of Common Ground with the GLA (May 2019) [PSD003] to accommodate unmet employment need from Greater London by allocating an additional 14ha of employment land.

3.17   Therefore, an additional 14ha is added to the net requirements across the Local Plan period. This is mainly expected to relate to manufacturing and distribution land requirements.

Grow-on Space

3.18   Considering the findings of the 2016 Grow-on Space Study, a requirement for an additional 1.0 ha of industrial and 3.6 ha of office land is required over a 10-year period. On this basis, the Council proposes within the emerging Local Plan to identify an additional 9.0 ha of employment land to accommodate the identified requirements over the 20-year plan period. This is further translated to 7.0 ha of office and 2.0 ha of industrial land.

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[10] Comparing Table 54 (pg.176) and Table 56 (pg.178) in 2017 EDNA

Gross Employment Requirements

3.19   Table 3.4 and Table 3.5 summarise the additional floorspace and land requirements, respectively, as identified above based on the plot ratio assumptions used in 2017 EDNA (see also paragraph 2.10).

Table 3.4 Additional Floorspace Requirement (sqm)

Type of Space / Use Class	Flexibility Margin	Losses	London Re-location	Grow-on Space	Total Additional Space
Office E(g)(i)/E(g)(ii)	8,600	5,240	-	70,000	83,840
Manufacturing E(g)(iii)/B2	2,560	-	28,000	8,000	38,560
Distribution B8	10,192	-	28,000		38,190
Total	**21,352**	**5,240**	**56,000**	**78,000**	**160,590**

Source: Basildon Council 2021 / Lichfields analysis (rounded figures)

Table 3.5 Additional Land Requirement (ha)

Type of Space / Use Class	Flexibility Margin	Losses	London Re-location	Grow-on Space	Total Additional Land
Office E(g)(i)/E(g)(ii)	0.9	0.5	-	7.0	8.4
Manufacturing E(g)(iii)/B2	0.6	-	7.0	2.0	9.6
Distribution B8	2.5	-	7.0	-	9.5
Total	**4.0**	**1.0**	**14.0**	**9.0**	**28.0**

Source: Basildon Council 2021 / Lichfields analysis

3.20   On this basis, Table 3.6 presents the gross employment floorspace requirements per scenario. These vary from 282,360 sqm under Scenario 1 (EEFM 2019 Baseline) to 463,170 sqm under Scenario 4 (Experian 2021 Growth).

Table 3.6 Gross Employment Floorspace Requirements (sqm)

Type of Space / Use Class	Scenario 1 – EEFM 2019 Baseline	Scenario 2 – Experian 2021 Baseline	Scenario 3 – EEFM 2019 Growth	Scenario 4 – Experian 2021 - Growth
Office E(g)(i)/E(g)(ii)	92,300	158,290	123,630	194,650
Manufacturing E(g)(iii)/B2	102,170	45,350	114,480	50,350
Distribution B8	87,890	218,190	87,880	218,170
Total Employment Requirements	**282,360**	**421,830**	**325,990**	**463,170**

Source: Basildon Council 2021 / Lichfields analysis (rounded figures)

3.21   In terms of land requirements, these vary from 57.5 ha (under Scenario 1) to 97.6 ha (under Scenario 4) as presented in Table 3.7 below.

Table 3.7 Gross Employment Land Requirements (ha)

Type of Space / Use Class	Scenario 1 – EEFM 2019 Baseline	Scenario 2 – Experian 2021 Baseline	Scenario 3 – EEFM 2019 Growth	Scenario 4 – Experian 2021 - Growth
Office E(g)(i)/E(g)(ii)	9.9	21.4	15.4	27.8
Manufacturing E(g)(iii)/B2	25.5	11.3	28.6	12.6
Distribution B8	22.0	54.5	21.9	57.1
Total Employment Requirements	**57.5**	**87.3**	**66.0**	**97.6**

Source: Basildon Council 2021 / Lichfields analysis

Summary

3.22 This section considers potential adjustments to the net employment space needs drawn from the scenarios set out in section 2.0, in order to identify the potential gross planning requirements for employment land in Basildon over the Local Plan period to 2034. These adjustments include typical allowances for such as delays in development sites coming forward, an allowance for replacement of ongoing losses of employment space, plus the London industrial land relocation requirements and the need for grow-on space as informed by the Council's existing evidence.

3.23 These additional requirements are estimated to comprise around 160,590 sqm or 28 ha, which results in gross employment requirements ranging from 282,360 sqm or 57.5 ha to 463,170 sqm or 97.6 ha depending on the scenario.

4.0   Conclusions

4.1   This report has been prepared to consider the latest position in terms of the future growth potential of the Basildon economy, focusing specifically upon the latest job growth forecasts (i.e. labour demand) as an indicator of future needs. In doing so, the report provides updated context for the Council's emerging Local Plan, but is not intended to supersede or replace the earlier evidence upon which the Local Plan is based.

4.2   The updated employment growth scenarios indicate the broad scale and type of growth associated with different approaches to modelling employment space requirements for Basildon across the Local Plan period of 2014 to 2034, drawing on latest available forecasts, but following a consistent methodology and assumptions (where applicable) with the 2017 EDNA which has been used to inform the emerging Local Plan.

4.3   In the context of the NPPF and PPG, the policy approach adopted by the Council should aim to positively plan to support the employment needs of the Borough so that the local economy is not unduly constrained over the plan period, but also recognises the issues around land supply and competing pressures on available development sites and making best use of land.

4.4   The minimum net employment space requirements identified by the study range between **121,760 sqm to 302,580 sqm, equivalent to 29.9 ha to 67.3 ha**, and this represents the minimum requirement that should be accommodated across the Local Plan period to meet the forecast employment growth needs of the Borough's economy.

4.5   In addition, the Council has agreed in consultation with the GLA to accommodate some of the industrial relocation needs requirements of Greater London, together with making specific provision for grow-on space based on the findings of the 2016 study. With these factors, and some other adjustments to provide a flexibility margin and some modest replacement of office space losses, these equate to an additional 160,590 sqm or 28 ha. Taken together, this results in gross employment space requirements over the Plan period of **282,360 sqm to 463,170 sqm, equating to 57.5 ha to 97.6 ha**.

4.6   In this context, the 80 ha employment land requirements and the corresponding proposed supply of 92 ha identified in the emerging Local Plan, are within the range of gross needs implied by the updated scenarios considered through this focused update study.

Appendix 1   Experian 2021 Forecast

Data Guide

UK Regional Planning Service
September 2021

Our main subscription website:
https://www.experian.co.uk/business/business-information/market-intelligence/economic-services/

Data Guide

UK Regional Planning Service
September 2021

Contents

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Executive summary

This document outlines the current variable coverage in the September 2021 version of the UK Regional Planning Service, and the methodology behind the history and forecast.

Appendix A includes a glossary of terms.
Appendix B includes our definitions of the sectors.

Appendix C has the geography definitions.
Appendix D contains the most common Frequently Asked Questions

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1   Variable Coverage

To avoid implying spurious accuracy, we now round all county and local series to the nearest tenth of a unit. This means that people or job counts are now to the nearest 100 people or jobs and money counts are to the nearest £100,000, and rates are now to the nearest 0.1 percentage points. Forecasts for series with very small levels may appear to be volatile when growth rates are considered. We therefore recommend viewing series with small values in levels not growth rates or considering growth rates over longer intervals than annually. Very small levels have been set to zero as they are essentially statistical artefacts.

Figure 1.1: Variable coverage in the RPS
- √ indicates that the variable is available in both the search query tool and the xls files.
- Xls indicates that the variable is available in the xls but not the search query tool.
- UK monthly forecast indicates that the variable is not produced as part of the RPS but can be found in the monthly UK macro forecast on our website.

Variable	UK	Region	County & Local Authority
PRODUCTION			
GDP	UK monthly forecast		
GDP by component of demand	UK monthly forecast		
Gross Value Added	√	√	√
GVA by sectors	√	√	√
LABOUR MARKET			
Employees by sector	√	√	√
Self-employed by sector	√	√	√
Government Trainees by sector	xls	xls	Upon request
Her Majesties Forces Total	xls	xls	Upon request
FTE Employment by sector	√	√	√
Total ILO Employment – Residence based & Workplace based	√	√	√
ILO Unemployment	√	√	√
Unemployment rate	√	√	√
Labour Force	xls	xls	Upon request
Activity Rate	xls	xls	Upon request
Inactivity Rate	xls	xls	Upon request
DEMOGRAPHICS			
Population: Total, Adult (16+)	√	√	√
Age bands: 0-15, State Working age, State retirement 16-64, 65+	√	√	√
Population by single or 5 year age band	Upon request	Upon request	Upon request
HOUSEHOLDS			
Nominal disposable Income	√	√	√
Real disposable income	√	√	√
Nominal income by component	xls	xls	Upon request
Nominal consumer spending	√	√	√
Real consumer spending	√	√	√
Consumer spending by COICOP category	Upon request	Upon request	
Cost of Living Index	√	√	
House price Index	√	√	Upon request
Hours worked	Upon request	Upon request	Upon request

Please note we are no longer publishing Claimant Count for Regional and Local Areas. This is due to the fact that complete data are no longer available due to the shift to Universal Credit.

