Report

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Milton Keynes Council and Milton Keynes Development Partnership

Employment Land Review and Economic Growth Study Phase 1

Technical Analysis: Final Report

November 2015

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Contents

Appendices

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For and on behalf of GVA Grimley Ltd

Executive Summary

1. This Phase 1 Technical Analysis Interim Report has drawn together the key findings from the baseline stage of work for the Milton Keynes Economic Growth and Employment Land Study.

2. The key conclusions from the work to date are provided below.

Socio-economic Baseline

3. Milton Keynes (MK) is the fastest growing city in the UK with a notably young population, and there is a high economic activity rate and skills levels. However, unemployment rates have increased during the last decade as a result of the economic recession.

4. There is a cluster of sector strength in Financial Services, IT Consulting, Security Related Services, Transport and related supply chain activities and Food and Beverage manufacturing.

5. MK has a containment rate of approximately 60% of jobs for its employed population. The rest of its workforce travels to the neighbouring boroughs of Central Bedfordshire, Bedford, Aylesbury Vale and Central London.

Neighbours Policy Aspirations

6. Milton Keynes works closely with its neighbouring Local Authorities under the 'Duty to Co-operate' banner.

7. The key issues of relevance to Milton Keynes neighbours are the balance between employment/housing land, commuting patterns, economic growth sectors, cross boundary infrastructure provision and demand forecasting.

Property Market Analysis

8. The Milton Keynes commercial property market is dominated by leasehold floorspace. Much of this stock is no longer 'fit for purpose' nor does it meet the needs of the modern occupiers.

9. There is significantly less freehold accommodation currently on the market but where opportunities exist there are more industrial than office properties available freehold.

10. Consequently, in recent years there have been a smaller number of freehold transactions across both property market sectors. The average unit size sold in freehold transactions is greater than in leasehold deals suggesting that there remains owner occupier demand for larger size freehold accommodation.

Employment Land Supply

11. Employment land is land used for offices, factories and warehouses and is categorised as classes B1, B2 and B8 in the planning use classes order. There is a large supply of employment land in Milton Keynes which consists of existing employment sites, proposed sites, and potential sites, all of which have been subject to an assessment of both market features and physical features.

12. The existing employment sites contain a broad mix of B class employment use with the majority of sites providing a mix of office, industrial and warehouse/distribution uses.

13. As there appears to be limited expansion space in existing employment sites, it will be necessary for the proposed and potential sites to be brought forward in order to provide the supply to meet market demand.

Stakeholder Workshops

14. GVA has held two workshops with key stakeholders during this baseline stage with the first focussing on the economic baseline evidence base, and the second focussing on the employment land supply and property market.

15. GVA has also engaged with local agents active in the property market, a range of public and private sector stakeholders and have given all Local Authorities that neighbour Milton Keynes the opportunity to engage with the process.

Forecast Demand Scenarios

16. Given the relationship between the Milton Keynes economy and its neighbours it is important that the evidence base for Plan:MK provides a robust understanding of economic potential that is consistent with the neighbouring areas.

17. In this regard GVA has prepared two 'base' positions utilising both the East of England Forecasting Model EEFM and Experian forecasts. Both suggest that the majority of floorspace will be required within the warehouse and distribution sector.

Phase 2 Delivery Strategy

18. The outcomes of this Phase 1 technical analysis provide a robust evidence base to inform the Phase 2 Delivery Strategy which will provide advice on the Employment Land Strategy for Milton Keynes.

1. Introduction

1.1 Milton Keynes Council (MKC), together with the Milton Keynes Development Partnership (MKDP) appointed GVA to undertake an Economic Growth and Employment Land Study (EGELS) for the Borough of Milton Keynes, one of the fastest growing and most dynamic local authority areas in the UK. The study will form a key part of the Council's evidence base for its new Local Plan, Plan:MK.

1.2 Plan:MK will replace the current MKC Core Strategy adopted in July 2013, which seeks to provide for a minimum of 28,000 dwellings and around 42,000 jobs over the period 2010-2026. It will also replace the saved policies in the Milton Keynes Local Plan adopted in December 2005. The new comprehensive Local Plan will cover the period up to 2031.

1.3 The current Milton Keynes Employment Land Study (prepared by GVA in 2007) is now out of date, as its production predates the economic recession. It now has no regard to the current situation Milton Keynes finds itself in or current economic opportunities and threats. It also does not address the revised national policy position as set out in the National Planning Policy Framework (NPPF) which was published on the 27th March 2012 and sets out the National Government's planning policies for England and how these are expected to be applied. Further, it does not address the National Planning Practice Guidance (NPPG) which was published on the 6th March 2014 and adds detail and clarity to the NPPF. Ultimately, therefore, the current Employment Land Study is not fit to support the development of Plan:MK.

1.4 This new EGELS has two primary purposes. Firstly, it will establish the likely level of jobs growth resulting from the economic growth of Milton Keynes up to 2031. Secondly, it will assess the implications for Milton Keynes Council in planning to accommodate the anticipated level of economic growth.

1.5 More specifically, in order to achieve this purpose, the EGELS will:

- Take stock of the existing situation;
- Create a picture of future requirements;
- Review the supply of employment land;
- Compare the supply and demand; and
- Identify key development options and recommendations.

1.6 Ultimately the new EGELS will identify a justified and reasoned strategy for Plan:MK to follow.

1.7 Both the NPPF and NPPG contain guidance on the preparation of economic land availability assessments. They indicate that the main purpose of these studies is to assess the existing and future supply of land available for economic development and its suitability to meet identified needs. Specifically, the NPPG requires that these studies should identify sites and broad locations with potential for development; assess their development potential; and assess their suitability for development and the likelihood of development coming forward. Taken together, this Phase 1 report and the Phase 2 report which follows are consistent with this approach.

1.8 This interim report has been prepared to provide the client group with an overview of GVA's work on Phase 1: 'Technical Analysis'. It is anticipated that feedback from this report will help inform the work on Phase 2: 'Delivery Strategy' and production of the final EGELS.

Report Structure

1.9 The remainder of this report is structured as follows:

- **Section 2:** Socio-Economic Baseline;
- **Section 3:** Neighbours Policy Aspirations;
- **Section 4**: Property Market Analysis;
- **Section 5**: The Functional Economic Area;
- **Section 6:** Employment Land Supply;
- **Section 7:** Stakeholder Engagement;
- **Section 8:** Forecast Demand Scenarios; and
- **Section 9:** Emerging Quantitative Conclusions

1.10 If you require any further information please contact the Project Director as below:

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2. Socio-Economic Baseline

Introduction

2.1 The Borough of Milton Keynes has a highly urbanised population, with only 16% of its population living outside the city in the surrounding rural areas, which include the towns of Newport Pagnell, Olney and Woburn Sands and smaller settlements such as Hanslope (Core Strategy, 2013). The boundary of Milton Keynes and its relationship to the wider sub region is illustrated in the following Figure 2.1 below.

Figure 2.1: Milton Keynes regional context

2.2 Milton Keynes lies within the South East Midlands Local Enterprise Partnership area. It borders the Local Authorities of Bedford, Central Bedfordshire, Aylesbury Vale, South Northamptonshire and Wellingborough. The principal settlement in the borough is the City of Milton Keynes itself, which accounts for about 33% of its area and circa 85% of its population.

Economic Development Strategy

2.3 Milton Keynes Economic Development Strategy sets out six priorities for the period of 2011 to 2016. The priorities provide Milton Keynes with a framework for a Long Term Economic Vision. These are:

- Create an environment that will foster business and employment growth within a diverse and competitive knowledge based economy.
- Improve access to training and job opportunity for individuals to provide sustainable employment and facilitate economic regeneration.
- Improve overall skills and profile of resident population through education and training provision.
- Encourage business growth through focussed intervention and ensuring appropriate range of commercial space for businesses.
- Promote Milton Keynes as a premier location for inward investment and as a visitor destination.
- Create, maintain and improve the appropriate infrastructure for growth, especially in relation to transport and digital infrastructure.

Population and Labour Market Profile

2.4 To understand the labour market characteristics we have analysed the most recent socio-economic data available from the Annual Population Survey. It provides the economic context which shapes employment land demand and supply factors in the local authority area within the context of wider regional and national economies. For this purpose the South East Midlands Local Enterprise Partnership (SEMLEP)[1] and South East Region[2] have been used as regional comparators; England has been used as a countrywide benchmark.

1 There are 11 boroughs that constitute the SEMLEP region. These are Aylesbury Vale, Bedford, Central Bedfordshire, Cherwell, Corby, Daventry, Kettering, Luton, Milton Keynes, Northampton, and South Northamptonshire.

2 Although the regional plans have been abolished, it is used as a benchmark because of the historic influence of the policies. South East Region includes 67 districts from 9 counties.

Population

2.5 In 2013, the population of Milton Keynes reached 255,692, a sharp increase of over 20% since 2001. This is a significant population rise compared with the average for the South East (9.9%), the average for England (9.6%) and the average for the SMELP (13.3%), as shown in the Table 2.1. According to the Cities Outlook Report 2015 by Centre of Cities, Milton Keynes was the fastest growing city in the UK by population with an annual growth rate of 1.6%.

Table 2.1: Population

Areas	Rate of change 2001-2013 (%)	2001	2013
Milton Keynes	23.5%	207,060	255,692
SEMLEP	13.3%	1,551,135	1,757,041
South East	9.9%	8,000,645	8,792,626
England	9.6%	49,138,831	53,865,817

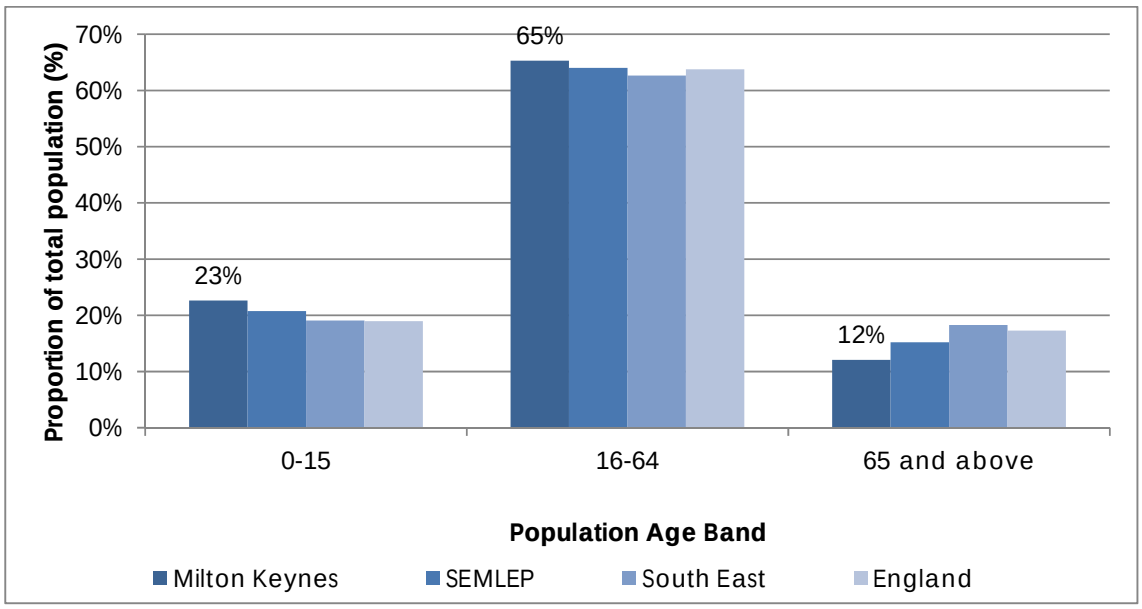
Source: ONS

Working Age Population

2.6 The ONS 2013 figures indicate that Milton Keynes has a relatively strong young demographic with approximately 23% of resident population falling below the age of 16, and a significantly high proportion of workforce (65%) of 'Working Age' (i.e. aged between 16-64). This is highest among all the benchmark areas. Milton Keynes also has the lowest proportion of resident population above the age of 64 compared to the benchmark areas (See Figure 2.2).

2.7 There is also a growing aging population in Milton Keynes. It has had the highest rate of change of population over 64 years between 2001 and 2013 at 45% compared to SEMLEP 32%, South East 23% and England at 19%.

Figure 2.2: Population by age band, 2013



Source: NOMIS, Census 2011

Economic Activity and Unemployment

2.8 Economic Activity is a measure of whether or not a person between the ages of 16-64 was an active participant in the labour market. Table 2.2 below shows the economic activity for Milton Keynes and the wider area.

2.9 The Annual Population Survey (June 2014) estimated there were 123,500 people aged 16-64 in employment in Milton Keynes; of the total employed circa 89% are full-time employees while the rest being part time employees.

2.10 Milton Keynes has a higher rate of economic activity at 79.4% than the national average 77.6% and is more in line with regional averages. Whilst this reflects the success of the Milton Keynes economy it also points towards potential challenges for future employment growth, with limited 'slack' in the economy locally to fill new positions. In the future, this may require further importing of labour from neighbouring areas to meet demand.

2.11 Conversely the borough also has a high unemployment rate at 7.4%, higher than all benchmarks. This suggests that there may be issues of skills mis-matches between the employment offer and the available 'labour pool'. This potential mis-match is reinforced by the high proportion of economically inactive people who state they want a job (26.4%). These labour force patterns suggest that there is the potential for the expansion of the Milton Keynes economy to be of significant benefit to residents of Milton Keynes provided they can access appropriate training to make them 'work ready'.