2 Historical Endpoints

Figure 1.2: Last historic data point

Variable	UK*	Region	County & Local Authority
Gross Value Added	2021q2	2019q4	2019q4
GVA by sectors	2021q2	2019q4	2019q4
Labour market variables	2021q1	2021q1	All 2019q4 except ILO 2020q4
Income	2020q4	2018q4	2018q4
Consumer spending	2020q4	2020q4	2018q4

The historical endpoint represents the last time-period for which we apply our processes to collect, calculate or derive data, details of which can be found in Chapter 3: Methodology. All time-periods that are in the past but follow the historical endpoint are Experian Economics' estimates.

We have not used any regional data published after June 2021 in producing this update of the RPS. It is possible that between this date and the release of the RPS some new history may have been released and/or revised.

Population

The population data provided are the Office for National Statistics (ONS) 2019 mid-year estimates for 1997-2019. For England, Scotland, and Wales, the 2018-based national and sub-national population projections are used. Further information on population changes is available in section 4.

UK forecast

This forecast is consistent with an Experian Economics' August 2021 macroeconomic forecast which includes the first estimate of GDP for 2021Q2. We explore this further in section 4.

Geographic boundaries

As of September 2021, data is published in accordance with Local Authority District Boundaries (April 2020). With the ONS gradually phasing out the publication of data on the pre-2020 local authority boundaries, it has become increasingly less credible for Experian to publish up-to-date historical data on these definitions. The table below shows those local authorities which no longer exist as individual entities (2nd column) and the name of the new local authority that has been created by their merger.

Region	Disbanded local authorities	Merged to form:
South East:	Aylesbury Vale, Chiltern, South Bucks, Wycombe	Buckinghamshire

3   Methodology

3.1   UK Methodology

The approach for the regional planning service takes the UK variables as exogenous, imposed from the monthly UK forecast.
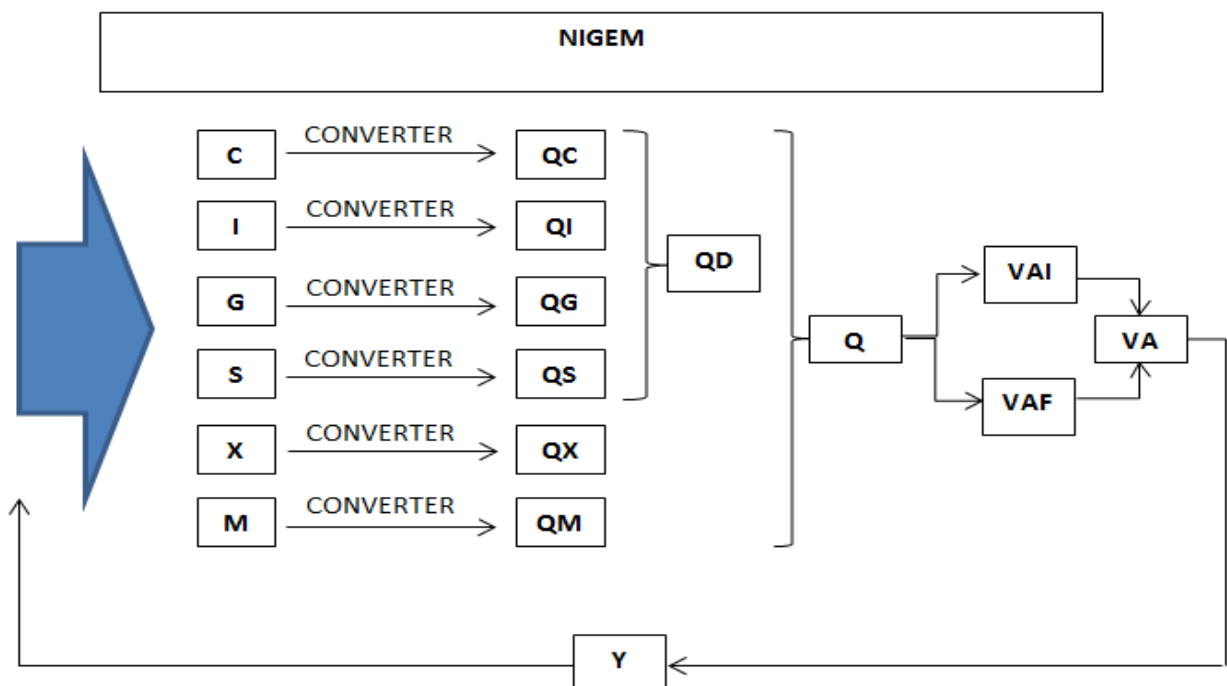
To produce the UK forecast we use a heavily customised version of the National Institute of Social & Economic Research's (NISER) model called NIGEM to provide our core macroeconomic forecast.

NIGEM is a general equilibrium model of the UK and World economy which forecasts, amongst other variables, aggregate GVA, expenditure, income and employment based on the UK National Accounts published by the Office of National Statistics.

To split this core forecast out into industries and sub-sectors we have a Sectoral Model which expands on the forecasts from the core NIGEM model.

We disaggregate total consumption (C), investment (I), government spending (G), stocks (S), exports (X) and imports (M) from NiGEM to a finer level of detail. This provides a highly detailed model of demand (Q) for industry GVA in the UK economy. Using convertors derived from the ONS Supply and Use Tables, we convert demand into intermediate (VAI), and final (VAF) value added for each sector. This provides a comprehensive view of how value added is distributed across sectors. The growth rate of total value added (VA) for each industry determines its GVA (Y) growth rate. GVA is constrained in order to forecast total GVA from NiGEM. This Input-Output based model is iterative and captures intra-industry demand.

The industry GVA forecast is used together with wage forecasts to forecast employment by sector (E).

3.2 Regional methodology

3.2.1 History

All economic history used in the RPS is derived from official statistics published by the UK's Office for National Statistics (ONS). Our approach is to use existing statistics in the form they are published to the greatest extent possible. However, this is subject to the following exceptions:

- where there is a lag between an update of aggregate data and the corresponding disaggregation, the disaggregate data is constrained to match the latest aggregates;
- where ONS data is not published at quarterly frequency (for instance it is only annual data), we use a consistent methodology (described below) to construct quarterly data;
- where ONS data is not published at the geography required or in the detail required, we use a consistent methodology to add the necessary data, ensuring that it constrains to published data at a higher level of geography or detail;
- on occasion, where ONS data is internally inconsistent we apply techniques to remove these inconsistencies.

The most timely and reliable data at the regional level is the workforce jobs series, published on a quarterly frequency by the ONS. There have been revisions to estimates of Workforce Jobs going back several years caused by benchmarking to the latest estimates from the annual Business Register and Employment Survey (BRES), updating seasonal factors and taking on board late information.

Employee jobs, self-employed jobs and government trainees are published at the level of the SIC 2007 Section providing us with 22 sectors.[1] In order to disaggregate this Section-level data to 2-digit sectors from which we can construct the Experian 38 sectors we use official survey data:

- In the case of employee jobs, we use the Annual Business Inquiry (ABI) and Business Register & Employment Survey (BRES). These are annual surveys which are not updated after being published – further the methodology has changed over the lifetime of these surveys. We apply a principled set of rules to derive consistent employee job shares within the sections from the surveys.
- The September 2021 RPS saw the inclusion of the November 2020 BRES, which provides data up to 2019. Pre-2010 we have made a working-owners adjustment, based on an overlapping year published by NOMIS in February 2013, in line with their recommended techniques for dealing with discontinuities.
- In the case of self-employed jobs, we use data from the Labour Force Survey (LFS).

Workforce jobs is the sum of employee jobs, self-employed jobs, government trainees and Her Majesty's Forces (who are assigned at the sector level to Public Administration and Defence).

To estimate full-time equivalent employment (FTE), we use data on hours worked in each sector and region derived from the Annual Survey of Hours and Earnings (ASHE). ASHE is also used to derive wage data for each region and sector.[2] We also use, for this purpose, compensation of employee data from the regional accounts.

Previously, regional gross value-added data (GVA), was only measured on an income basis and published annually in current prices. As of March 2020, we included the ONS balanced estimate of

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[1] The ONS has ceased publishing official 2-digit employee jobs data for the regions. The approach we have taken is consistent with the approach recommended by the ONS to derive 2-digit estimates.
[2] We do not routinely publish sector level wage forecasts; however, it is available on request.

GVA, a new measure derived by balancing the income and production approaches to calculating GVA. The data is published in greater detail than the previous income-based estimates - which were only published at a section level - and so map more directly to Experian's 38 sectors.

The latest regional level GVA data available by the ONS is from May 2021, which has been used for the September 2021 run. This dataset includes data up to 2019 and revisions to the historical values. Same as the previous run in June 2021, data is based on 2018 prices which comes from the official ONS statistics rather than out internal rebasing which we applied in the April 2021 run to ensure consistency with the UK level data. Therefore, as there has been no new releases of reginal GVA data, there will be minimal differences in the history between the September and June 2021 run.

The data is then made quarterly using workforce jobs data, before being aggregated to produce a regional total.

Income is published in the regional accounts on an annual basis with a full breakdown of income sources and deductions. Previously official sources included income from Non-Profit Institutions Serving Households (NPISH) in the household income data due to lack of credible information to split these. But more recently, the ONS has improved their data accuracy by providing income data that is 'households' only, which we have used, thereby excluding NPISH from our income estimates, in the March 2019 vintage.

Income sources are:
- compensation of employees: wages and salaries *plus* employers' social contributions
- self-employment income
- Net Property Income: made up of property income received *less* income paid
- transfers from the State (i.e. benefits and pensions)
- other Transfers

Income deductions are:
- taxes
- social contributions
- transfers to others

The sum of income sources *less* income deductions constitute disposable income. To convert this annual data to quarterly jobs we use (depending on the component) employee jobs, self-employee jobs or the UK quarterly pattern. We constrain these quarterly series to the official UK published data. Real disposable income is obtained by deflating disposable income by the consumer price deflator.

Household spending is derived by sharing out UK nominal expenditure using regional shares of expenditure reported in the Living Costs and Food Survey by type of expenditure. Nominal regional spending is deflated by published UK deflators and then aggregated to produce a regional total. This again implicitly creates a regional cost of living measure which we also publish.

Sub-national population projections are obtained from the ONS, based on the 2018 sub-national projections for England, Scotland and Wales. These are spliced onto the 2019 mid-year estimates and constrained to the latest national 2018-based projections.

Our working-age definition incorporates all announced future changes in the state pension age:

- The state pension age for women is rising from 60 to 65, equal with males. Both will then rise, in step, to 67 in our current forecast period.

- Female state retirement age began to increase from 60 in April 2012, reaching 65 by 2018q4.

- From April 2019, both men and women will see their state retirement age rise from 65 to 66, with men reaching 66 by April 2020, and women a few months later in October 2020.

- The move from 66 to 67 is scheduled from April 2026 until April 2028 for both men and women.
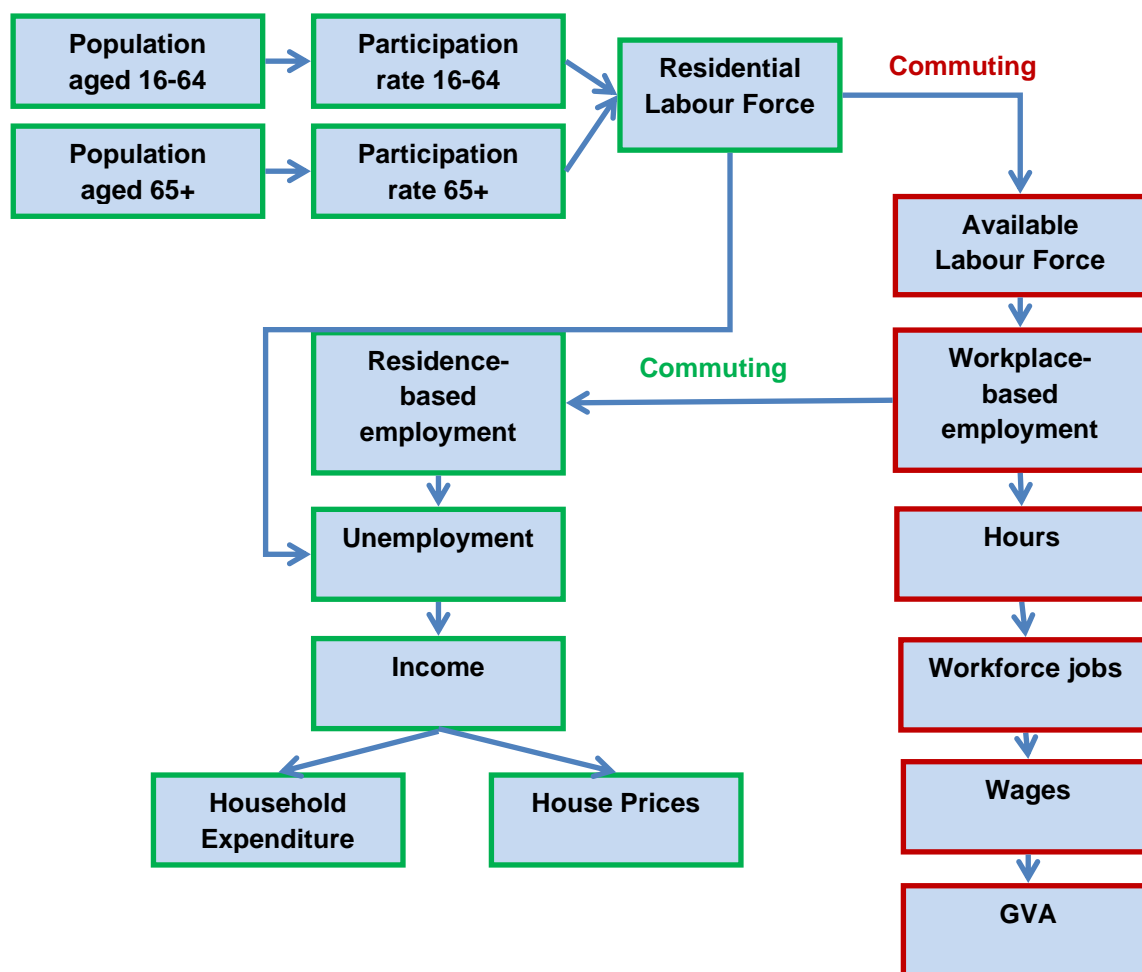
The 2013 Autumn Statement stated that the rise in state pension age to 68 would be moved forward from 2046 to the mid-2030's. However, with no firm date, we have not yet incorporated this into our working age and state retirement age definitions.

Under the current law, the State Pension age is due to increase to 68 between 2044 and 2046. Following a recent review, however, the government announced plans to bring this timetable forward. The State Pension age is now set to increase to 68 between 2037 and 2039. The policy change was announced as of July 2017.

We publish the following breakdown of population: school age (ages 0-15), state working age, state retirement age, adult population (16 and over) and total. Beginning in the March 2015 RPS, we also publish both the population aged 16-64 and 65 and over. Although their respective participation rates are not published, they can be derived. Our overall participation rate is based on a ratio of the total labour force to the entire adult population (not only the working age population).

3.2.2 Forecast

The regional model is sequential. Each variable is dependent only on variables earlier in the sequence and not variables later in the sequence. Variables are either workplace-based (red outlined boxes) or residence-based (green-outlined boxes.) Workplace-based and residence-based variables are linked by commuting relationships derived from the 2011 Census.

The population – split into two age ranges – is taken from the National and Sub-National Population Projections. We forecast participation rates for these age bands separately as they are subject to different trends. The total residential labour force is the sum of the labour force aged 16-64 and 65-plus. The aggregate participation rate is determined by two factors:

- The participation rate of the two age bands; and
- The share of each of the two age bands in the adult population.

The participation rate for those aged 16-64 is expected to remain relatively stable throughout the forecasting period. However, the rate for those aged 65 and over will grow strongly due to factors such as increasing life expectancy and rising state pension ages.

At the UK level, the share of the adult population aged 65 and over is projected to rise sharply over the next twenty years. There is, however, considerable variation at the regional level. Greater London – the youngest region in the UK – is projected to have a stable share. These factors combine to produce substantial variation in the labour force forecasts for different regions.

Commuting flows are used to derive the available labour force for a region. This is:

Workers Resident in the Region – Workers Commuting Out + Workers Commuting In

In the case of Greater London, the South East and the East of England, these flows lead to a substantial difference between the residential labour force and the available labour force. The effect is still present but less pronounced in other regions.

The available labour force is one of the drivers in forecasting workplace-based employment. The other drivers include the industry mix and the performance of industries at the UK level. If industries with a high share in the region are performing well at the UK level, this will benefit the region.

The workplace-based employment is converted back into residence-based employment. This is:

Workplace-based Employment – Workers Living Elsewhere + Residents Working Elsewhere

From this point, residence and workplace-based variables are solved in parallel with residence-based variables dependent on residence-based employment and workplace-based variables dependent on workplace-based employment.