Table 2.2: Economic Activity (2014)

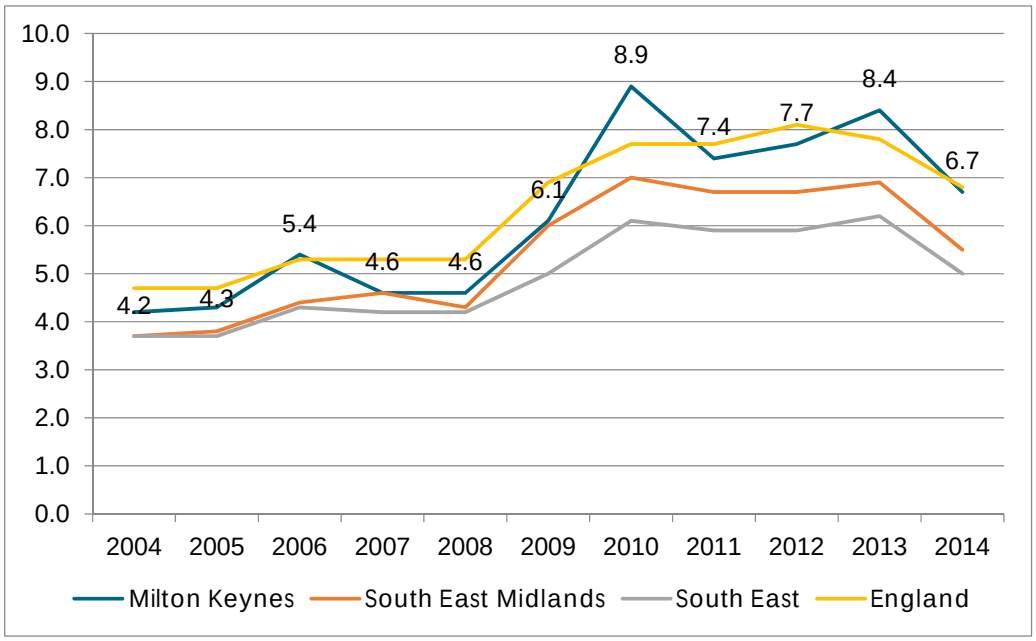
Economic Activity	Milton Keynes	SEMLEP	South East	England
Economic activity rate - aged 16-64 (%)	79.4	80.3	79.9	77.6
In employment (%)	73.6	75.8	75.7	72.2
Unemployed (%)	7.4	5.6	5.2	6.9
Economic Inactivity- aged 16-64 (%%)	20.6	19.7	20.1	22.4
% of economically inactive who want a job	26.4	19.9	26.7	24.8

Source: NOMIS 2013

2.12 The unemployment rate in Milton Keynes was 4.2% in 2004 compared to 3.7% in the South East region and 4.7% in England. The unemployment rate in MK surpassed the UK rate for the first time in June 2010 since 2004 as shown in Figure 2.3. This shows a clear impact of recession on its economy.

2.13 Since 2008 the unemployment rate in Milton Keynes steadily increased reaching a level of 8.9% in 2010. Since then, rates fell down to 7.4% in 2011, rising again to 8.4% in 2013. The unemployment rate in Milton Keynes fell back to 6.7% in 2014. This shows some sign of economic recovery, however, it still remains higher than regional averages and more in line with the national average.

Figure 2.3: Model Based Unemployment Rate



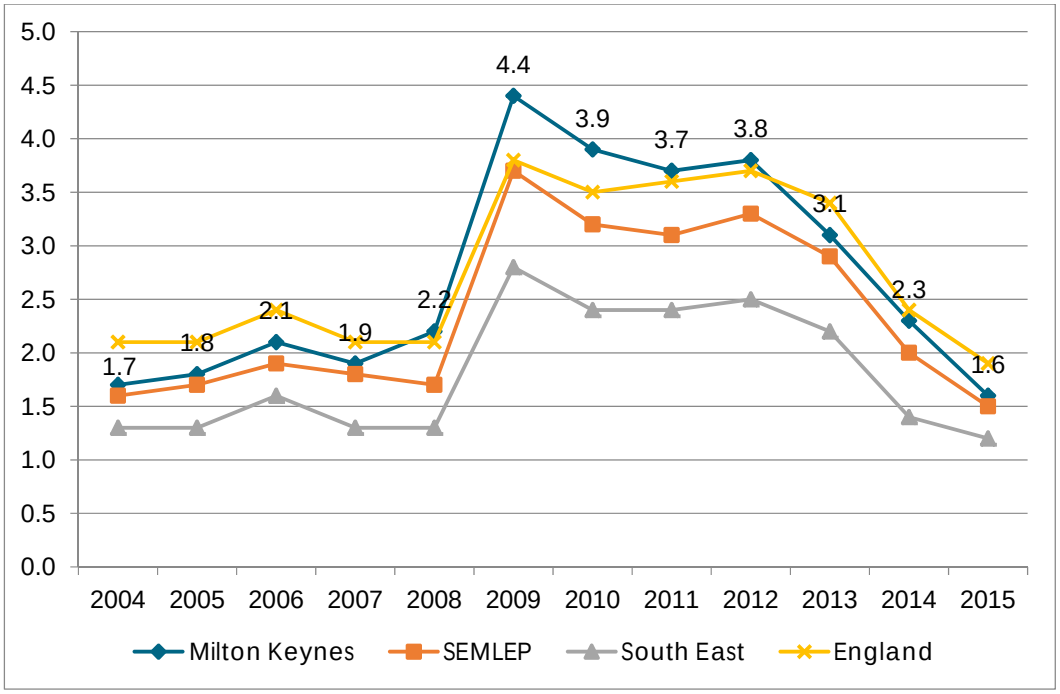
Source: NOMIS

Claimant Counts

2.14 Figure 2.4 shows the percentage of working age resident population claiming out-of-work benefits, providing an alternative indicator for unemployment in Milton Keynes and benchmark areas from February 2004 to 2014.

2.15 Milton Keynes' claimant count trends are towards the higher side when compared to the wider areas. In 2004 it had the second highest claimant count rate of 1.7%, after SEMLEP marginally lower at 1.6%. The recession impacted upon these levels and since then the claimant count rates have been on the higher end for the borough. In 2009 the claimant rate peaked in Milton Keynes at 4.4% which was significantly higher than the benchmark areas. It declined for the first time since the recession in 2014 to 1.6% (pre-recession levels); this is more in line with SEMLEP (1.5%) and below the national average of 1.9%. This is indicative of the post-recession economic recovery in the borough.

Figure 2.4: Claimant Counts



Source: NOMIS

Qualifications Levels

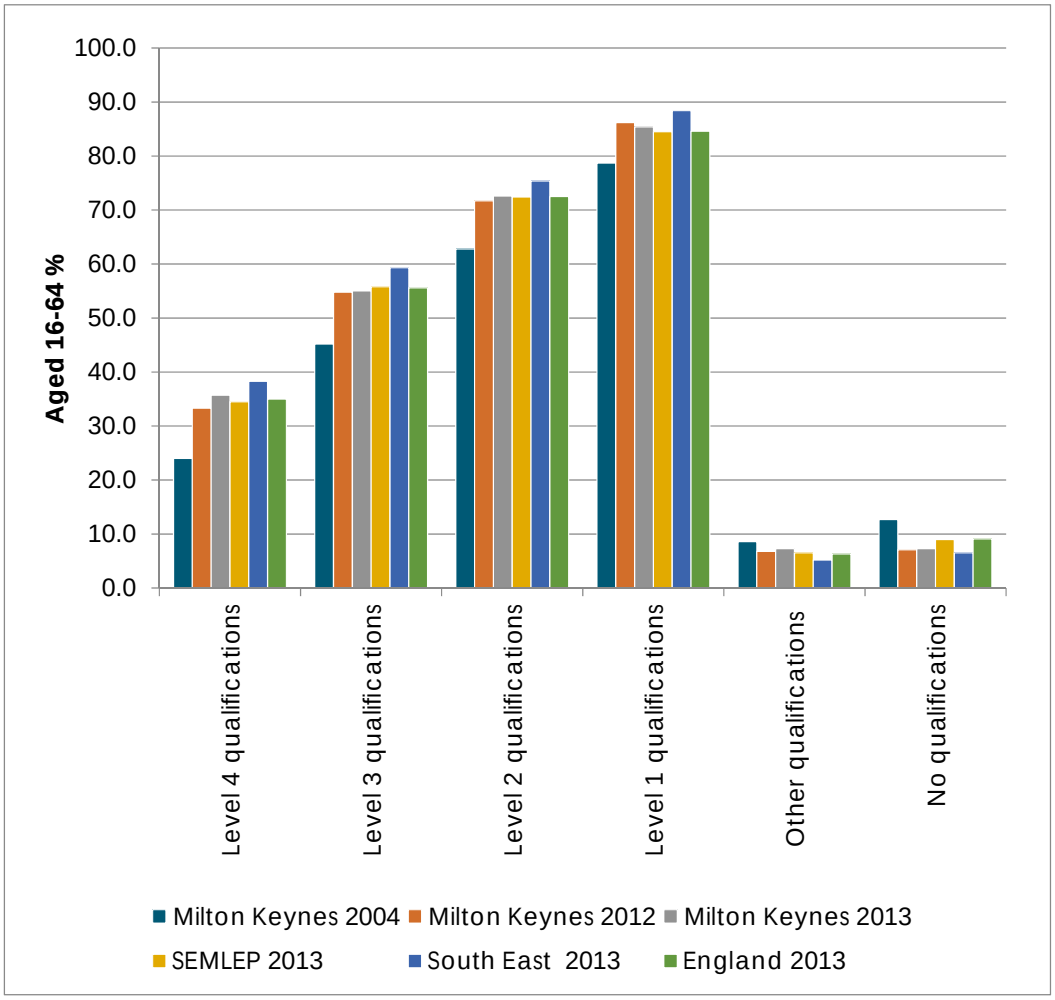
2.16 Skills and learning are central to economic growth and global competitiveness. Figure 2.5 shows the skill profile comparison of Milton Keynes between 2004 and 2013 and also the comparison with qualifications of the benchmark areas in 2013. For detailed definitions of the qualification levels please refer to the footnote 3 below.

2.17 There has been a significant improvement in the qualifications levels of Milton Keynes residents and a notable reduction in the proportion of residents with no qualifications between 2004 and 2013. The proportion of residents in Milton Keynes without any qualifications fell from 12.7% in 2001 to 7.3% in 2013. However, this is still higher than the South East regional average (6.5%) and the national average (6.3%).

2.18 The share of the Milton Keynes population with higher level qualifications increased significantly between 2004 and 2013, with 36% of the population holding a Level 4 Qualification. This suggests an additional 12% of the population had higher level qualifications than in 2004, a percentage increase of some 48% from the 2004 level of 24%.

3 ***No Qualifications****:* No academic or professional qualifications
Level 1 qualifications*:* 1-4 O Levels/CSE/GCSEs (any grades), Entry Level, Foundation Diploma, NVQ level 1, Foundation GNVQ, Basic/Essential Skills
Level 2 qualifications*:* 5+ O Level (Passes)/CSEs (Grade 1)/GCSEs (Grades A*- C), School Certificate, 1 A Level/ 2-3 AS Levels/VCEs, Intermediate/Higher Diploma, Welsh Baccalaureate Intermediate Diploma, NVQ level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma
Level 3 qualifications*:* 2+ A Levels/VCEs, 4+ AS Levels, Higher School Certificate, Progression/Advanced Diploma, Welsh Baccalaureate Advanced Diploma, NVQ Level 3; Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma
Level 4+ qualifications*:* Degree (for example BA, BSc), Higher Degree (for example MA, PhD, PGCE), NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher level, Foundation degree (NI), Professional qualifications (for example teaching, nursing, accountancy)
Other qualifications: Vocational/Work-related Qualifications, Foreign Qualifications (Not stated/ level unknown).

Figure 2.5: Qualification Levels



Source: Annual Population Survey, NOMIS, 2004, 2012 and 2013

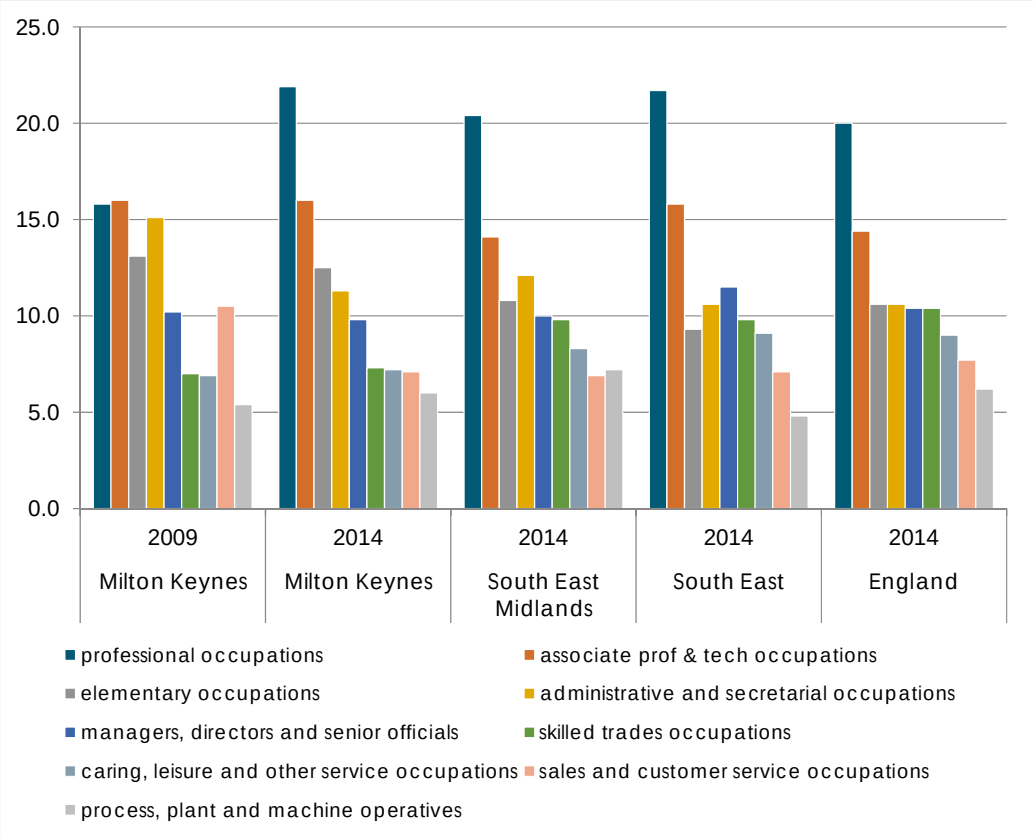
2.19 The analysis shows Milton Keynes's skilled labour base is growing, which reflects the ongoing shift in the local economy towards more knowledge intensive activities. Whilst the data is not yet available to understand if this trend is continuing moving forward it will be important to continue to ensure residents are able to move along the 'skills ladder' ensuring those with no or low qualifications can play a full role in the economy.

Occupational Structure and Wages

2.20 The occupational structure relates to the jobs people undertake and this is always changing. Milton Keynes occupational structure for 2014 (see Figure 2.6) shows the highest growth has happened in professional occupations which has seen a 6.1% since the 2009 recession compared to the benchmarks. There is also a significant proportion engaged in elementary occupations (12.5%), and administrative and secretarial operations (11.3%) in the borough, highest in comparison to the benchmark.

2.21 The professions that have seen the highest decline since 2009 in Milton Keynes are administrative and secretarial occupations (-3.8%) and sales and customer service occupations (-3.4%) with their existing share in the overall occupational structure being 11.3% and 7.1% respectively.

Figure 2.6: Occupational Profile (%)



Source: Annual Population Survey, NOMIS, 2009 and 2014

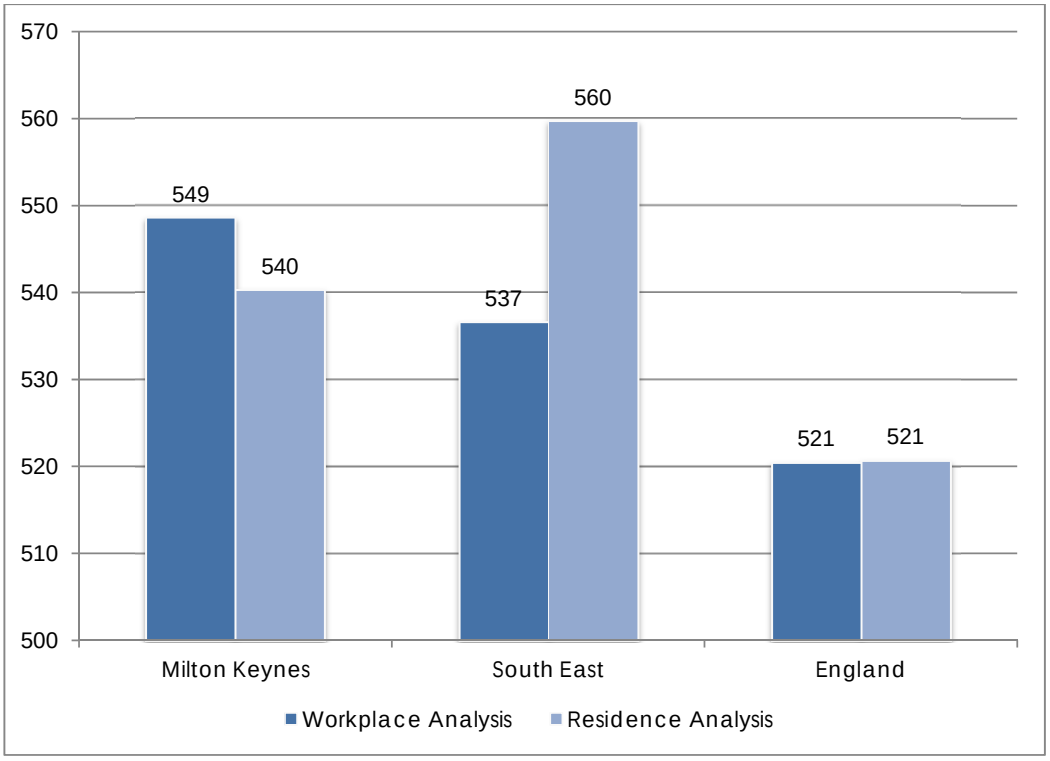
2.22 Milton Keynes retains a relatively high proportion of people engaged in elementary occupations, this is likely to reflect the scale of economic activity within distribution and logistics in particular, which tend to have a range of lower and higher occupations within them. In growing the economy it is important to retain a balance of skills and occupations. Clearly it is beneficial to support people to engage in higher level occupations; however for the economy to function a range of lower level occupations will be needed particularly in some of the potential sectors identified in Section 8.

Earnings

2.23 Figure 2.7 shows the comparison of workplace and resident based earnings in Milton Keynes and benchmark areas. In 2013 Milton Keynes had the highest workplace based earnings at £549 compared to the South East (£537) and England (£521). Conversely, the residence based

earnings were low in Milton Keynes (£540) compared to the South East (£560). This indicates that those who travel to work to Milton Keynes earn on average more than local residents.

Figure 2.7: Earnings (Median Gross Weekly Pay-2013)



Source: Annual Survey of Hours and Earnings, 2013

Broad Sector General Analysis

2.24 Table 2.3 provides a list of industries by broad sectors and the proportion of employment in each of these industries in the year 2013. It shows that Milton Keynes has a strong, diverse economy which means that there is no dependence on one sector for employment.

2.25 Retail was the largest employment sector in Milton Keynes in 2013 with 15,420 people in employment within the industry in 2013.

2.26 Employment in Milton Keynes is dominated by high skill sectors (Business administration & support services, Professional, scientific & technical, Information & communication, Finance and Insurance and Education) reflective of its highly skilled workforce. Compared to the wider region Milton Keynes has proportionately high levels of engagement of workforces in Transport

and Storage4 (7.5%) and IT and Communication (9%) and Wholesale and Motor trade industry (6.1% and 2.9% respectively), indicating its special strength in these sectors.

Table 2.3: Employment by Industry in Milton Keynes (2013)

Industry	Milton Keynes: No. of people employed	Milton Keynes (%)	South East Midlands (%)	South East (%)	England (%)
Retail	15,420	9.8	9.6	10.5	10.0
Professional, scientific & technical	14,479	9.2	7.8	8.2	8.3
Business administration & support services	14,190	9.0	9.4	7.8	8.4
Information & communication	13,992	8.9	4.0	6.1	4.2
Health	13,928	8.9	11.2	12.1	12.8
Education	13,754	8.8	9.5	10.2	9.2
Transport & storage	11,848	7.5	6.5	4.1	4.5
Manufacturing	9,748	6.2	9.6	6.3	8.2
Wholesale	9,639	6.1	5.9	4.7	4.2
Arts, entertainment, recreation & other services	9,049	5.8	4.8	5.3	4.6
Financial & insurance	8,546	5.4	2.9	3.2	3.7
Accommodation & food services	7,508	4.8	5.5	7.4	6.9
Public administration & defence	4,850	3.1	4.1	3.5	4.4
Motor trades	4,563	2.9	2.7	2.0	1.8
Construction	3,600	2.3	4.1	5.0	4.5
Property	1,589	1.0	1.5	1.5	1.9
Mining, quarrying & utilities	362	0.2	0.8	1.1	1.1
Agriculture, forestry & fishing	23	0.0	0.1	1.2	1.3
Column Total	157,088	100.0	100.0	100.0	100.0

Source: NOMIS, BRES/ ABI 2013

Location Quotient Analysis

2.27 Given the detail of the data in the analysis above, it is not possible or relevant to consider the level of employment in isolation; it is more useful to consider the relative position of the sector compared with the benchmark locations. This can be done through the Location Quotients

4 Transport and Storage sector also includes Warehousing and Distribution related activities.

(LQs) analysis, these measure the concentration (or specialism) in a particular area against a comparator.

2.28 LQs provide a simple yet powerful tool to compare places and employment activity. A LQ of 1 shows that employment in a sector is proportionately the same as the benchmark geography (i.e. there is no specialisms), a LQ greater than 1 shows the sector is proportionately more strongly represented in Milton Keynes (i.e. there is a specialisation), and a LQ less than 1 shows a sector is under represented.

2.29 Table 2.4 compares the sectors within Milton Keynes that has comparative strength against wider benchmarks. Green shading highlights a very strong concentration (i.e. a LQ above 3), pink a strong concentration (i.e. a LQ between 2 and 3) and yellow a reasonably strong specialisation (i.e. between 1.5 and 2). It should be noted that this is not an exhaustive list of all sectors present within Milton Keynes, but focuses solely on those that have a LQ of above 1.5 against any of the benchmark areas, therefore demonstrating a particularly strong level of concentration.

2.30 Unsurprisingly, there is a cluster of sector strength in Financial Service activity, IT, Consulting and Security Related Services.

2.31 The analysis also shows a concentration of transport and related supply chain activities as well as some manufacturing sectors such as food and beverages. The LQs also show a specialisation in manufacturing and transport related activities in the borough.

Table 2.4: Location Quotient Analysis (2012)

Sector	To South East Midlands	To South East	To England
11 : Manufacture of beverages	0.78	4.59	1.68
52 : Warehousing and support activities for transportation	1.83	3.47	3.67
64 : Financial service activities, except insurance and pension funding	1.79	3.18	1.96
95 : Repair of computers and personal and household goods	1.42	2.57	3.56
80 : Security and investigation activities	2.46	2.51	2.13
63 : Information service activities	3.19	2.27	3
10 : Manufacture of food products	0.63	1.99	1.01
94 : Activities of membership organisations	2	1.93	2.15
24 : Manufacture of basic metals	0.68	1.85	0.54
70 : Activities of head offices; management consultancy activities	1.62	1.73	2.07
78 : Employment activities	1.04	1.63	1.46
33 : Repair and installation of machinery and equipment	0.85	1.45	1.71
61 : Telecommunications	2.56	1.44	1.8
45 : Wholesale and retail trade and repair of motor vehicles and motorcycles	1.01	1.36	1.56
62 : Computer programming, consultancy and related activities	2.21	1.34	2.28
46 : Wholesale trade, except of motor vehicles and motorcycles	1.04	1.33	1.52
66 : Activities auxiliary to financial services and insurance activities	2.19	1.14	0.93
60 : Programming and broadcasting activities	2.07	1.07	0.34
19 : Manufacture of coke and refined petroleum products	5.36	0.96	1.21

Source: NOMIS, ABI/ BRES 2012

2.32 Unsurprisingly there are a large number of sectors where employment in Milton Keynes is relatively under-represented, these tend to relate to sectors that have specific land, resource or other drivers, for example the land based sectors, other primary industries (such as mining), aviation and low value added manufacturing. In general these are unlikely to have significant implications on the Milton Keynes economy in the future.

2.33 In terms of the knowledge economy, there are some sectors which demonstrate an under-representation; this may suggest that in the future they are unlikely to be a basis for economic development. Most notably Milton Keynes has a weak representation of Scientific Research and Development, Insurance Services and Creative Industries activity when compared to the

benchmark locations. Scientific activities are particularly weak which in part, is likely to reflect the lack of research and science orientated higher education activity within Milton Keynes. Moreover data may not capture the research activity that is occurring given it tends to be linked to wider business activities. For example, significant research is undertaken by Network Rail however as it is not a standalone activity it is likely the whole 'business' is captured under a different SIC Code.

2.34 Whilst the Open University (OU) Campus is based in the city at Walton Hall and University Campus Milton Keynes (UCMK), part of the University of Bedfordshire, is based in the city centre these do not offer a significant research component that tends to support a wider network of research orientated businesses..

Knowledge Economy

2.35 A knowledge based economy is one in which the production, distribution, and use of knowledge is the main driver of growth, wealth creation and employment across all industries (Local Economic Assessment, 2013). An OECD 2005 report identifies 'knowledge-based' or intangible assets such as R&D, design, software, human and organisational capital, brand equity and less by investment in physical assets such as machines, buildings and vehicles

2.36 The Centre for Cities Outlook 2015 noted that there is a strong presence/cluster of knowledge intensive activity in Milton Keynes, contributing to 22% of total employment share in the City and ranking it sixth out of the 64 cities reviewed in the UK. Whilst this performance remains positive it does represent a slight decrease in the relative position since the 2012 Outlook, where Milton Keynes was ranked 5th overall.

2.37 The 2011 Local Economic Assessment also estimated the presence of some 4,701 knowledge based business units representing 45% of the total units in Milton Keynes in 2007. In employment terms 49,200 employees (35.4% of all employees) in Milton Keynes in 2007 were working in knowledge based business unit (LEA, 2013).

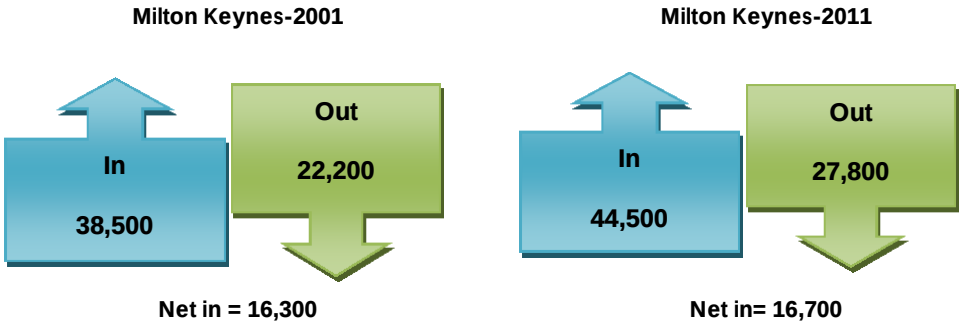
Travel to Work Area

2.38 Travel to work areas can help identify where the bulk of the resident population works. We have analysed the commuting patterns of the residents and workers in Milton Keynes through Office of National Statistics (ONS) data.

2.39 Milton Keynes has more jobs than working residents making it an importer of workers. This results in a net inward commuting trend in the borough. The supply side containment rate of Milton Keynes is 63% (2011, ONS).

2.40 In 2011, Milton Keynes had 16,700 more people commuting-in for work than commuting out, as illustrated in figure 2.8 below.

Figure 2.8: Commuting Patterns in Milton Keynes



Source: NOMIS, ONS, 2011

2.41 The data also helps us to define self-containment rate for Milton Keynes. A self-containment rate highlights the extent to which residents of an area work outside that area and the extent to which jobs within an area are filled by in-commuters. It shows the number of employed residents crossing local authority boundaries in their journeys to work, and so whether local authorities may reasonably be regarded as functional local labour markets.

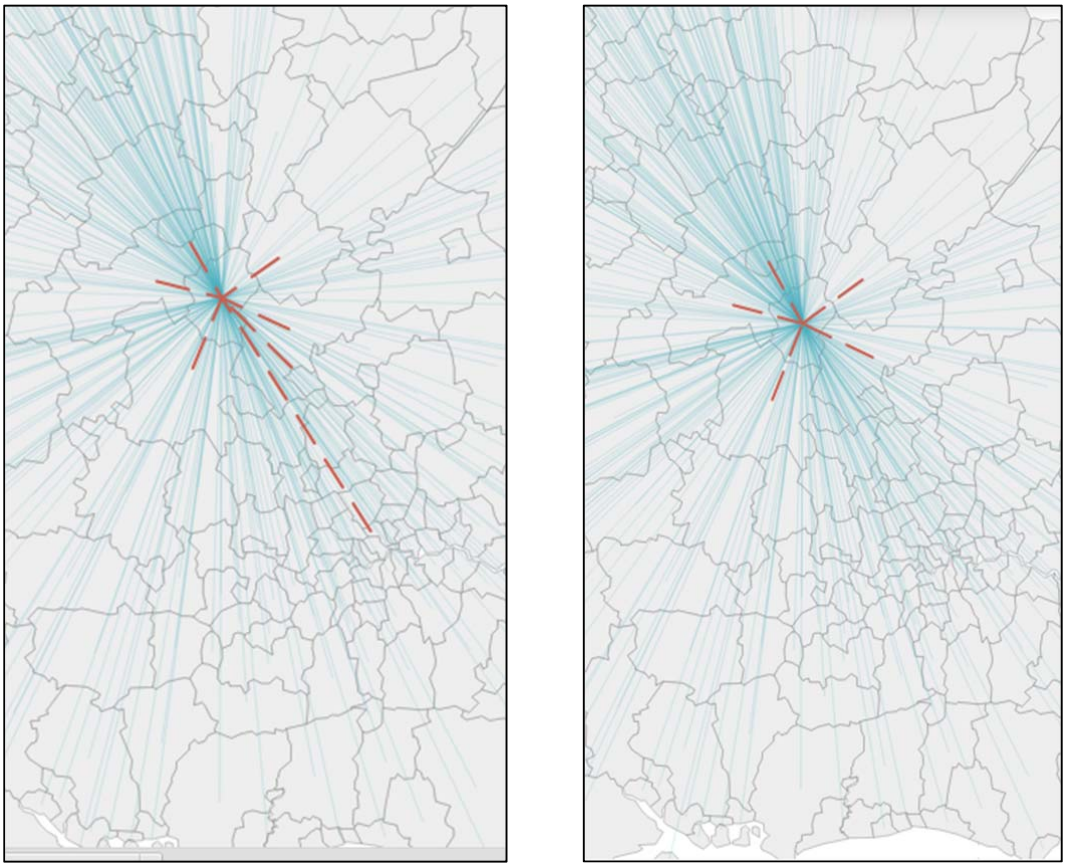
2.42 Self-containment rate is defined in terms of supply-side[5] and demand-side6 rate. Milton Keynes has a supply-side self-containment rate of 64% which shows the proportion of resident workforce retained by the borough. This is a decline from 2001 when the containment rate was 80%. While the demand-side containment rate in the borough is 74% showing that three quarters of the resident labour force take jobs in the borough. This is an increase from 2001 when the containment rate was 69%. An area that is wholly self-contained in terms of commuting would have supply-side and demand-side self-containment values of 100%.