The residential labour force and residence-based employment are used to calculate unemployment. Residential income is driven by employment; and itself drives house price and household expenditure forecasts.

Workplace-based employment drives aggregate hours worked, wages and GVA. These aggregate variables feed into the detailed part of the model, which produces forecasts for each industry:

In each case, we forecast shares of the region within the UK industry. We then share out the UK industry data subject to the constraint of the total that has already been determined and the UK total.

3.3 Local methodology

3.3.1 History

As at the regional level, all local economic history used in the RPS is derived from official statistics published by the ONS. Our approach to using this data is identical to that given above at 3.2.1. However, data at the local level is more likely to be incomplete[1] or inconsistent[2] than is the case at the regional level. For this reason, there is greater call for the application of techniques to construct missing data and to remove inconsistencies than is the case at the regional level.

In all cases, local area data in a particular region is constrained to match the regional total for the same variable. This has two advantages:
- Local data is made consistent with regional data of the same vintage.
- Where local data has been estimated or constructed, the regional data ensure that the estimates together are consistent with more reliable data.

The ONS do not publish a workforce jobs series at the local level. Accordingly, we construct workforce jobs series for each local area using BRES/ABI in the same way that BRES is used at the regional level to disaggregate section estimates. The BRES share for a particular industry of a local area in its parent region is used to disaggregate the regional workforce jobs series for that industry. As BRES is a

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[1] For some local areas, publication of certain data by the ONS is restricted because to do so would effectively disclose individual responses to ONS data-collection surveys (e.g. if there are only one or two firms in a certain industry in a particular locality.)
[2] In some cases, sample sizes in ONS data-collection surveys at the local level are very small. This leads to data of comparatively poor quality and relatively high volatility.

survey, the figures over time for a particular local area industry combination can be volatile[1]. Further, certain years' results may be withheld to prevent disclosure of confidential data. Accordingly, to obtain sensible data it is necessary for us to smooth out this volatility and to interpolate over the gaps.

At the local level, the most timely and comprehensive data are Annual Population Survey (APS) for residence and workplace-based employment and unemployment data[2]. These data are obtained directly from NOMIS and then constrained to the national numbers.

In September 2015, we re-visited the relationship between local workforce jobs and workplace-based employment. The local workforce jobs (which make use of BRES shares) was benchmarked to the ILO workplace-based employment which itself has first been benchmarked to the Census 2011 point with the pattern in years either side preserved.

As with regional gross value added, the availability of data at the local authority level has been improved with the move to a balanced estimate of GVA. Sub-regional measures of GVA were previously only produced in current prices, at a NUTS2 and NUTS3 level. As of March 2020, the balanced estimate of GVA has been incorporated into the RPS which is now provided at a local authority level, in both current and constant prices.

As with the regional level, we have used the GVA data at the local level that was released in May 2021 for the September 2021 run. Noticeable differences from the previous run in June are not to be expected.

The level of industrial detail of the data varies across sub-regional geographical levels. NUTS2 data has the greatest level of industry disaggregation with a full breakdown of SIC sections. With each subsequent geographic level, the degree of disaggregation in the official data decreases. In order to provide local area forecasts at the 38-sector level, the data had to be fully disaggregated at each geographical level.

In the case of NUTS3 current prices, the data is disaggregated using the industry shares in the corresponding NUTS2 and then constrained to that parent region. For local authorities that do not constitute fully a NUTS3, disaggregation takes place using local authority workforce jobs data at the industry level. These estimates are then made quarterly using workforce jobs data and aggregated to produce a nominal local authority total.

In the case of Chain Volume Measure GVA; where data is needed to be further disaggregated, implied deflators of the parent geography - NUTS2 in the case of a NUTS3 and NUTS3 in the case of a local authority - are used to deflate the nominal estimates. Due to excessive volatility in the raw GVA data, it is necessary to smooth the local authority estimates and constrain to the parent region. In some cases, this led to some magnitude of difference from the published ONS figures.

The inclusion of these new official statistics has led to noticeable historical revisions across the 38 sector forecasts, however, as is the case at the regional level, the data now provides a more accurate measure of historical activity in each local authority.

In the case of Income (which is households only[3]), official data is also now produced at a local authority level. This data has been incorporated in the RPS as of March 2020 and, as is the case with regional

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[1] The volatility represents sampling variability rather than actual volatility in the population data.
[2] In line with ONS guidelines, we use the official model-based estimates of local unemployment that are more accurate than survey data which suffers from volatility.
[3] i.e. excludes NPISH as of the March 2019 vintage as ONS now provides more accurate income data by 'households 'only at regional and local level

level data, a full breakdown of income is provided. Prior to this, the lowest level of geography for which the data was available was NUTS3 and this supersedes the need to disaggregate the NUTS3 data to a local level.

No estimates of household spending are provided at the local level. Household spending is, therefore, derived by using the share of local disposable income in regional disposable income.

Since June 2016, we have applied a moving average procedure to smooth the Annual Population Survey data which has resulted in revisions to our historical data.

We have not used any local data published after June 2021 in producing this update of the RPS. It is possible that between this date and the release of the RPS some new history may have been released and/or revised.

3.3.2 Forecast

The local authority model is run separately for the local authorities in each region and takes the regional forecast as given. Accordingly, as with local history, local forecasts are constrained to the regional forecasts of the parent region.

Our local model is based on the resolution of demand and supply for labour and it takes into account commuting between local areas within a region and across the regional boundary. The properties of the model are these:
- When unemployment is low, labour supply growth is the key determinant of growth.
- When unemployment is high, growth in demand for labour is the key determinant of growth.
- As unemployment decreases,
    - Labour supply growth becomes relatively more important
    - Growth in demand for labour becomes relatively less important
- An area's workplace employment growth depends on labour supply not only in the area but also
    - Labour supply growth in other local areas in the region from which it has historically drawn inward commuters.
    - Its historic share of incoming workers across the regional boundary.
- An area's residence based employment growth depends on demand for labour not only in the area but also
    - Growth in demand for labour in other local areas in the region to which it has historically supplied commuters.
    - Its historic share of outgoing workers commuting across the regional boundary.
- Workplace based employment drives GVA growth.
- Residence based employment drives Income and, accordingly, spending growth.

The starting point is an estimate of the growth in the participation rate of those aged 16-64 and 65-plus in a local area. These are used to derive labour force growth.

In parallel, demand for labour is estimated. This is done at the industry level by linking job growth[1] in a local area to growth in the same industry at the regional level and then constraining demand for jobs by industry to demand for jobs for the same industry at the regional level. The effect of this is:
- Demand for jobs at the local level is fastest in those industries which are performing best at the regional level.

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[1] Separately for employee jobs, self-employee jobs, government trainee jobs and Her Majesty's Forces.

- Total demand for jobs at the local level depends on its industrial structure. Those local areas which have a more than proportionate share of the best performing industries will perform best overall.

The supply and demand for labour is then resolved in the following way:

- Total demand[1] for jobs for each local area is converted into demand for workers according to the historic ratio between jobs and workers into that local area.
- The inflow and outflow of workers across the regional boundary is shared out between local areas according to their historic commuting patterns leading to an adjustment in
  - The remaining demand for labour for a local area (*inflow*)
  - The remaining available labour for a local area (*outflow*)
- Workplace demands for workers are converted into residence-based demands according to historic commuting patterns.
  - If unemployment is sufficiently high, these demands are satisfied out of the growth in the labour supply and the pool of available (unemployed) workers.
  - If unemployment is sufficiently low, these demands can only be satisfied out of the growth in the labour supply.
  - If unemployment is above its lower bound but not too high, a proportion of demands are satisfied out of the pool of available workers and the rest are satisfied out of the growth in the labour supply.
  - The model makes short-term adjustments in the labour supply in response to demand conditions to reflect the economic reality that
    - When demand is high, the participation rate rises as potential workers are drawn into the labour force by the relatively buoyant conditions;
    - When demand is low, the participation rate declines as disillusioned workers leave the labour force because of the poor job market conditions;
  - The unemployment rate, accordingly, behaves as expected.
- The satisfied residence supply for labour is converted back into workplace demands and workplace-based employment is calculated for each local area. This is then converted back into jobs and used to produce final workforce jobs estimates for each local area.

The consequence of this is that:
- Local areas with high demand may not see all demand satisfied if there is insufficient labour supply available to meet those needs. Job growth will, accordingly, be slower.
- Local areas with high labour supply may not see higher growth in residence employment if there is insufficient demand for labour to use it up.

GVA growth is then forecast based on growth in workplace-based employment according to equations, which link GVA growth to workplace-based employment. Income is forecast by component based on residence-based employment (in the case of compensation for employees or self-employment), unemployment (in the case of benefits) and population in any other case. Spending depends on income by component.