2.43 Figure 2.9 illustrates workforce commuting patterns for Milton Keynes in relation to its neighbouring boroughs.

5 Supply side self-containment is the number of people living and working in an area divided by the number of residents in the area

6 Demand side self-containment is the number of people living and working in an area divided by the number of jobs in the area.

Figure 2.9: Out-commuting (2011) **In-commuting (2011)**



Source: ONS, 2011

2.44 Out of the 44,500[7] people in 2011 that commuted into the borough for work from outside Milton Keynes, 18% were from Central Beds, 13% from South Northants, 11% from Aylesbury Vale and 9% from both Northampton and Bedford (Table 2.5).

2.45 Out commuting increased from 22,200 in 2001 to 27,800 in 2011. Most people in 2011 commuted to Central Beds (15%), Aylesbury Vale (10%), Bedford, London (Westminster) and Northampton at 8% each, followed by Luton and South Northants, both at 5%.

2.46 On this basis Milton Keynes has strong commuting relationships with theneighbouring boroughs of Aylesbury Vale, South Northamptonshire, Northampton Central Bedfordshire, Bedford and also 'Central London' (i.e. the City of London and Westminster). The analysis indicates there may also be some links to the wider region including Birmingham.

[7] This figure represents people who are commuting into the borough for work and does not include people living and working in Milton Keynes.

Table 2.5: Commuting Pattern in Milton Keynes (2011)

Local AuthorityArea	In-Commuting	Out-Commuting	Balance
Milton Keynes	77,957[8]	27,851	50,106
Central Bedfordshire	8,061	4,100	3,961
South Northamptonshire	5,631	1,311	4,320
Aylesbury Vale	4,945	2,708	2,237
Northampton	4,221	2,093	2,128
Bedford	3,909	2,129	1,780
Luton	1,979	1469	510
Westminster & the City of London	54	2,129	-2,075
Wellingborough	1,378	340	1,038
East Northamptonshire	881	164	717
Daventry	759	255	504
Dacorum	577	548	29
Cherwell	526	487	39
Huntingdonshire	510	323	187
St Albans	438	298	140

Source: ONS

Method of Travel to Work

2.47 Table 2.6 shows the range of methods of travel to work by Milton Keynes residents (in employment 2011, age 16-74). Clearly, Milton Keynes has a high rate of dependency on a car based commute to work (74%) which is the highest among all benchmark areas. Milton Keynes has the lowest proportion of people walking to work (6%) compared to the regional and national average (10%). Also, despite its redway cycling infrastructure network Milton Keynes has lower levels of cycling commuters compared to regional and national averages.

[8] This figure shows that 77,957 people lived and work in Milton Keynes in 2011.

Table 2.6: Method of Travel to Work (2011)

Method of travel to work	Milton Keynes	SEMLEP	South East	England
Work mainly at or from home	9%	11%	12%	10%
Underground, metro, light rail or tram	0%	0%	0%	4%
Train	2%	1%	3%	5%
Bus, minibus or coach	5%	4%	5%	7%
Taxi	1%	1%	0%	0%
Motorcycle, scooter or moped	1%	1%	1%	1%
Driving a car or van + Passenger in a car or van	74%	70%	65%	59%
Bicycle	3%	2%	3%	3%
On foot	6%	9%	10%	10%
Other method of travel to work	0%	0%	0%	0%

Source: NOMIS, Census, 2011

Economic Performance and Key Sectors

2.48 The following section examines the general health of the Milton Keynes economy in wider context in terms of Gross Value Added (GVA) and competitiveness index, and examines the key sectors for its economy.

Gross Value Added

2.49 Table 2.7 examines the Gross Value Added[9] (GVA) and GVA per head in England, the South East and Milton Keynes borough from 1999 to 2012. Milton Keynes GVA has grown above the trend at 5.3% when compared with England and the South East England both averaging at 4% and 3.8% respectively. It is likely that the growth figures for all of these areas have subsequently declined as a consequence of the recession starting in 2008. Similarly per capita GVA in Milton Keynes has grown above trend when compared to country and regional average. Table 2.7 shows workplace based GVA at current prices.

2.50 There are a number of factors contributing to this strong performance in Milton Keynes. Importantly the business base within the area has continued to reinforce a range of high productivity sectors, including distribution, finance and insurance and business services.

9 Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom.

Table 2.7: Workplace based GVA at current prices (£ million)

Total GVA									
	1999	2001	2003	2005	2007	2009	2011	2012	Ave annual % growth
England	705,854	774,063	865,857	959,916	1,074,037	1,083,346	1,152,438	1,173,512	4.0%
South East	124,769	136,681	152,520	164,385	181,995	183,325	196,105	202,597	3.8%
Milton Keynes	4,419	4,987	6,024	6,175	7,277	7,397	8,242	8,655	5.3%
GVA per Capita									
	1999	2001	2003	2005	2007	2009	2011	2012	Ave annual % growth
England	14,396	15,654	17,343	18,968	20,903	20,755	21,700	21,937	3.3%
South East	15,684	17,035	18,858	20,040	21,792	21,591	22,664	23,221	3.1%
Milton Keynes	21,381	23,447	27,682	27,633	31,499	30,796	32,982	34,296	3.7%

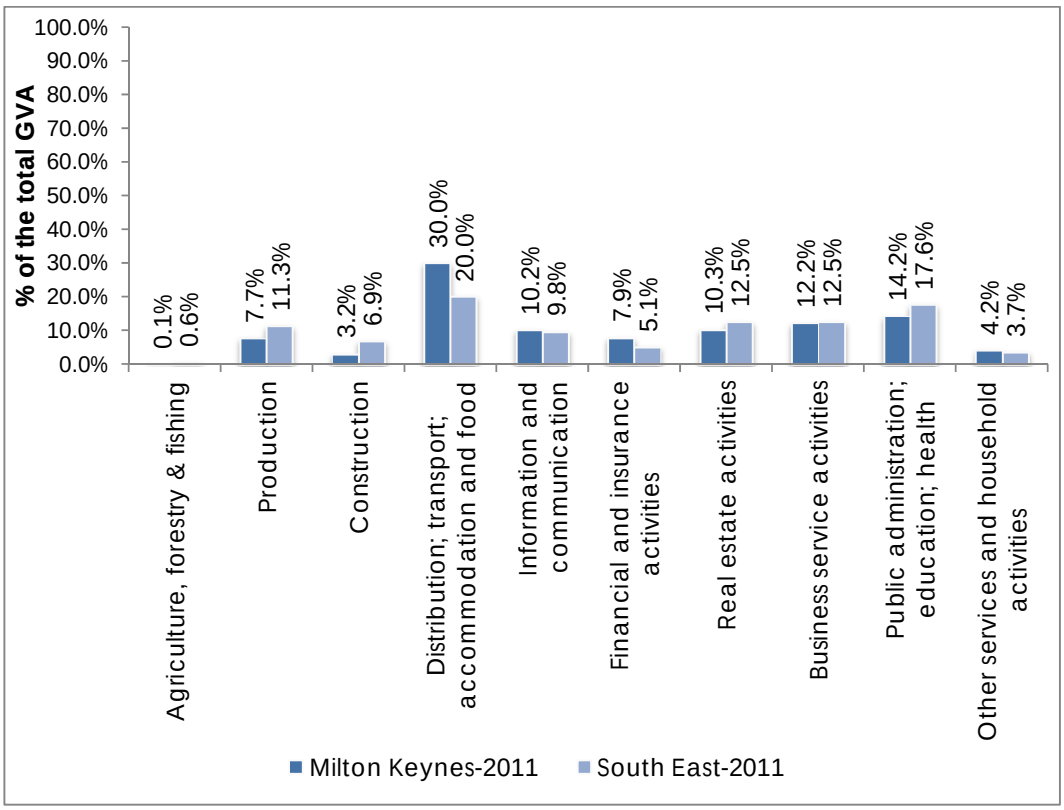
Source: ONS

2.51 Figure 2.10 compares GVA contribution of broad sectors in Milton Keynes and South East region in 2011. It shows Distribution and transport; Public administration, education and health; Business services; IT and Finance; and Real estate activities as key drivers of the economy.

2.52 The trends for the top three largest contributing sectors in Milton Keynes and South East are similar.

2.53 The largest sector contribution in Milton Keynes and in the South East region is distribution; transport; accommodation and food at 30% and 20% respectively. This is followed by Public administration; education and health sector at 14.2% in Milton Keynes and 17.6% in the South East. The third largest sector contribution in Milton Keynes and the South East is Business service activities, at 12.2% and 12.5% respectively.

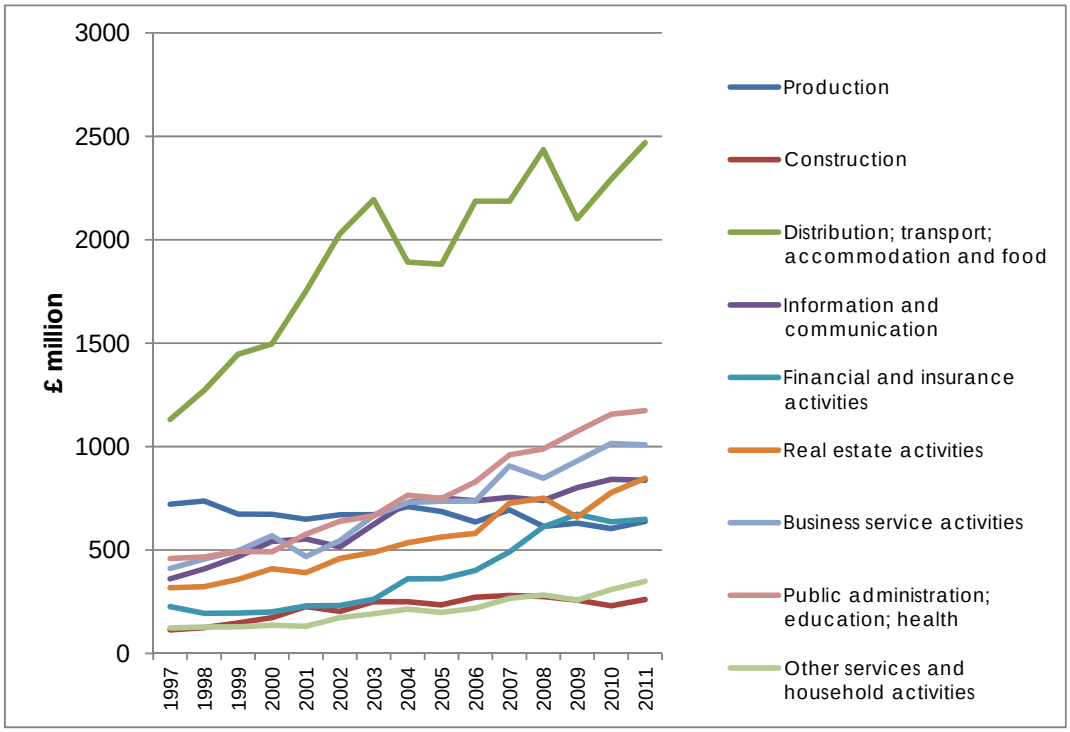
Figure 2.10: GVA contribution by broad sector



Source: ONS

2.54 Figure 2.11 confirms the dominance of distribution; transport; accommodation and food sector. It also shows that the public sector, business, finance and IT sectors have grown significantly in the past decade holding a substantial share of the Milton Keynes economy.

Figure 2.11: Milton Keynes GVA by major sectors



Source: ONS

Competitiveness

2.55 Milton Keynes ranks high on the competitive index (UKCI) prepared by the Centre for International Competitiveness. UKCI benchmarks the competitiveness of the UK's region and localities, designed to be an integrated measure of competitiveness focusing on both the development and sustainability of businesses and the economic welfare of individuals. Milton Keynes was ranked highest among all the 11 local authorities in the South East Midlands LEP and was among the top 15% most competitive localities in the UK out of all the local authorities in the UK ranked by UKCI.

2.56 Previous research by the Centre for Cities in 2012 placed Milton Keynes as "one to watch" in leading economic recovery and again in 2013 the Centre for Cities placed Milton Keynes at the top of the national list of cities which had the potential to drive economic recovery.

2.57 The 2015 Centre for Cities Report reflects the impact on and role of Milton Keynes within the economic recovery and highest growth in housing stock, highlighting that population has grown by over double the national average, it has the second highest rate of business start-ups, the third highest rate of private sector employment growth and is in the national top ten for innovation (as measured by patents registered).