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[1] i.e. all industries and job types aggregated.

4 Key changes since June 2021 RPS

4.1 UK Economy

The September 2021 RPS forecast is consistent with the Experian August 2021 UK macro forecast, which itself is broadly in line with the June 2021 UK macro forecast. These projections reflect our baseline view. Given the uncertainty surrounding the pandemic and its impact on the economy we also provide a number of scenarios which help illustrate the different channels of impact. For more details on our other scenarios please contact us.

4.1.1 UK outlook

The latest quarterly national accounts (published 30th September 2021) showed that, since the pandemic struck causing the UK economy to suffer a fall of 9.9% in GDP over 2020, the economy has bounced-back modestly in the first half of 2021. Considering the fact the UK went into a third lockdown in January, output fell by a lower-than-expected 1.4% (revised from the first estimate of 1.6%) in 2021Q1 and recovered by a revised 5.5% (first estimate of 4.8%) in 2021Q2. The level of GDP is now 3.3% below pre-pandemic levels in 2019Q4 (revised from the first estimate of 4.4%).

On the labour market side, there has been a consistent trend of improvement, with unemployment rate edging down slightly from 4.7% between April-June to 4.6% between May-July. Job vacancies reached over one million for the first time on record in the three months to August 2021 and the number of people on payroll rose to 29.1 million in August (increase of 241,000 on the month) which is a return to pre-pandemic levels in February 2020. Pay growth also looks strong (but subject to inflationary pressures), although the ONS have warned against reading too much into it, with annual growth in average total pay of 8.3%. Despite the continued improvement in the UK labour market, the end of the furlough scheme in September and potential labour shortages show the recovery is not yet complete. According to the latest Coronavirus Job Retention Scheme (CJRS) statistics, just over 1.5 million people remain on furlough as of the 31st July 2021. Although falling, the value remains high, representing the delay in the easing of full restrictions and therefore, we may see a tempering of momentum and renewed up-tick in the unemployment rate in the third or fourth quarter of this year. Therefore, we will continue to monitor unemployment and redundancy rates closely.

The latest snapshot for the UK economy suggests that output could stage a full return to pre-pandemic levels by the first quarter of next year, which is slightly later than our previous expectation of 2021Q4. The delay is a result of the third lockdown which took place in January 2021 along with rising Covid-19 cases as the Delta variant spread to the UK in mid-June. Nonetheless, we are optimistic in the bounce-back, which we expect to be driven by business investments and consumer spending. The confidence index stood at (a still negative) -8 in August 2021 but surpassing pre-pandemic levels for the second month in a row, a result of the successful vaccine rollout and continued easing of restrictions. Although output growth contracted slightly (-1.4%) in 2021Q1, this preceded to a strong rebound in the second quarter (revised +5.5% from +4.8% which was used in our forecasts) of 2021, and we expect a modest growth in third and fourth quarter (+4.2% and +1.5%, respectively) of the year. However, in the longer term we expect the pandemic to cause a small degree of lasting damage to GDP levels as a portion of jobs in some of the most severely impacted sectors are permanently lost.

4.1.2 UK forecast

Our UK macro view is updated monthly and can be found on our website:

https://analyticsondemand.experian.co.uk/discover/economics/uk-economic-forecasts/

The following UK forecasts are from August 2021, consistent with the regional forecast.

September 2021 RPS forecast (2018 prices). Previous forecast, June 2021 RPS (2018 prices) in brackets.

UK	2018	2019	2020	2021	2021-2027	2028-2040
GDP growth	1.3%	1.4%	-9.8%	7.6%	2.3%	1.8%
	(1.3%)	(1.4%)	(-9.8%)	(7.7%)	(2.3%)	(1.8%)
Workforce Jobs growth	0.5%	1.5%	-1.7%	-0.6%	0.9%	0.5%
	(0.5%)	(1.5%)	(-1.7%)	(-0.9%)	(1%)	(0.5%)
Unemployment rate	4.1%	3.8%	4.6%	4.9%	4.2%	4.0%
	(4.1%)	(3.8%)	(4.5%)	(5.3%)	(4.4%)	(4%)
Real Income growth	2.4%	1.9%	0.1%	2.0%	2.0%	1.9%
	(2.4%)	(1.9%)	(0.1%)	(1.3%)	(2%)	(2%)
Spending Volumes growth	1.4%	1.1%	-10.9%	5.5%	2.7%	1.8%
	(1.4%)	(1.1%)	(-10.9%)	(6.2%)	(2.7%)	(1.8%)
House price growth	3.3%	0.9%	3.2%	8.7%	3.3%	4.0%
	(3.3%)	(0.9%)	(3.2%)	(9.3%)	(3.3%)	(4%)

Looking at the ONS's first quarterly estimates, the pace of the UK economic recovery has been fading since its strong rebound in the second quarter of 2021. GDP grew by 4.8% in 2021 Q2 as restrictions began to ease in April 2021 and followed a decline of 1.6% in 2021 Q1 due to lockdown restrictions enforced in January. Since then, data has showed a slowdown with economic activity expanded by just 0.1% in July 2021. Looking at the major parts of the economy for the month of July, growth was driven by the production sector. Output expanded by 1.2%, within which the oil and gas industry grew by 28% after the reopening of an oil field production site. Meanwhile, services saw no growth, with a boost from outdoor events as restrictions eased offsetting a large fall in retail and law firms. The construction sector contracted by 1.6%, as the industry continued to suffer from supply chain issues and increasing prices. Although only a small component of GDP, it is interesting to note that the air transport sector more than doubled in size through July. However, the sector is still worth less than a quarter of its pre-pandemic valuation, as international travel remains severely compromised by the pandemic.

The largest contributors to the UK economic recovery over the first half of 2021 came from wholesale and retail trade, accommodation and food service activities, and education. More specifically, activity in the consumer facing service sectors, with household expenditure expanding by 7.3% as pent up-demand from lockdown was satisfied. Nonetheless, consumers have appeared to begin behaving cautiously, with Covid-19 cases rising in June due to the new Delta variant. This has waned on consumer spending where output in the consumer facing services fell 0.3% in July 2021, the first decline since January, with retail sales declining by 2.5% not help by a stretch of bad weather. However, we hope that with government's success in containing the spread of the new variant and rapid vaccine rollout, spending will begin to pick-up again.

Official labour market data revealed that there was competition for staff. Job vacancies rose to a record high of 953,000 in the three months to July 2021, and the number of people on payroll rose to near pre-pandemic levels in July, hitting 28.9 million, an increase of 182,000 on the previous month. In addition, the headline unemployment rate fell slightly, from 4.8% between March-May 2021 to 4.7% between April-June 2021. However, the number of people coming off the furlough scheme has slowed markedly since the spring, remaining at 1.5 million as of the end of July 2021. Once the government support for jobs is withdrawn on 30th September 2021, we anticipate a slight rise in the unemployment rate, to a peak of 5.2% in 2021 Q4. While this will weigh on income and consumer spending, we expect that growth strengthened in August as Covid-19 cases eased, and in September output should benefit from a return of some workers to the office, offering a boost to the transport and hospitality sectors. The exuberance of the early stages of the recovery is unlikely to be recaptured however, and given

heightened supply side issues, we do not expect GDP to return to pre-pandemic levels until the first quarter of next year and our forecast is for GDP to grow around 14% over 2021-22.

Risks

Supply chain disruption continues to affect the UK economy. Estimates suggest there is a shortage of 100,000 heavy goods vehicle (HGV) drivers, up from around 60,000 prior to the pandemic. This shortage has been exacerbated by numerous factors such as Covid-19 travel restrictions, Brexit, and a large backlog in HGV driver tests. Staff shortages, where firms claim they are struggling to fill job vacancies, given skill mismatches, workers still on furlough and a reduced number of candidates from the EU, have heavily weighed on the manufacturing sector. However, shortages have not just been limited to staff, as rising costs and material shortages have affected production of goods within the manufacturing, construction, and service sectors. There is early evidence to suggest that the HGV driver shortage is a key factor in contributing to the economic slowdown witnessed over the summer and autumn months of 2021.

4.2   Regional Forecast

In addition to changes in the UK history which our regional data is constrained to, changes in the regional history can be traced back to the latest quarterly data (June 2021 RPS endpoint in brackets):

- Regional Workforce Jobs 2021 Q1 (2020 Q4)
- ILO Data for 2021 Q1 (2020 Q4)
- Business Register and Employment Survey (BRES) 2019 (2019)
- Annual Survey of Hours and Earnings (ASHE) 2020 (2019)

Also note that the historical processing and forecasting has been reviewed from the ground up and certain parts have been streamlined or automated where appropriate, resulting in minor changes to history for some series – e.g. where a different smoothing or seasonal adjustment technique has been applied, or an outdated fix to the data has been removed.