Business Demography

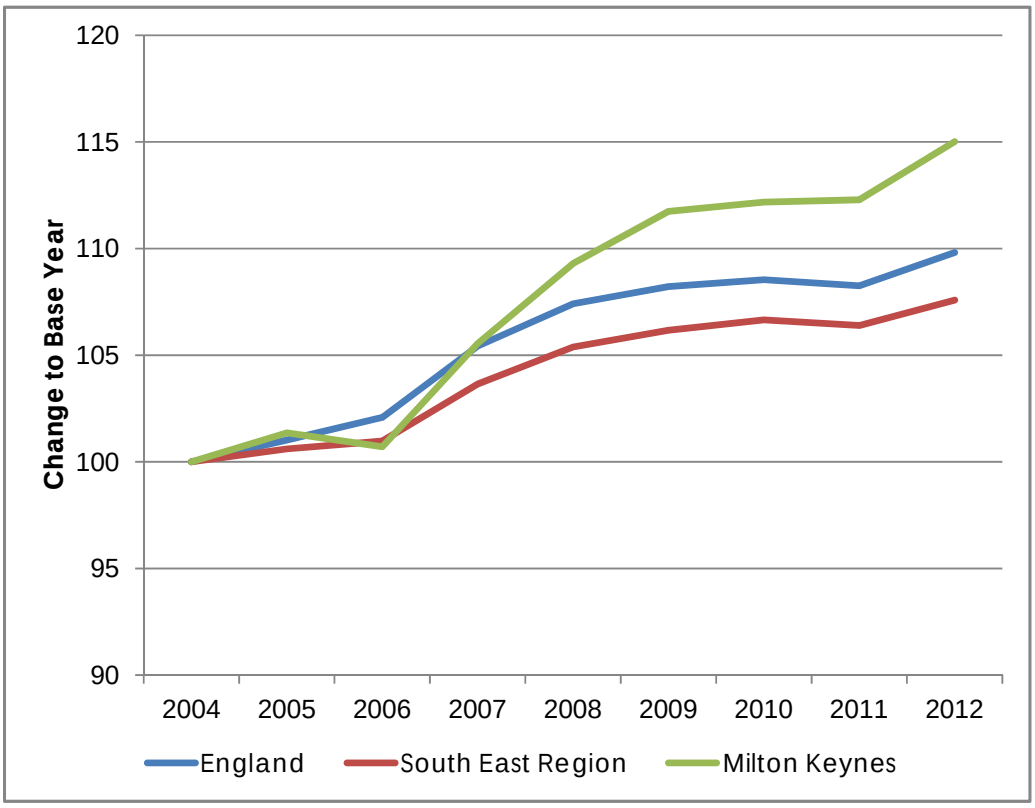
2.58 The following section reviews business stock and sizes, business survival rates and growth rates to provide a context of business demography in Milton Keynes.

Business Stock

2.59 Figure 2.12 shows the change in business stock in Milton Keynes since 2004, highlighting the strong performance of Milton Keynes in comparison to other locations, with significantly higher proportional growth in stock in particular between 2006 and 2009.

2.60 In 2011-2012, Milton Keynes had a sharp increase in the business stock with a total stock of 10,575 business enterprises in 2012 (ONS, 2012), proportionately highest among benchmark areas.

Figure 2.12: Milton Keynes Business Growth (2004-2012)



Source: ONS, Business Demography 2012

Business Size

2.61 The business structure in Milton Keynes is dominated by micro units of between 1 and 10 employees. In 2013 they accounted for 88.5% of all business in the borough which is broadly comparable to the region and country's average. Although marginal, Milton Keynes has a relatively high proportion of medium size (50 to 249 employees) and large (250+ employees) businesses.

Table 2.8: Business Units by Size 2013

Unit Size	Milton Keynes	South East Midlands LEP	South East	England
Micro (0 to 9)	88.5%	89.0%	89.1%	88.3%
Small (10 to 49)	8.8%	8.9%	8.9%	9.6%
Medium-sized (50 to 249)	2.0%	1.7%	1.6%	1.7%
Large (250+)	0.7%	0.4%	0.4%	0.4%
Micro (breakdown)				
Micro A (1-4 employees)	88.0%	87.1%	86.8%	85.9%
Micro B (5-10 employees)	12.0%	12.9%	13.2%	14.1%

Source: ONS UK Business (2013)

Business Units by Industrial Sector

2.62 In Table 2.9 we show the distribution of business units in Milton Keynes by sector between 2009 and 2013. Using 2013 as an example, the professional, scientific and technical sector made up 19.5% of all the business units in Milton Keynes, the largest contributor of business units. The Information and communication sector was the second largest sector in terms of business units at 15.8%; Retail 6.4%, Construction 10.3% and Business administration and support services 7.6%. The highest increase in share since 2009 has been the IT sector and professional Scientific and Technical sector of above 4%, while Retail has seen the highest decline of 3.2% since 2009.

Table 2.9: Percentage of Business units by Sector in Milton Keynes

	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2009-2013 (%)
Professional, scientific & technical	15.4	15.8	15.9	16.7	19.5	4.1
Information & communication	11.1	11.6	12.4	12.8	15.8	4.7
Retail	9.6	9.3	9.6	9.3	6.4	-3.2
Construction	9.7	10	9.3	8.8	10.3	0.6
Business administration & support services	9.4	8.7	8.7	8.3	7.6	-1.8
Arts, entertainment, recreation & other services	7.0	6.6	6.5	6.4	6.3	-0.7
Wholesale	5.2	5.4	5.6	5.6	5.6	0.4
Health	4.8	5.2	5.4	5.3	3.9	-0.9
Accommodation & food services	5.3	5.9	4.7	4.8	3.7	-1.6
Manufacturing	5.2	4.9	4.6	4.6	4.9	-0.3
Transport & storage (inc postal)	3.9	3.7	3.8	3.8	3.4	-0.5
Property	3.7	3.5	3.6	3.4	3.4	-0.3
Motor trades	2.9	2.7	2.8	2.8	2.8	-0.1
Financial & insurance	2.3	2.3	2.4	2.4	2.2	-0.1
Education	2.8	2.8	2.8	2.8	2.1	-0.7
Agriculture, forestry & fishing	1.4	1.3	1.4	1.3	1.6	0.2

Source: NOMIS, 2013

Business Survival Rates

2.63 The change in business stock discussed above in part reflects the survival rates of new business starting in MK, which are shown in Table 2.10.

2.64 The data shows early impacts of the recession significantly reducing the one and two year survival rates of businesses started in 2009 and 2010. Milton Keynes business survival rates tend to be below those of the comparator areas with its five year survival rate being 42.8% below South East (47.3%) and national average (44.4%).

Table 2.10: Business Survival Rates (%)

	Year of Birth	Survival Rate (%)				
		1 year	2 year	3 year	4 year	5 year
England	2007	95.4	81.3	62.9	51.9	44.4
	2008	92.1	73.9	57.9	48.8	..
	2009	90.9	73.9	59.7	..	..
	2010	86.8	72.5	..	..	..
	2011	93.1	..	..	..	..
South East	2007	96.2	83.8	66.2	55.1	47.3
	2008	93.2	76.6	61.4	52.1	..
	2009	91.6	75.7	61.9	..	..
	2010	87.9	74.5	..	..	..
	2011	93.6	..	..	..	..
Milton Keynes	2007	97.4	84.9	63.8	51.7	42.8
	2008	94.2	75.3	57.1	46.5	..
	2009	92.3	74.5	60.4	..	..
	2010	88.8	73.6	..	..	..
	2011	93.0	..	..	..	..

Source: ONS, Business Demography 2012

Summary and SWOT Analysis

2.65 Milton Keynes is the fastest growing city in the UK by population with an annual growth rate of 1.6%.. The principal settlement in the borough is Milton Keynes itself, which accounts for 33% of its area and approximately 85% of its population. It has a strong young population with a high proportion of the under 16 age group (23%), and at least 65% of its population are of working age. This is reflected in its high economic activity rate of 79%, proportionately higher than the national context. Milton Keynes population is also aging as it has seen the highest rate of change in population above 64 years compared to the benchmark areas.

2.66 About 48% of its total population is in employment and it has an extensive labour supply that includes a high proportion of those economically inactive and seeking work. Milton Keynes was significantly impacted during the recession resulting in highest proportion of unemployment and claimant rates compared to regional and national benchmarks. However, since then it has shown notable signs of recovery with unemployment rates lowering to 6.7% and claimant rates bouncing back to pre-recession levels of 1.6% in 2014.

2.67 Milton Keynes has shown a significant improvement in skill levels among its population, with a significant drop in the population with no qualifications between 2004 and 2013. The proportion of residents with a Level 4 qualification also rose sharply between this period by

11.7%. This is reflected in the occupational profile which is proportionately high for high skilled occupations of 48%. A further analysis of employment by sector shows that there is a cluster of sector strength in Financial Service Activity, IT, Consulting, Security related services and a concentration of transport and related supply chain activities, and food and beverage manufacturing showing a specialisation in these sectors in the borough. This is also reflected in the GVA contribution trends which indicate that the distribution;transport; accommodation and food sector (30%); public administration; education and health sector (14.2%); business services activities sector (12.2%); information and communication sector (10.2%); financial and insurance activities sector (7.9%); and real estate activities sector (10.3%) are key drivers of the economy.

2.68 MK has a containment rate of 64% of jobs for its employed population. The rest of its workforce travels to the neighbouring borough with most travelling to Central Bedfordshire, Bedford, Aylesbury Vale, Northampton and Central London. Milton Keynes has relatively strong workplace based earning as average earnings of those who commute in to Milton Keynes are higher than those of resident workers as commuters tend to have higher level skills.

2.69 In terms of economic performance, GVA trends in Milton Keynes are towards the higher end of the spectrum with a workplace based annual average growth rate of 5.3% (higher than regional 3.8% and national 4%). It also has the highest per capita GVA growth rate trend. Milton Keynes was ranked highest among all the 11 local authorities in the South East Midlands LEP and was among the top 15% most competitive localities in the UK out of all the local authorities in the UK ranked by UKCI.

2.70 Milton Keynes has shown significantly stronger business growth trends between 2004 and 2011 compared with the regional and national average in 2011. About 88% of the businesses in the borough are micro units with a maximum of 10 employees. Despite this the city has a high proportion of large business units given the presence of several large enterprises in Milton Keynes. The most popular business sectors are Professional, Scientific and Technical occupations. This is followed by IT & Communication and the Retail sector which are key sectors in terms of business units and employment. However, despite the robust business stock, business survival rates in Milton Keynes is quite poor with only 42% of businesses surviving for a 5 year period compared with the South East (47.3%) and national average (44.4%).

2.71 We conclude by summarising the strengths, opportunities, threats, and weaknesses of the Milton Keynes economy in Table 2.11.

Table 2.11: SWOT of the Milton Keynes Economy

Strengths/ Opportunities	Threats/ Weakness
• Strong Image- Fastest growing city in the UK by population, with strong young demographics. • High proportion of working age population. • High economic activity rate • Lowering unemployment and claimant rates. • Strong set of skills among its population with high qualification levels. • High engagement of population in high skills sectors such as professional, scientific and technical, IT & Communications, and retail. • Economically diverse with a diverse contribution by broad industrial sectors and also in terms of employee engagement. • High representation in knowledge based sectors. • High Entrepreneurial activity. • Very good roads and rail accessibility. • High GVA trends.	• High aging population. • High unemployment and claimant rates. • Decline in containment rate of jobs in Milton Keynes. 7% of loss in a decade (2001-2011). • Low residence based earnings. • High proportion engaged in elementary occupations. • Poor business survival rate. • Competition from other large centres (such as Reading and Swindon) who are planning for significant levels of growth • Major development proposals in the SEMLEP region which are focussed at attracting similar sectors to Milton Keynes • Car dependent City.

3. Neighbours Policy Aspirations

3.1 This section of the report provides details about the planning policy aspirations of the local authorities which surround Milton Keynes. It begins with an overview of the South East Midlands Local Enterprise Partnership (SEMLEP) followed by details of the planning policy and economic development priorities of the Councils which comprise the SEMLEP. We also provide comment on the specific engagement with the neighbouring local authorities with regard to this study.

Context

3.2 Although the focus of this study is on the Borough of Milton Keynes, it is recognised that the influence of the City extends far beyond its administrative boundaries.

3.3 The Localism Act requires that local planning authorities should co-operate on "strategic matters", and the NPPF also acknowledges that public bodies have a Duty to Co-operate on planning issues that cross administrative boundaries and particularly those which relate to the strategic priorities for the area.

3.4 As explored in detail later in this report Milton Keynes has a strong inter-relationship with the SEMLEP area, particularly in terms of travel to work patterns, suggesting that in functional terms it is important to understand what is happening now, and what may happen in the future to these local authorities, due to their close economic relationships.

South East Midlands Local Enterprise Partnership

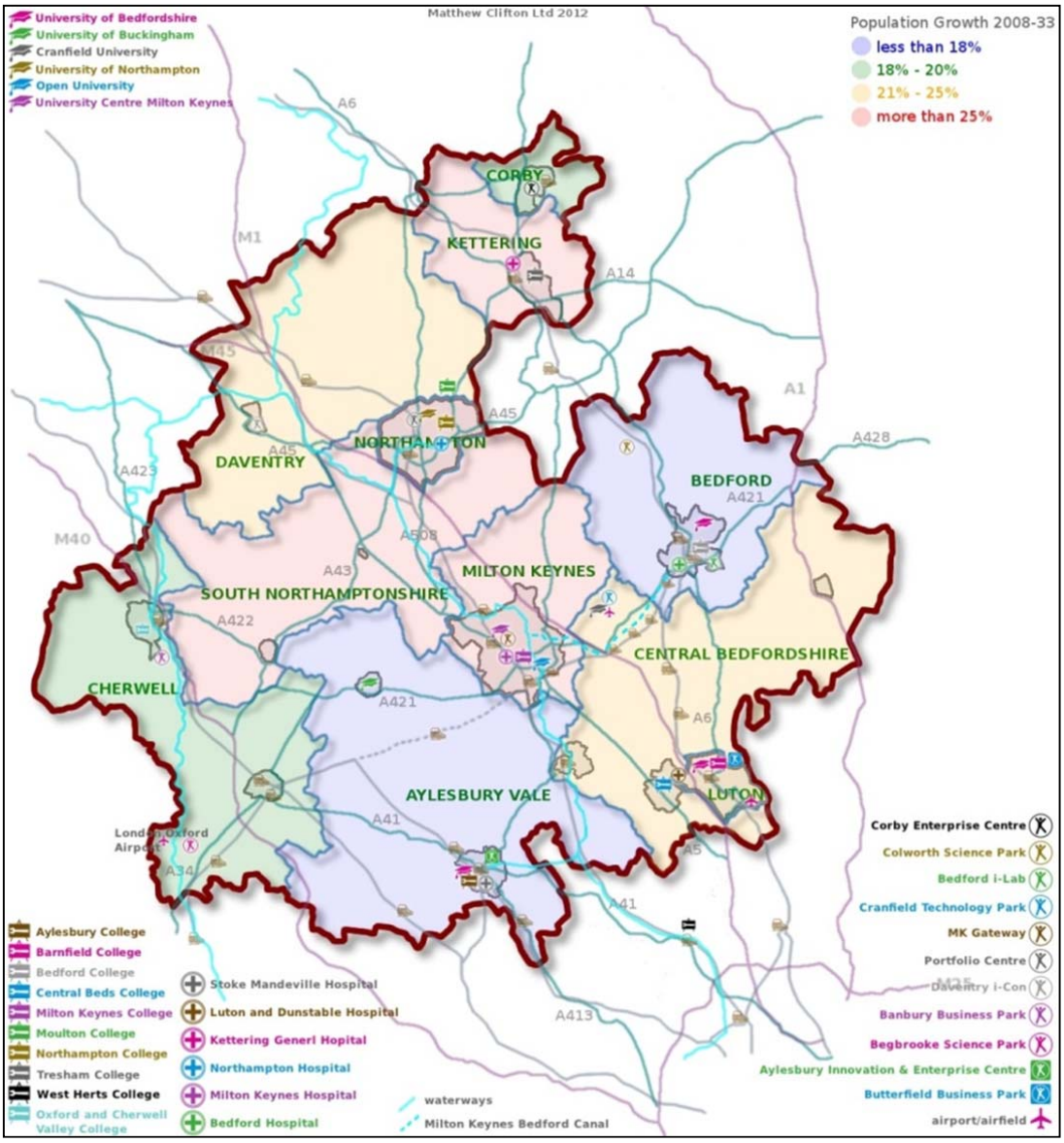
3.5 Milton Keynes Council (MKC) forms part of the South East Midlands Local Enterprise Partnership (SEMLEP). The SEMLEP is a multi-authority grouping that covers the following ten Local Authority areas (in addition to MKC);

- Aylesbury Vale District Council;
- Bedford Borough Council;
- Central Bedfordshire Council;
- Cherwell District Council;
- Corby Borough Council;
- Daventry District Council;
- Kettering Borough Council;
- Luton Borough Council;

- Northampton Borough Council; and
- South Northamptonshire Council.