September 2021 RPS forecast. Previous forecast (June 2021 RPS) in brackets.

Regional forecast 2020-41 Average growth	SW	SE	GL	ET	EM	WM	NW	NE	YH	SC	WA	NI
GVA growth	1.6%	1.9%	2.1%	1.8%	1.4%	1.4%	1.5%	1.2%	1.4%	1.3%	1.4%	1.3%
	(1.6%)	(1.9%)	(2.1%)	(1.8%)	(1.4%)	(1.4%)	(1.5%)	(1.2%)	(1.3%)	(1.3%)	(1.3%)	(1.2%)
Workforce Jobs growth	0.6%	0.6%	0.8%	0.6%	0.4%	0.3%	0.2%	0.4%	0.4%	0.2%	0.3%	0.2%
	(0.5%)	(0.6%)	(0.8%)	(0.6%)	(0.5%)	(0.3%)	(0.3%)	(0.3%)	(0.4%)	(0.3%)	(0.4%)	(0.3%)
Unemployment rate	3.4%	3.1%	5.3%	3.4%	4.1%	4.6%	4.5%	5.2%	4.5%	3.8%	3.9%	3.8%
	(3.5%)	(3.2%)	(5.5%)	(3.5%)	(4.2%)	(4.7%)	(4.6%)	(5.4%)	(4.5%)	(3.8%)	(3.9%)	(3.9%)
Real income growth	2.0%	2.3%	2.0%	2.2%	1.7%	1.6%	1.6%	1.4%	1.7%	1.6%	1.6%	1.6%
	(2%)	(2.3%)	(1.9%)	(2.2%)	(1.7%)	(1.6%)	(1.6%)	(1.4%)	(1.7%)	(1.6%)	(1.6%)	(1.6%)
Spending volumes growth	1.5%	1.9%	2.3%	1.7%	1.5%	1.4%	1.5%	1.1%	1.4%	1.3%	1.1%	1.3%
	(1.6%)	(2%)	(2.4%)	(1.7%)	(1.5%)	(1.4%)	(1.5%)	(1.2%)	(1.4%)	(1.3%)	(1.2%)	(1.3%)
House price growth	4.0%	4.3%	4.0%	4.0%	3.9%	3.8%	4.2%	3.6%	3.4%	3.7%	3.9%	3.7%
	(4.1%)	(4.4%)	(4.1%)	(4.1%)	(3.9%)	(3.8%)	(4.1%)	(3.6%)	(3.4%)	(3.9%)	(3.8%)	(3.6%)

4.3   Local Forecast

In addition to revisions at the regional and the UK level to which our local data is constrained, changes to the local history can be traced back to the following new quarterly data (June 2021 RPS endpoint in brackets):

- APS data for 2020 Q4 (2020 Q4)
- Business Register and Employment Survey (BRES) 2019 (2019)
- Annual Survey of Hours and Earnings (ASHE) 2020 (2019)

Same as the June and April 2021 run, there have been local boundary changes consistent with the ONS April 2020 boundary changes. Aylesbury Vale, Chiltern, South Bucks and Wycombe have been combined into Buckinghamshire, reducing the number of local authorities from 371 to 368.

Also note that the historical processing and forecasting has been reviewed from the ground up and certain parts have been streamlined or automated where appropriate, resulting in minor changes to history for some series – e.g. where a different smoothing or seasonal adjustment technique has been applied, or an outdated fix to the data has been removed.

For more information about how the history is constructed refer to section 3.2.1 for regions and section 3.3.1 for local authorities.

4.4   Population

Population forecasts for all locals, regions and nations have been updated to include published mid-year estimates between 2017-19, onto which the latest 2018-based population projections are spliced. The ONS have revised population projections downward in the mid-to-long run for all nations. Compared to 2016, the ONS now expects higher net international migration, women to have fewer children due to a fall in total fertility rates, and life expectancy not to increase as much as previously expected.

- The populations of all regions in England are projected to grow by mid-2029; regions in the north of England are projected to grow at a slower rate than those in the south.
- East Midlands is projected to be the fastest growing region; the North East is projected to have the slowest rate of growth.
- Nearly all local authorities are projected to grow by mid-2029; the populations of 43 local authorities are projected to fall.
- North West Leicestershire is projected to be the fastest growing local authority in England; its population is projected to grow by 15.1% between mid-2019 and mid-2029.
- The number of people in older age groups is projected to grow faster than those in younger age groups in all but one local authority, Coventry. By mid-2029, a total of 122 local authorities are projected to have a population where at least one-quarter of the population is aged 65 and over.
- Over the 10 years to mid-2029, London is the region with the fastest increase in population of those aged 65 and over; however, it remains the region with the lowest old age dependency ratio. The South West is projected to have the highest old age dependency ratio by mid-2029.

5　A note from the ONS on volatility

A change in methodology behind the Office for National Statistics (ONS) employment surveys has produced widespread volatility in the historical data, particularly from 2010.

The following is an explanation directly from the ONS, please see section 3 for more information on how we deal with volatility in the official data:

> "A fundamental redevelopment of Workforce Jobs sources, classifications, methods and systems was recently undertaken and is explained clearly in the article 'Revisions to Workforce Jobs' (Barford 2010). One of the key changes highlighted in this article was the replacement of a matched-pairs estimator with a point-in-time ratio estimator, ONS's standard method. This change was aimed at removing the bias caused by the matched-pairs method. A matched-pairs method tends to underestimate change over time, as it excludes the births and deaths of businesses in the sample. In essence, only those businesses sampled in two consecutive periods are used to produce estimates of change. This bias used to cause large revisions when the short-term employment surveys series were benchmarked retrospectively to Business Register Employment Survey (BRES) estimates. BRES is an annual survey which selects a larger sample and also uses a point-in-time ratio estimator. The point-in-time estimator includes all sampled businesses in each and every period, which reduces the bias over-time. The trade-off is an increase in volatility caused by the inclusion of the rotated part of the sample for small and medium sized businesses. Sample rotation spreads the administrative burden; ensuring businesses are selected for a limited number of periods.
>
> Unfortunately, the volatility of regional estimates at an industry level has been far greater than anyone anticipated and in general has been met unfavourably by users, particularly those that are interested in regional data. There are a number of instances, for example, whereby businesses have been 'rotated in' to a particular region and served to distort the level of jobs for a particular industry, usually for a period of 5 quarters, which is the time a rotated business remains in the sample of the STES."

Regional employment is the most timely and only source of quarterly data at this level of geography and is used to derive the quarterly profile of other variables in our regional models. Therefore, this volatility is reflected in output as well as employment. Please see section 3 for more information on how we deal with volatility in the official data.

Appendix A.... Glossary of terms

Glossary of terms

Gross Domestic Product (GDP) Total work done in an economy in a period measured in one of three ways:
- Output Measure: Output of all goods and services less inputs
- Income Measure: Income earned by all parts of the economy
- Demand Measure: Demand for goods and services comprised of
    - Expenditure by Households, NPISH and Government
    - Investment (Gross Fixed Capital Formation) by business and Government
    - Changes in Inventories and Acquisitions less disposals of valuables
    - Exports less imports

GDP is measured in market prices: this means that the prices used to convert output of goods and services into money include taxes and subsidies by the government. Distributors' margins are credited to the industry producing the goods and services not to the distribution industry.

Gross Value Added (GVA) GVA is identical to GDP except that it is measured in basic prices. These prices do not include taxes and subsidies imposed by the government. Distributors' margins are credited to the distribution industry. GVA for an industry is described by either of the following identities:
- GVA is identical to output of the industry less inputs of the industry
- GVA is identical to the sum of
    - Compensation of Employees in the industry
    - Gross Operating Surplus (i.e. profit) earned by capital in the industry

When looking at GVA for an industry, it is important to realise that it only includes the output of that industry (i.e. the value added by that industry.) For example, retailing GVA only includes the value added by retailers (e.g. customer service etc).

GVA in the RPS is measured by the place where the work is done (workplace based) and not where the worker resides.

Current Price / Chain Volume Measure (CVM) Data where the unit of measurement is money are available either in Current Price (or Nominal) terms or CVM (or Real) terms. The distinction is important because the buying power of money changes over time. For current price data, no adjustment is made for this fact. CVM data adjusts all figures in a time series to be consistent with the buying power of money in a given year (the reference year). Current Price data, thus, measures values while CVM data measures volumes. For example, Current Price GDP is the money value of production in a given period while CVM GDP is the amount of production. For years before the reference year, CVM data is not additive (thus the sum of GVA for all sectors will not equal total GVA.) In all other years, CVM data is additive.