3.6 The extent of the SEMLEP is shown in Figure 3.1 below.

Figure 3.1 - SEMLEP Area Map



Source: http://www.semlep.com/area-map/

3.7 The SEMLEP Strategic Economic Plan contains the following visions:

- To reinforce and develop the South East Midlands as one of the most innovative, successful and high performing economies in England by 2020;
- To deliver 86,700 new homes and 111,200 new jobs accommodating an increase in population of 151,400. As a result, by 2020 gross value added is estimated to increase by £10.8bn above the current level; and
- To stimulate economic development by demonstrating clear leadership and collaborative approach to enable substantive private sector-led growth and capture major inward investment.

Neighbouring Planning Policy and Economic Development Priorities

3.8 This section provides an overview of the planning policy and economic development priorities of the SEMLEP authorities in closest proximity to Milton Keynes, as well as Wellingborough Borough Council which is not a part of the SEMLEP but borders Milton Keynes to the north.

Aylesbury Vale District Council

3.9 The Aylesbury Vale District Local Plan (AVDLP) currently provides the planning policy context for the local authority.

3.10 This Development Plan Document is due to be replaced by the Vale of Aylesbury Local Plan (VALP), as the plan period (to 2011) has expired. The VALP will include the overall strategy for the district, alongside site allocations and development management policies. The options consultation for this emerging plan is scheduled for October to November 2015.

3.11 Contained within the current AVDLP is a mission statement, which is "to develop and promote the local economy and establish Aylesbury Vale as a vibrant economic centre".

3.12 The plan illustrates that the town of Aylesbury is the focus for employment in the district. It notes that Milton Keynes has a significant influence on the travel to work patterns in Aylesbury with approximately 20% of the local authorities' residents out-commuting to work in Milton Keynes.

3.13 The plan indicates that efforts to attract modern industries are required to provide the population employment opportunities in the future.

Bedford Borough Council

3.14 The Core Strategy and Rural Issues Plan (2008) currently provides the planning policy for Bedford (together with the 2013 Allocations and Designations Local Plan, the 2008 Town Centre Area Action Plan and 'saved' policies from the 2002 Local Plan).

3.15 The focus of the Core Strategy for the borough is to become "*a regional centre for business, arts, creative* industries *and culture*". The expansion of the local economy and transport network infrastructure improvements are also key points of focus, which will assist with employment development. The following objectives prove particularly relevant to employment land in Bedford;

- Deliver the planned growth in Bedford to achieve a step change in the Borough's role in the region;
- Foster significant employment growth; and
- Facilitate the regeneration of Bedford town centre to enable it to fulfil a greater role within the region.

3.16 The Plan identifies that the distance that residents of the borough travel to work varies considerably. Those living in the rural wards mostly travel between 0 and 20km to work, whilst those living in the urban wards travel less than 5km to work.

3.17 The Plan also indicates that the majority of the borough's residents both live and work in the borough. Consequently there is a low level of commuting both into and out of the borough. People who commute into the borough account for 26% of the workers in the borough, and 29% of the working age residents commute out of the borough. Yet of those people who commute outside of the borough to work, one of the most popular destinations are Milton Keynes, alongside Mid Bedfordshire and London.

3.18 Bedford Borough Council is preparing a new Local Plan that will set out how much growth there should be in the borough in coming years (housing, jobs and associated infrastructure) and where it should take place, up to 2032.

3.19 As at June 2015, the Council are committed to progressing the new Local Plan as soon as possible. Once there can be greater certainty over delivery, the Local Development Scheme will be amended to include a revised timetable for the plan's production.

Central Bedfordshire Council

3.20 Planning policies are contained within the Core Strategy and Development Management Policies Document for the north area of the district (2009), the South Bedfordshire Local Plan (2004), and the Mid Bedfordshire Local Plan (2005).

3.21 The 2009 Plan notes that the Mid Bedfordshire economy has key strengths, including a high proportion of the population being economically active, high earnings, low unemployment, a mix of sectors, and an increasing number of jobs and businesses.

3.22 However, the Plan indicates that there are also some relative weaknesses in the local economy which may well be challenged further if high growth continues in the surrounding areas. Particular weaknesses are identified as low levels of economic self-containment, with high levels of out-commuting.

3.23 The Plan draws upon the 2001 census data which shows that less than half of the working residents work within the district. The principal work destinations are Hertfordshire (17.2%), Bedford (8.9%), London (6.6%), Luton (6.2%) and Milton Keynes (5.0%). Conversely, around 33% of the workforce employed in Mid Bedfordshire commutes in from outside the Borough.

3.24 The Council are preparing a new Development Strategy to cover the period to 2031. At a court hearing on 16 June the Judge declined to grant permission for the Council's application for Judicial Review of the Inspector's decision that the plan has failed to comply with the Duty to Co-operate. Thus, the progression of this is currently unknown.

Cherwell District Council

3.25 The planning policy for Cherwell District Council currently exists as 'saved' policies from the 1996 Local Plan. However, as this predates the 2001 census, the information contained within the strategic policies is no longer current.

3.26 The proposed new Cherwell Local Plan (2011-2031) was submitted for Examination on 31 January 2014. Although this is not yet adopted, it provides a better context for the economic and employment context of the district, and the implications of this for Milton Keynes.

3.27 The plan acknowledges that the district suffers from a significant imbalance between homes and jobs. Out-commuting is a particular problem in Bicester. In 2001, Bicester South and Bicester North wards jointly had the second highest percentage of workers in Oxfordshire travelling 60km or over to work (8.8% each).

3.28 The Plan therefore indicates that although Banbury has the largest supply of employment land in the district and a range of available employment sites, that Bicester will be the focus for new employment land to respond to and reduce out-commuting.

3.29 In June 2015 the Inspector's Report on the Examination into the new Cherwell Local Plan 2011-2031 was made available. The Cherwell Local Plan 2011-2031 Part 1 was formally adopted by Cherwell District Council on 20 July 2015. The Plan provides the strategic planning policy framework and sets out strategic site allocations for the District to 2031.

Northampton Borough Council

3.30 The Development Plan for Northampton Borough Council consists of the West Northamptonshire Joint Core Strategy (adopted December 2014), the Central Area Action Plan (adopted January 2013) and 'saved' policies from the Northampton Local Plan (adopted in 1997). It will also include the Northampton Related Development Area Allocations and Development Management Policies Local Plan (to be commenced during 2015).

3.31 The Joint Core Strategy provides a spatial portrait and explains that there are significant commuter flows from Northamptonshire into Milton Keynes.

South Northamptonshire Council

3.32 The Development Plan for South Northamptonshire Council consists of the West Northamptonshire Joint Core Strategy (adopted December 2014) and 'saved' policies from the South Northamptonshire Local Plan (adopted in 1997). It will also include the Northampton Related Development Area Allocations and Development Management Policies Local Plan (led by Northampton Borough Council, as above), and the South Northamptonshire Settlement and Development Management Policies Local Plan (due to be adopted in 2017).

3.33 The Joint Core Strategy provides a spatial portrait and explains that there are strong connections between South Northamptonshire and Northampton, reflected in significant travel to work movements.

3.34 It explains that South Northamptonshire is a largely rural district with a low job density, and struggles with the level of out commuting. It therefore needs to address the level of out commuting by providing employment opportunities which meet the professional profile of its resident workforce.

Wellingborough Borough Council

3.35 The North Northamptonshire Joint Core Strategy (JCS) currently provides the planning policy for Wellingborough (as well as the Town Centre Area Action Plan (adopted 2009) and 'saved' policies from the Borough of Wellingborough Local Plan (adopted 1999).

3.36 The spatial portrait of North Northamptonshire contained within this document indicates that the area falls in the northern tip of the Milton Keynes South Midlands (MKSM) Growth Area.

3.37 The JCS identifies that the population of North Northamptonshire is expected to grow to 270,000 by 2021. It also notes that there are presently some significant deficiencies in the area, such as the lack of a University and few knowledge based businesses. This is causing North Northamptonshire to lose wealth and skilled people who move away to work, or commute to London, Milton Keynes, or other centres.

3.38 However, in 2001 these movements were limited to around 9,000 out-commuters, but it is likely that the numbers will increase if North Northamptonshire delivers housing growth without new complementary jobs.

3.39 The JCS also demonstrates the impact of the strong job growth in North Northamptonshire. The economy generating these jobs is relatively self-contained in terms of commuting, as 76% of residents of North Northamptonshire who work do so in North Northamptonshire. Wellingborough imports workers primarily from East Northamptonshire and exports them to Northampton. Therefore, there is a strong employment relationship between Wellingborough and Northampton, but a perceived weak employment relationship between Wellingborough and Milton Keynes.

3.40 The council is in the process of preparing the Plan for the Borough of Wellingborough, which will include locally specific policies that will guide the future of the Borough. It is scheduled for adoption in 2017.

Engagement with Neighbouring Local Authorities

3.41 The client group contacted the neighbouring local authorities with regards to the nature and scope of the EGELS and this was followed up by GVA in October 2014. All local authorities were given details of the project brief, the scope of the work, and the nature of the cross boundary issues which GVA required input on. The neighbouring local authorities were given the opportunity to contact GVA on any issues they felt should be addressed in the EGELS.

3.42 From the limited responses received, the local authorities are content with the scope of the study as set out in the brief, and satisfied that the proposed EGELS will meet Duty to Co-operate issues as far as employment land is concerned.

3.43 We note that in general terms some authorities feel that it would be useful for the EGELS to provide more information about existing commuting patterns and the characteristics of commuters and their jobs. This could also be supported by trend and policy scenarios of how this is expected to change in the future. They also feel that more attention could be paid to the infrastructure investment synergies across boundaries, as well attempting to minimise competition in key sectors.

3.44 Section 2 sets out our analysis of available travel to work data and highlights the close relationship between Milton Keynes and the neighbouring areas. This Stage of the work also begins to consider the scale and nature of future growth in Section 8. Phase 2 of this work will look in more detail at the implications of this forecast growth on labour supply, comparing population and employment forecasts to understand whether an increased need for labour from other locations will arise.

3.45 It has been commented that the relationship of the EGELS to the housing evidence base is unclear especially as the NPPF and NPPG now require the integration of the housing and employment needs and availability assessments. Consequently, neighbouring authorities wish to know how the SHMA and EGELS fit together as well as details of how these studies will be used to inform the next stages of the Local Plan preparation.

3.46 Phase 2 of the work will consider the alignment of jobs and population growth as set out within this study and the SHMA, this will consider whether the ratio of jobs and population will change in the future and the potential implications of this. The new Plan:MK will then seek to reconcile the population and employment evidence bases to set a sustainable growth strategy moving forward.

3.47 Some authorities have questioned the proposed forecasting methodologies of the EGELS. They suggest that it may be more successful if authorities within the Functional Economic Market Area (FEMA) adopt a standard approach in order to gain a common understanding of the cross boundary implications of future demand and supply for jobs and employment space within FEMAs. Further, they suggest that the FEMAs relationship to the HMA(s) will be difficult to assess on a consistent basis if different methodologies are used.

3.48 Each local authority within SEMLEP is at a different point in its plan making process and therefore have evidence bases that are also at different stages of development, some are still work in progress whilst others have been completed. As such the SEMLEP authorities have not, to date, developed an agreed employment or economic forecast for the area which can be

used as the basis for this study, and a number of forecast bases have been used. To best address this issue we have used (in Section 8) both the EEFM and Experian employment growth forecasts to understand potential forms of growth.

3.49 Importantly, as noted in Section 5 the functional economic area for Milton Keynes extends beyond the SEMLEP boundaries. It would not be possible nor practical to seek to develop a forecast across this large area within the scope of this study. However, the approach taken aligns with NPPF and NPPG recommendations and assumptions have been clearly set out; again these clearly align with available guidance. As such, whilst the forecasting model may differ, the outputs and considerations will be consistent with those in other areas.

3.50 Authorities have also commented that one aspect of the Duty to Co-operate is to assist neighbouring local authorities with any unmet objectively assessed needs for housing. In doing so, Milton Keynes would have to consider this in the context of meeting its own needs as well. Therefore the Milton Keynes plan-making process should consider this, and the consequent limitations for engaging with neighbours.

3.51 At present MKC have not identified any need or desire to seek to accommodate its objectively assessed employment need in any location outside of its administrative boundary. It is the purpose of this study to identify future needs and also assess the capacity for this to be accommodated within Milton Keynes, Phase 2 will make recommendations for the future delivery strategy for jobs and employment land, the Council will then set the most appropriate policy approach to achieve this, balancing the need to accommodate new employment against its other needs and priorities.

3.52 In summary, the feedback received is largely positive and comments have been incorporated (where relevant and possible) into the approach for the Study. All authorities have indicated that they would be pleased to receive copies of the report and to provide further input as required as the Study develops.

4. Property Market Analysis

4.1 This section of the report provides a property market analysis of the Milton Keynes Borough. The 'employment' market comprises both industrial (Use Classes B8, B2 and B1(c)) and office (Use Classes B1 (a) and B1 (b)) accommodation.

4.2 Specifically, this section of the report looks at:

- Employment sites and premises within Milton Keynes;
- The characteristics of the properties that are currently available;
- The characteristics of the deals that took place over a five year timeframe, and;
- General investment market and occupier conditions.

4.3 This section begins by providing an overview of the general economic market, and is subsequently followed by an overview of the Milton Keynes borough and detailed employment market analysis.

General Economic Market

4.4 The most recent GVA research (GVA Economic and Property Market Review May 2015) confirms that economic growth slowed to 0.3% in Quarter 1 of 2015, half the rate seen in Quarter 4 2014, and the slowest pace of expansion for more than two years. Growth in the manufacturing sector slowed for the fourth quarter in succession, registering an increase of just 0.1% in Quarter 1. The production sector saw a modest drop in output, with the fall in the oil price having an adverse impact on North Sea production.

4.5 Despite the slowdown in Quarter 1, the economy is now 2.4% larger than in Quarter 1 2014 and the UK remains one of the fastest growing developed economies. Further, survey evidence continues to paint a positive picture, and we expect the growth rate to pick up again in the coming quarters (the Quarter 1 figure may also be revised upwards a little). There was a marked fall in construction output in Quarter 1 at -1.6%.

4.6 Although this was an improvement from the very poor performance of -2.2% in Quarter 4, it is still surprisingly weak and growth will doubtless rebound later in 2015. In the service sector, growth slowed to 0.5%, compared with 0.9% in Quarter 4 2014. Worryingly, the business services and finance sector is now barely growing, at just 0.1% in Quarter 1, compared with 1.3% in Quarter 4 last year.

4.7 The economy has continued to add jobs at an impressive rate, with an increase in employment of nearly a quarter of a million in the period December 2014 to February 2015 compared with September to November 2014. Two thirds of this was in full-time jobs, and the vast majority was employment by businesses rather than self-employment. This bodes well for occupier demand, particularly for offices.

4.8 Consumer spending power has been boosted in recent months by a simultaneous fall in inflation and acceleration in wage growth. CPI inflation remained at zero in March 2015, whilst wages (including bonuses) rose by 1.7%.

4.9 Retail sales volumes reflect this, up 0.9% during the period December 2014 to February 2015 compared with the previous three months. This was the 25th consecutive monthly increase on this measure, and the longest period of sustained growth since November 2007.

4.10 Strong retail sales performance should continue throughout 2015, boosted by further wage growth in real terms, strong employment growth, and rising house prices. However, retailers remain under price pressure and growth in retail sales values will be much more subdued.

4.11 With inflation at zero, the UK is likely to see a short period of mild deflation in the coming months. However, core inflation (which excludes volatile elements such as energy and food) is running at 1%, and with higher wages feeding through, the risk of a harmful period of deflation remains low. The consensus view expects a modest rise in CPI to 0.8% by the end of 2015, and this should mean a delay in the first base rate rise until early 2016.

4.12 The uncertainty surrounding the general election did not have any marked impact on the economy or property markets, and the decisive outcome will prevent a potentially damaging period of uncertainty that could have adversely affected business and investor confidence. However, the new Conservative Government will have many economic challenges. The fiscal deficit remains large at circa 5% of GDP, despite a surge in income tax revenue during the last financial year. There will be further austerity in the next parliament, and the Government's spending plans are largely unfunded.

4.13 We expect growth in 2015 as a whole to be close to the long-term trend of around 2.6% p.a. The UK's robust economic performance last year was driven by employment growth, whilst total productivity actually fell by 0.1%. Output is now 4% higher than its prerecession peak in 2008, but output per worker is still 4% below that level, and raising productivity is one of the main challenges facing the UK economy in the medium term.

Milton Keynes Overview

4.14 Milton Keynes is strategically well located 54 miles north west of London, 72 miles south east of Birmingham, and sits between Oxford and Cambridge. Data supplied by Focus suggests that there is a population of 190,333 within 10km of the centre of Milton Keynes and a population of 359,331 within 20km of the centre.

4.15 Data from the Office of National Statistics (ONS), via Centre for Cities, demonstrates that over the decade to 2013, Milton Keynes had experienced average annual population growth of 1.6%, resulting in a total population of 255,700 residents. Over the same period the employment rate has declined from 80% to 74%.

4.16 The brief for this study defines Central Milton Keynes (CMK) as the area of land between the west coast mainline and the Grand Union canal between H5 Portway and H6 Childs way, which includes Campbell Park. This area is also covered by the CMK Business Neighbourhood Plan.

4.17 For the purpose of this Phase 1 report, and the Phase 2 report and their respective site assessments, GVA has distinguished between CMK and Campbell Park, due to the different character and infrastructure of Campbell Park to the rest of CMK.

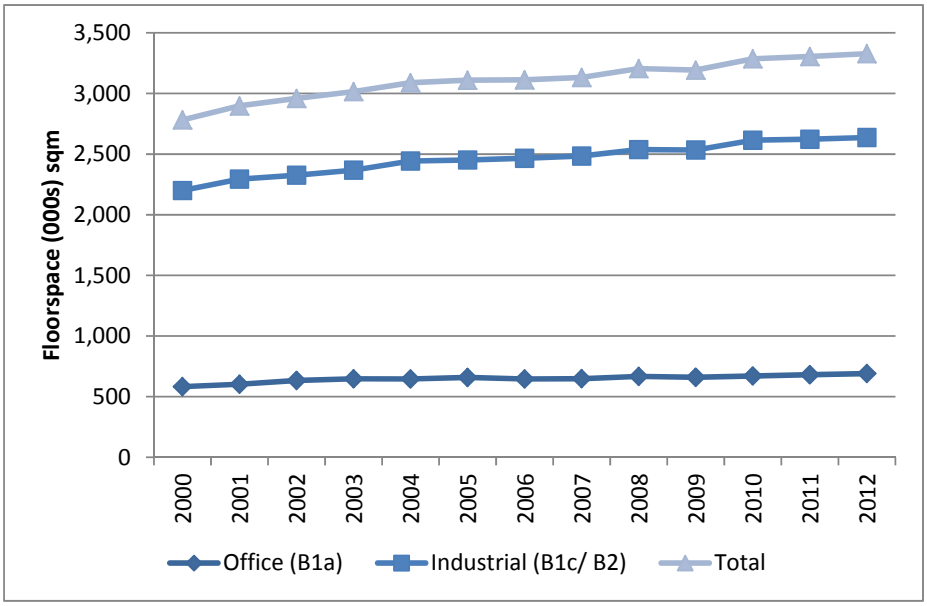
Existing Employment Land

4.18 The following section provides a comprehensive review of employment sites and premises within Milton Keynes. It considers the latest data provided by the Valuation Office Agency (VOA) and provides a context to the existing employment land use in Milton Keynes.

Total Stock

4.19 Figure 4.1 below identifies the total B-class use floorspace in Milton Keynes for 2000-2012 (latest available data). It shows that both office and warehouse floorspace have had an overall increase of circa 19% during this period.

Figure 4.1: B-Class floorspace in Milton Keynes borough 2000-2012



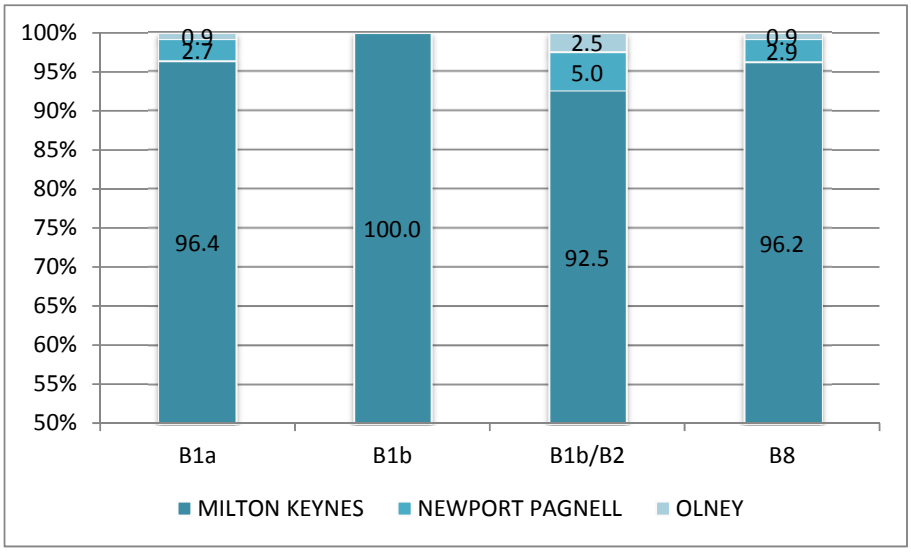
Source: VOA

4.20 Before the recession the growth of office floorspace was already in decline with a growth rate of 5.1% in 2001/2002 falling to 2.9% in 2007/2008 and then to 1.2% in 2008/2009. Subsequently, there has been a marginal increase in office floorspace with both 2010/11 to 2011/12 showing an increase rate of 1.5%, but the growth rates have not been able to recover to pre-recession years.

4.21 Similar to office trends, industrial floorspace growth rates were high in early 2000s, with the highest being 3.2% in 2003/2004, but have consistently declined up to a low of -0.2% in 2008/2009. In 2009/10 they improved to the pre-recession rate of 3.2% and in the following years have shown a marginal growth of 0.3%-0.5%, lowering the overall average growth rate of industrial floorspace post-recession.

4.22 Figure 4.2 shows the proportion of commercial floorspace distribution within the borough in the city of Milton Keynes and towns of Newport Pagnell and Olney, with Milton Keynes having the highest concentration (above 95%) of commercial floorspace.

Figure 4.2: B-class floorspace by key settlements

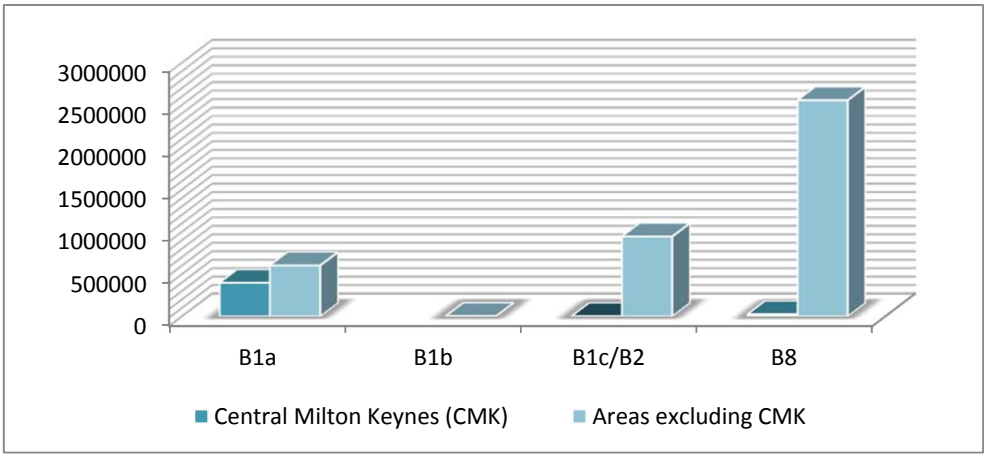


Source: VOA, 2012

Central Milton Keynes and the rest of the borough[10]

4.23 Figure 4.3 shows the spatial distribution of occupied commercial floorspace by use class in Central Milton Keynes (CMK) and the rest of the borough. As we would expect, the city centre has a strong concentration of office (B1a) use, with almost 40% of this floorspace type in CMK, whereas the rest of the borough have stronger concentrations of B8 (62%), followed by B1c/ B2 (23%) and B1a (15%).

Figure 4.3: B-class floor space split- CMK and the rest of the borough



Source: VOA, 2012

[10] Note: VOA data is collected at postcode area level, as such in this analysis CMK and Campbell Park are grouped under the MK9 postal district

4.24 Table 4.1 presents B-class unit breakdown by different size classification in CMK and the rest of the borough. CMK has 22% of the total office unit (B1a) stock of the entire borough. Out of the total 767 units in CMK, 93% are B1a units while 67% are B8 units, showing a high concentration of offices. Whilst there are no B8 units within the core CMK area the use of postcode districts to provide this spatial analysis means some industrial areas on the edge of the city are included.

4.25 For the rest of the borough there are a total of 5,026 commercial units, of which 52% is B1a, 228% is B1c/B2 and 26% is B8.

Table 4.1: B-Class unit breakdown by size in Central Milton Keynes and the rest of Milton Keynes

Central Milton Keynes					
Size	B1a	B1b	B1c/B2	B8	Total
Large >300sqm	241	-	1	15	256
Med (200-300sqm)	53	-	1	4	58
Small (51 - 100sqm)	93	-	0	8	102
Small/Med (101-200sqm)	116	-	0	7	123
V.Small (<50sqm)	210	-	2	18	228
Total	713	-	4	52	767
Areas excluding CMK					
Size	B1a	B1b	B1c/B2	B8	Total
Large >300sqm	597	3	472	879	1951
Med (200-300sqm)	218	-	135	120	473
Small (51 - 100sqm)	555	-	171	97	823
Small/Med (101-200sqm)	498	-	205	152	855
V.Small (<50sqm)	734	-	113	77	924
Total	2602	3	1096	1325	5026

Source: VOA, 2012

Key Employment Sites

4.26 Table 4.2 shows the 30 largest employment sites in Milton Keynes. The employment sites are located in Milton Keynes, Newport Pagnell and Olney. The largest concentration of floorspace is available in Central Milton Keynes at 9.3%, followed by Bletchley at 7.9% and Kingston at 6.1%.