Productivity A measure of efficiency calculated by estimating output per unit of input

Workforce Jobs A count of the total number of jobs in the UK, a region or industry. It is comprised of
- Employee Jobs: The number of jobs where the occupant is an employee.
- Self-employee Jobs: The number of jobs where the occupant is self-employed
- Government-Sponsored Trainees: The number of jobs where the occupant is on a government training scheme.
- Her Majesty's Forces: The number of jobs in the armed forces (part of Public Administration & Defence).

Workforce jobs and all its components count jobs and not people. This means that where a person has two or more jobs they are counted once for each job that they have. This can be contrasted with the ILO employment measures. Another consequence of counting jobs is that Workforce Jobs is based on the place of work not the residence of the worker

Full Time Equivalent Employment: Our definition is based on total hours worked and is as follows:

FTE = (HOURS) divided by (37.8*13)

Here a constant yardstick of full-time employment for all industries, regions and industry-region based on thirteen working weeks in a quarter at 37.8 hours a week. 37.8 hours is the average hours worked by a full-time worker in the UK between 1990 and 2009.

ILO Employment The International Labour Organisation (ILO) provides an international standard method of measuring employment. In the UK this is implemented by means of a survey known as the Labour Force Survey (LFS) or Annual Population Survey (APS). It is a people count based on the main job that a person has. Employment comprises:

- Employees: People whose main job is as an employee.
- Self-employed: People whose main job is as a self-employed person.
- Government-Sponsored Trainees: People whose main job is on a government training scheme.
- Unpaid Family Workers: People whose main job is as an unpaid worker in a business owned by their own family.

There are two measures:

- Residence based, which depends on the place of residence of the worker (irrespective of where they work.)
- Workplace based, which depends on the place of work of the worker (irrespective of where they reside.)

The ILO Employment reported is based on the entire population in work ages 16+.

ILO Unemployment The International Labour Organisation (ILO) definition of unemployment covers people who are: out of work, want a job, have actively sought work in the previous four weeks and are available to start work within the next fortnight; or out of work and have accepted a job that they are waiting to start in the next fortnight.
ILO unemployment is only available on a place of residence basis and is based on the entire unemployed population ages 16+.

Labour Force / Economically Active The sum of ILO Unemployment and ILO Employment. That is all people who are in work or who are looking for a work. A person who is in the labour force is said to be Economically Active.

The Labour Force includes the entire Economically Active population ages 16+.

Economically Inactive A person who is not economically active. The principle categories are retirees, students, children, long-term sick or disabled, homemakers and carers. This does not include school-aged people.

Claimant Count Unemployment Measures the number of people who are claiming Jobseekers' Allowance (JSA). This is always less than ILO Unemployment because not everyone who is ILO unemployed is eligible to claim JSA and not all who are eligible claim. Particular important cases are:

- People whose partners work more than 16 hours a week – they cannot claim JSA but may be ILO unemployed.
- People who are past state retirement age – they cannot claim JSA but may be ILO unemployed.

Extra Region In addition to the 9 English regions and the nations of Scotland, Wales and Northern Ireland, the UK's economic boundary includes the continental shelf and UK government operations abroad (i.e. embassies and HMF abroad). The ONS does not assign income or GVA attributable to these sources to any region or nation. Therefore, the sum of regional Income or GVA does not equal the UK. This also impacts on two industries Extraction & Mining and Public Administration & Defence.

School Age Population Population aged 0-15.

Working Age Population Population above the age of 15 but below the current state retirement age for their gender.

Retirement Age Population The population above state retirement age. The precise retirement date depends on date of birth and, for those born before 6th November 1953, on gender. At present, there is a phased equalisation in progress. After 6th November 2018, both men and women will retire at 65. This will rise to 66 between 6th March 2019 and 6th September 2020 and 67 between 6th April 2026 and 6th March 2027. Our forecasts take account of these changes to retirement legislation.

Adult (16+) Population Number of all people aged 16 and above.

Household Consumer Spending The accounts relate to consumption expenditure by UK resident households, either in the UK or the rest of the world. Spending by non-residents in the UK is excluded from the total

Household consumption includes goods and services received by households as income in kind, in lieu of cash, imputed rent for the provision of owner-occupied housing services and consumption of own production

For national accounting purposes, households are individuals or groups of people sharing living accommodation

Household Disposable Income Household disposable income is the total payment to households (from wages, interest, property income and dividends) less taxes, social security, council payments and interest

Cost of living index Regional consumer spending deflator. Gives an indication of how the value of consumer spending has grown in comparison to the volume.

NUTS (Nomenclature des Unités Territoriales Statistiques – Nomeclature of Territorial Units for Statistics) A European Union standard for classifying the subdivisions of member states. In the case of the UK, the English regions and the three nations are classified as NUTS1. The next level – NUTS2 – typically consists of aggregations of local authorities in the same region. The level below that, NUTS3 consists either of single local authorities or a small aggregation of local authorities in the same NUTS2. In Scotland, some local authorities are divided between NUTS3. NUTS4 and NUTS5 also exist but are not used in the RPS.

Appendix B…Sector definitions

Sector definitions

Experian 38-sector	SIC-2007 division	Falls within Experian 12-sector
Agriculture, Forestry & Fishing	01 Crop and animal production, hunting and related service activities	Agriculture, Forestry & Fishing
	02 Forestry and logging	
	03 Fishing and aquaculture	
Extraction & Mining	06 Extraction of crude petroleum and natural gas	Extraction & Mining
	05 Mining of coal and lignite	
	07 Mining of metal ores	
	08 Other mining and quarrying	
	09 Mining support service activities	
Food, Drink & Tobacco	10 Manufacture of food products	Manufacturing
	11 Manufacture of beverages	
	12 Manufacture of tobacco products	
Textiles & Clothing	13 Manufacture of textiles	
	14 Manufacture of wearing apparel	
	15 Manufacture of leather and related products	
Wood & Paper	16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	
	17 Manufacture of paper and paper products	
Printing and Reproduction of Recorded Media	18 Printing and reproduction of recorded media	
Fuel Refining	19 Manufacture of coke and refined petroleum products	
Chemicals	20 Manufacture of chemicals and chemical products	
Pharmaceuticals	21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	
Rubber, Plastic and Other Non-Metallic Mineral Products	22 Manufacture of rubber and plastic products	
	23 Manufacture of other non-metallic mineral products	
Metal Products	24 Manufacture of basic metals	
	25 Manufacture of fabricated metal products, except machinery and equipment	
Computer & Electronic Products	26 Manufacture of computer, electronic and optical products	

	27 Manufacture of electrical equipment	
Machinery & Equipment	28 Manufacture of machinery and equipment n.e.c.	
Transport Equipment	29 Manufacture of motor vehicles, trailers and semi-trailers	
	30 Manufacture of other transport equipment	
Other Manufacturing	31 Manufacture of furniture	
	32 Other manufacturing	
	33 Repair and installation of machinery and equipment	
Utilities	35 Electricity, gas, steam and air conditioning supply	Utilities
	36 Water collection, treatment and supply	
	37 Sewerage	
	38 Waste collection, treatment and disposal activities; materials recovery	
	39 Remediation activities and other waste management services. This division includes the provision of remediation services, i.e. the cleanup of contaminated buildings and sites, soil, surface or ground water.	
Construction of Buildings	41 Construction of buildings	Construction
Civil Engineering	42 Civil engineering	
Specialised Construction Activities	43 Specialised construction activities	
Wholesale	45 Wholesale and retail trade and repair of motor vehicles and motorcycles	Wholesale & Retail
	46 Wholesale trade, except of motor vehicles and motorcycles	
Retail	47 Retail trade, except of motor vehicles and motorcycles	
Land Transport, Storage & Post	49 Land transport and transport via pipelines	Transport & Storage
	52 Warehousing and support activities for transportation	
	53 Postal and courier activities	
Air & Water Transport	50 Water transport	
	51 Air transport	
Accommodation & Food Services	55 Accommodation	Accommodation, Food Services & Recreation
	56 Food and beverage service activities	
Recreation	90 Creative, arts and entertainment activities	
	91 Libraries, archives, museums and other cultural activities	
	92 Gambling and betting activities	
	93 Sports activities and amusement and	

	recreation activities	
Media Activities	58 Publishing activities	Information & communication
	59 Motion picture, video and television programme production, sound recording and music publishing activities	
	60 Programming and broadcasting activities	
Telecoms	61 Telecommunications	
Computing & Information Services	62 Computer programming, consultancy and related activities	
	63 Information service activities	
Finance	64 Financial service activities, except insurance and pension funding	Finance & Insurance
	66 Activities auxiliary to financial services and insurance activities	
Insurance & Pensions	65 Insurance, reinsurance and pension funding, except compulsory social security	
Real Estate	68 Real estate activities	Professional & Other Private Services
Professional Services	69 Legal and accounting activities	
	70 Activities of head offices; management consultancy activities	
	71 Architectural and engineering activities; technical testing and analysis	
	72 Scientific research and development	
	73 Advertising and market research	
	74 Other professional, scientific and technical activities	
	75 Veterinary activities	
Administrative & Supportive Service Activities	77 Rental and leasing activities	
	78 Employment activities	
	79 Travel agency, tour operator and other reservation service and related activities	
	80 Security and investigation activities	
	81 Services to buildings and landscape activities	
	82 Office administrative, office support and other business support activities	
Other Private Services	94 Activities of membership organisations	
	95 Repair of computers and personal and household goods	
	96 Other personal service activities	
	97 Activities of households as employers of domestic personnel	
	98 Undifferentiated goods- and services-producing activities of private households for	

	own use	
Public Administration & Defence	84 Public administration and defence; compulsory social security	Public Services
	99 Activities of extraterritorial organisations and bodies	
Education	85 Education	
Health	86 Human health activities	
Residential Care & Social Work	87 Residential care activities	
	88 Social work activities without accommodation	

Appendix C…Geography definitions

We forecast at the following geographic breakdowns:

- UK

- Regions (12)

- Counties (64)

- Local authorities…post-2020 boundaries (335+33 London boroughs)

Appendix D…FAQ's

- Why does Experian's history for variable x differ from another source / raw survey data?

There are several possible reasons.

- o The first is a vintage mismatch. The ONS frequently revises its economic data in order to take account of new information or improved methodology. The date at which Experian has taken data for the current RPS is given in the body of this guide. Another source may have used earlier or later data.
- o The second relates to data processing. As explained in the body of this guide, it is sometimes necessary at the regional level and (particularly) at the local level to process or construct data. Our approach to doing this is explained in the body of this guide. We apply consistent methodologies to process the data. Other sources may carry this out in different ways. When compared against the raw source, our data may differ because, for example:
    - It has been constrained to other sources.
    - It has been converted into CVM data or quarterly data.
    - It has been made consistent with other data or a later vintage of data.
- o The third relates to raw survey data. Raw survey data is often volatile and does not take into account information outside the survey. Official statistics and our data are constructed from the raw survey data to take into account volatility, sampling issues and all available data sources.

- Why does Experian's job history differ from the *ABI* or *BRES*?
    - o The ABI/BRES are surveys taken from a particular year; they are not updated.
    - o ABI/BRES is a source for ONS' workforce jobs but it is not the only source.
    - o BRES does not include government supported trainees, HM forces jobs and every self-employed small business. As a result, BRES's employment numbers (mainly consisting of total employees and working owners e.g sole traders) would be lower than the ONS's workforce jobs.
    - o Experian's workforce job history is designed to be consistent with the latest available ONS workforce jobs estimates, which includes a broad range of jobs (i.e. employee jobs, self-employment jobs, government supported trainees and HM forces).
    - o Raw survey is often incomplete and suffers from sampling variability, which does not represent true volatility in the underlying population data. This must be removed to ensure high quality data.

- How often are data updated?
    - o We always use the latest available data at the cut-off date for history.
    - o New GVA data is available from the ONS
        - At the UK Level, three times a quarter.
        - At the Regional and Local level, annually (normally in December.)
    - o New Expenditure data is available from the ONS at the UK level twice a quarter.
    - o New LFS Employment data is available from the ONS once a quarter.
    - o New Workforce Jobs data is available from the ONS once a quarter.
    - o New BRES is published once a year (normally in December.)
    - o New Income data is available from the ONS
        - At the UK level, once a quarter.
        - At the Regional and Local level, once a year (normally in April.)
    - o Population projections are published once every two years.
    - o New mid-year population estimates are published annually.
    - o New LCFS is published annually.

- How do revisions to historical data affect your history and forecasts?
    - o As explained above, we always take into account the latest historical data.
    - o The monthly UK macro forecast is updated after each ONS revision of GDP for a quarter.
    - o The RPS is based on a particular UK macro forecast and includes the latest available regional and local data.

- o Forecasts are updated to be consistent with the latest historical data. While this will typically only affect the short-to-medium term, there are times when the long-run is necessarily affected. This will usually be when there has been a substantial revision to history.

- How are past growth trends captured in the forecasts?
  - o All our models are econometric models.
  - o An econometric model is a model estimated on historical data.
  - o The coefficients (i.e. interactions) in the model embed historical relationships between variables and historical growth rates in a variable.
  - o Where we believe that the forecast relationships may differ from history, we make appropriate adjustments to the forecast. This may be the case, for example, where an area has been substantially redeveloped in recent years.

- How are industry/regional/local developments and policies reflected in forecasts?
  - o If past developments and policies are reflected in model inputs (for example population) or in history then they will be automatically captured by the model.

  - o Our forecasts are policy-neutral in the sense that in our baseline assumes that sufficient projects, infrastructure, jobs etc. will be provided in order to meet the needs of the population in the long term. Thus although the project may not be explicitly included, an assumption that a project of its nature may have been included in the baseline.
  - o It is important to realise that many developments or policies may not be sufficiently large enough to affect growth rates or may be implicitly included in the forecast from a higher level of aggregation.

  - o We are able to make appropriate adjustments to the forecast to take into account certain large projects.
  - o At the industry level we can take into account announced developments in that industry which are large enough to affect the growth in the industry at the national, regional or local level (as the case may be).
  - o At the regional and local, we taken into account announced developments or policies which are large enough to affect growth at the regional or local level. The local model, in particular, has the facility to take into account the impact of additional population or jobs in a particular area.
  - o The final forecast will show the net effect of the adjustment, after the effects of population constraints, job cannibalisation, commuting patterns etc.

- How does population relate to the employment forecasts?
  - o This is discussed in detail in the methodology section above for the regions and the locals.
  - o It is important to remember that employment is forecast on both a residence and workplace basis.
  - o Residence based employment depends on local population (labour supply) growth but also on demand for work throughout the region and across the regional boundary.
  - o Workplace based employment depends on labour supply throughout the region and across the regional boundary.

- What is working age?
  - o The definition of working age used based on the state pension age.
  - o As the state pension age for men and women changes in line with announced policy, the working age population will change to take this into account.
  - o The key changes to the state pension age that have been announced are:
    - ▪ A gradual equality in state pension age for men and women.
    - ▪ A gradual rise in state pension age for both men and women to 67 (and 68 after the forecast horizon.)

- What is the participation rate / economic activity rate?
  - o The participation rate or economic activity rate is the proportion of the population who are either employed or seeking employment (i.e. unemployed.)

- The participation rate used in our models is based on the entire adult population (16+). This differs from earlier versions of our models which used only the working age population.
- The participation rate is an endogenous variable in all our models. It is not a fixed assumption.

- What assumptions have been made regarding commuting in the local model?
  - Commuting in the local model is based on estimates given by the ONS.
  - These are based on the Census 2011.
  - Commuting assumptions are fixed over the forecast.
  - However, the outcome for commuting may differ from the assumption because (for example) there is insufficient demand or supply for labour to provide as many workers across a particular commuting relationship.

- How is Full-Time Equivalent employment derived?
  - This is based on the total hours worked (please see the glossary.)
  - The relationship between FTEs and hours is fixed by definition.
  - In different industries, the hours worked per job will differ.
  - Historical data for this is taken from ASHE (please see the body of the guide.)
  - The forecast takes into account changing trends in hours per job. This will necessarily alter the relationship between Full-Time Equivalent employment and jobs.

- How does the weighting of different factors change over the forecast period?
  - There is no fixed rule about the changes in this time.
  - The coefficients of the econometric equations are fixed over time
  - However, at the local level population growth becomes more important as unemployment decreases.

Appendix E…About us

Our economic forecasting expertise

Experian's team of 18 economists is a leading provider of global, national, regional, and local economic forecasts and analysis to the commercial and public sectors. Our foresight helps organisations predict the future of their markets, identify new business opportunities, quantify risk, and make informed decisions.

Experian's economics team is part of a 140-strong analytics division, which provides an understanding of consumers, markets, and economies in the UK and around the world, past, present, and future. As part of the Experian group, the analytics division has access to a wealth of research data and innovative software solutions. Its statisticians, econometricians, sociologists, geographers, market researchers and economists carry out extensive research into the underlying drivers of social, economic and market change.

For more information, visit www.experian.co.uk/economics

Experian

Experian is a global leader in providing information, analytical and marketing services to organisations and consumers to help manage the risk and reward of commercial and financial decisions.

Combining its unique information tools and deep understanding of individuals, markets and economies, Experian partners with organisations around the world to establish and strengthen customer relationships and provide their businesses with competitive advantage.

For consumers, Experian delivers critical information that enables them to make financial and purchasing decisions with greater control and confidence.

Clients include organisations from financial services, retail and catalogue, telecommunications, utilities, media, insurance, automotive, leisure, e-commerce, manufacturing, property and government sectors.

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