Table 4.2: B-Class floorspace by key settlement location

	Sub Areas	B1a (sq m)	B1b (sq m)	B1c (sq m)	B2 (sq m)	B8 (sq m)	Grand Total (sq m)	% of the total
1	CENTRAL MILTON KEYNES	396394	-	72	226	23426	420118	9.3%
2	BLETCHLEY	64204	-	21218	53243	219778	358443	7.9%
3	KINGSTON	5812	-	108	69071	199677	274668	6.1%
4	KILN FARM	12745	-	17223	50480	165526	245975	5.4%
5	TONGWELL	10389	-	5708	29692	183800	229589	5.1%
6	MOUNT FARM	16072	-	5697	75226	114413	211408	4.7%
7	DENBIGH WEST	861	-	19293	68792	101194	190140	4.2%
8	TILBROOK	13989	-	-	42982	122776	179747	4.0%
9	MAGNA PARK		-		-	165903	165903	3.7%
10	BLAKELANDS	14548	-	7579	42466	97470	162063	3.6%
11	BRINKLOW	261	-	-	-	139339	139600	3.1%
12	LINFORD WOOD	103646	-	2348	6675	26217	138887	3.1%
13	NEWPORT PAGNELL	24506	-	14263	24834	59035	122637	2.7%
14	KNOWLHILL	68528	-	-	8106	43427	120061	2.7%
15	OLD WOLVERTON	1762	-	14490	14046	89421	119718	2.6%
16	NORTHFIELD	508	-	6298	39943	70284	117034	2.6%
17	WOLVERTON	4382	-	1320	957	102069	108728	2.4%
18	WINTERHILL	15305	-	2753	6692	60273	85024	1.9%
19	CROWNHILL	22409	-	2301	32337	26925	83972	1.9%
20	WYMBUSH	9561	-	1689	36035	35543	82827	1.8%
21	ROOKSLEY	14063	-	-	15834	52359	82256	1.8%
22	WOLVERTON MILL	23378	-	1433	15415	27747	67973	1.5%
23	REDMOOR		-	-	5303	61579	66881	1.5%
24	BLEAK HALL	1718	-	5960	8752	47451	63880	1.4%
25	BRADWELL ABBEY	700	862	6534	10771	41307	60174	1.3%
26	SNELSHALL WEST		-	-	9874	45904	55777	1.2%
27	OLNEY	7539	-	11056	9739	18784	47118	1.0%
28	STACEY BUSHES	77	-	9094	8848	28794	46812	1.0%
29	DENBIGH EAST	181	-	8114	12405	20032	40732	0.9%
30	FOX MILNE	20163	-	-	-	20397	40560	0.9%

Source: VOA, 2012

Current Market

4.27 The sections below give an indication of trends in the industrial and office markets in Milton Keynes, based on GVA's analysis of the Focus database.

Current Industrial Market

4.28 In September 2014, there were 122 available (known and reported) leasehold industrial properties in the Milton Keynes borough; totalling a floorspace of 176,077 sqm. Table 4.3 provides an overview of the available space.

Table 4.3 – Overview of leasehold industrial market availability

Grade	Number of properties	Average days on market	Range of sizes sq. m	Average size sqm	Average rent £ per sqm	Total space sqm
New or refurbished	11	1,657	127-9,290	1,149	75.13	12,640
Second hand	111	664	46-19,505	1,472	53.39	163,437

Source: Focus, 2014

4.29 Rental values were higher for new and refurbished stock (although this will largely depend on the size, specification and quality of the units). These figures will also not take into account any incentives that are offered as part of lease negotiations.

4.30 The majority of the available units are secondary accommodation (accounting for over 90% of the available units). The total floorspace offered by second hand accommodation is much greater than that offered by new or refurbished accommodation, and accounts for 93% of the total available leasehold space.

4.31 At the time of undertaking the assessment, there were 19 industrial properties for sale, ranging from 160 sqm to 315,868 sqm. The largest property was advertised for distribution purposes at Magna Park. However, the majority of the units were smaller than 4,645 sqm and a large proportion of these were located at Denbigh Industrial Estate. Overall, there is a balance between properties which were identified for warehousing/general industrial purposes. Asking prices ranged from £67,500 to £1.95 million, although these are to be seen as guide prices. There were also a large number of properties not quoting prices.

4.32 The Bidwell's Business Space Databook (2014) demonstrated that industrial stock had increased in the M1 South area, largely due to the increase in secondary space on the

market. There was only 29,729 sqm of grade A supply across the whole of the M1 South market. In Milton Keynes there was a take up of 162,310 sqm of industrial space in 2013.

4.33 There was only one grade A building of above 9,290 sqm on the market at the time, highlighting the acute shortage of supply in the Milton Keynes market.

4.34 Occupiers have turned their attention to freehold purchases, particularly on buildings of 3,716–9,290 sqm, where values are perceived to have bottomed and future gains are achievable. The largest transaction in the second half of 2013 was Hathor LLC's £2m purchase of 9,755 sqm at MK1, Denbigh Road.

Current Office Market

4.35 In September 2014, there were 222 office properties available on the market, equating to a total available leasehold space of 120,916 sqm. Table 4.4 provides an overview of the office space.

Table 4.4 – Overview of leasehold office market availability

Grade	Number of properties	Average days on market	Range of sizes sqm	Average size sqm	Average rent £ per sqm	Total space sqm
New or refurbished	18	1,005	140-4,548	788	154	14,214
Second hand	204	782	25-6,331	518	119	105,691

Source: Focus, 2014

4.36 As we would expect, rental values are higher for new or refurbished units (although, again, this will largely depend on the size, specification and quality of the units) and these figures will also not take into account any incentives that are offered as part of lease negotiations.

4.37 The majority of the available units are secondary accommodation (accounting for almost 92% of the available units). Moreover, the total floorspace offered by secondary accommodation is much greater than that offered by new or refurbished accommodation, and accounts for 88% of the total available leasehold space. The majority of the new or refurbished properties that are available are located at Frank Whittle Park in the Knowlhill area.

4.38 GVA analysed the difference in the average rents for offices that are available for leasehold purchase in 2014 between Central Milton Keynes (CMK) and the rest of the borough. There is no difference in asking rents for secondary office properties both seeking rents of £117 per sqm. However, the asking rents for grade A properties are noticeably higher in CMK with

asking rents between £172 and £215 per sqm compared to the rest of the borough at £151 per sqm on average.

4.39 At the time of undertaking the assessment, there were 9 office properties for sale, ranging from 238 to 2,065 sqm. All but two of the units are less than 9,290 sqm, and a lot of the units are located in Linford Wood. Asking prices range from £320,000 to £2.88 million although again, many are not quoting asking prices, and those which do are purely a guide price.

4.40 Lambert Smith Hampton (LSH) provided GVA with their Office Market Databook (2014) at one of the stakeholder workshops (note: data has been converted into metric units). The key points from this were:

- 72,953 sqm of offices of 465 sqm or more, and 35,210 sqm of offices of 465 sqm or less in Milton Keynes;
- 2,786 sqm of Grade A office stock in Milton Keynes, equating to 2,140 sqm in the town centre and 641 sqm out of the town centre;
- Approximately 80% of take up over the last 2 years has been on new or Grade A space;
- Current Grade A supply is equivalent to circa 1 years take up;
- Prime rents remain at £215 per sqm; and
- There is availability in the key schemes in Milton Keynes of 33,079 sqm, equating to 17,321 sqm in the town centre and 15,758 sqm out of the town centre.

4.41 This availability within the key schemes and quoting rents is highlighted in Tables 4.5 and 4.6 which follow. Parking is also limited within these schemes (an issue which we discuss further in section 7 of this report).

Table 4.5 – Town Centre Key Schemes

Building	Availability (sqm)	Quoting rent (£/sqm)	Parking (ratio to sqm)
MK Central	8,640	156	1:29
Pinnacle Mews	1,430	231	1:93
CBXII	2,885	177	1:24 (300 spaces)
Exchange House	983	177	1:54 (22 spaces)
Bouverie Square	2,072	194	Not confirmed
Bank House	1,394	167	1:42
Genesis House	3,330	188	1:148
Phoenix House	743	167	1:48
Elder House	2,176	151	1:14
Building 1200 The Hub Not yet built	4,548	215	1:52
2 Exchange Square	983	188	1:76
Victoria House Not yet built	465 to 1,858	194	Not confirmed

Source: LSH Office Market Databook, 2014/GVA, 2014

Table 4.6 –Rest of the citykey schemes

Building	Availability (sqm)	Quoting rent (£/sqm)	Parking (ratio to sqm)
Kestral House – Kents Hill	2,657	151	1:14
Redwing House – Kents Hill	3,834	151	1:14
Lundbeck House – Caldecotte	1,993	194	1:21
Baird House – Knowlhill	641	194	1:28
Libra House – Linford Wood	2,193	140	Generous
Carina House – Linford Wood	1,022	118	Generous
Gemini House – Linford Wood	1,394	135	Generous
Cobra House – Wavendon	2,022	178	1:54 (22 spaces)

Source: LSH Office Market Databook, 2014/GVA, 2014

4.42 In addition, the LSH Office Market Data Book (2014) identifies the following key trends and challenges:

Trends

- Increase in number of buildings being refurbished to a Grade A standard;
- Significant increase in level of investments;
- Opportunity to recycle redundant stock for other uses;

- Relaxation in planning to ease office to residential conversion; and
- Incentives have now stabilised with signs of tightening on some prime space.

Challenges

- Lack of development finance, limiting new stock;
- Economic growth in the service sector;
- Ability to attract inward investors;
- Not capitalising on connections to the wider UK and global markets; and
- Milton Keynes will hit a critical tipping point in the supply/demand balance in 2015/2016.

4.43 The Bidwell's Business Space Databook (2014) also demonstrated activity in the Milton Keynes office market. Although activity slowed in the M1 South office market in the second half of the 2013, there was strong performance of the Milton Keynes market, which saw a take up of over 35,452 sqm of floorspace.

4.44 Almost 80% of take up has been on new or grade A space over the past two years. The most recent examples of this have been at the Pinnacle, where Transport Systems Catapult took 3,437 sqm, with a further 2,248 sqm in the same scheme going under offer after the year end. The Pinnacle is now fully let**,** and, with a lack of new build stock on the market, occupiers are looking at design-and build options in order to satisfy requirements. The levels of demand in the City have risen to 130,063 sqm, their highest in ten years.

Past Industrial Market

Lettings

4.45 Desk top research utilising the Focus database demonstrated that over a five year timeframe (from July 2009 – June 2014) 411 industrial letting's deals were completed in the Milton Keynes borough, totalling approximately 501,672 sqm. This equated to an average take up per year of circa 100,334sqm.

4.46 Table 4.7 below summarises the past five year's industrial lettings activity in the borough.

Table 4.7 – Industrial lettings summary table

	Number of lettings	Average days on market	Range of size of units (sqm)	Average unit size (sqm)	Range of rents achieved (£ per sqm)	Average rent achieved (£ per sqm)
2009 (part)	24	565	15-2,647	796	22-823	137
2010	69	533	51-8,176	711	26-151	58
2011	108	613	51-29,592	1,153	16-108	54
2012	83	724	67-27,587	1,341	32-215	62
2013	96	528	51-5,604	837	27-91	55
2014 (part)	31	327	45-14,118	1,068	31-101	62
Totals	**411**	**3,290**		**5,905**		
Overall Average	**82**	**658**		**1,181**		**86**

Source: Focus, 2014

4.47 Table 4.7 shows that the average number of days for leasehold industrial properties to be on the market was 658, although the range within this was large, with properties on the market for as little as 3 days, and others up to 2,928 days. This will largely be driven by the quality of the available stock. Typically, those properties which were identified as being secondary stock were on the market for 360 days, whereas those which were identified as being new or refurbished were on the market for 132 days.

4.48 The average rent achieved in the last five years was £86 per sqm, although it is difficult to draw specific conclusions, as the values achieved will depend upon the size, specification and location of the accommodation. The quality of the industrial estate and surrounding occupiers are also likely to affect the values. In addition, it should be noted that the average values for 2009 (pre-recession) are substantially higher than for the four following years (economic downturn and subsequent recession), which has had the effect of increasing the overall average. Further, many of the properties did not disclose the achieved rent, so the averages have only been formulated using the information that was available.

4.49 The average size of the units let over the five year period was 1,181 sqm, which indicates a stronger demand for smaller unit sizes. However, as can be seen from the range of the size of units for each year, there has been a big difference, which will have the effect of skewing the

averages. The smallest industrial lettings deal was 15 sqm and the largest was 29,592 sqm over the time frame which was reviewed.

Freehold Sales

4.50 The research shows that over the five years examined, there were fewer industrial freehold sales deals than lettings with 67 deals completed in total. Through freehold sales deals, there were transactions totalling 622,445 sqm, which equates to an average of 120,773 sqm per year.

4.51 Table 4.8 summarises the past five year's industrial sales activity in the borough.

Table 4.8 – Industrial freehold sales summary table

	Number of sales	Average days on market	Range of size of units (sqm)	Average unit size (sqm)	Range of sales price achieved (£ per sqm)	Average sales price achieved (£ per sqm)
2009 (part)	16	386	80-16,665	2,590	384-990	683
2010	9	349	546-15,581	6,732	550-2,284	1,212
2011	22	408	71-33,970	3,649	181-1,130	671
2012	3	308	598-1,399	871	n/a	n/a
2013	12	691	381-62,152	10,135	177-20,606	4,009
2014 (part)	5	403	147-87,185	24,210	n/a	1,308
Totals	**67**	**2,545**		**48,187**		**7,883**
Overall Average	**13**	**509**		**9,637**		**1,971**

Source: Focus, 2014

4.52 Table 4.8 shows that the average number of days for freehold industrial properties to be on the market was 509, although the range within this was reasonably large, with properties on the market for as little as 26 days, and others up to 1,602 days, most wholly reflective of the quality of the available stock. In general though, the freehold units were on the market for less time than the leasehold units, which indicates that there is demand from occupiers seeking to own their property. Typically, those properties which were identified as being secondary stock were on the market for 254 days, whereas those which were identified as being new or refurbished were on the market for 37 days. This follows the same trend as the properties which were let.

4.53 The average sales price achieved in the five year period was £1,971 per sqm. Yet, again, it is difficult to draw in depth conclusions from this, due to the factors mentioned earlier and the type of occupier looking for accommodation. There was only one freehold transaction in 2014 and there were no freehold transactions in 2012, so this has not been included in the

calculation. Moreover, many of the properties did not disclose the achieved sales price, so the averages have only been formulated using the information that existed.

4.54 The average size of unit sold over the five year period was 9,637 sqm. As with the leasehold deals, there was a large range in the size of the units, which will have had the effect of skewing the averages. The smallest industrial sales deal was 71 sqm and the largest was 87,185 sqm over the time frame which was reviewed.

Past Office Market

Lettings

4.55 Desk top research demonstrates that over a five year timeframe (from July 2009 – June 2014) 313 office letting's deals were completed in the Milton Keynes borough, totalling approximately 133,779 sqm. This equated to an average take up per year of 26,827 sqm.

4.56 Table 4.9 below summarises the past five year's office lettings activity in the borough.

Table 4.9 – Office lettings summary table

	Number of lettings	Average days on market	Range of size of units (sqm)	Average unit size (sqm)	Range of rents achieved (per sqm)	Average rent achieved (per sqm)
2009 (part)	25	399	54-5,670	629	88-188	131
2010	68	605	29-5,268	444	11-180	116
2011	70	732	22-1,194	268	32-320	107
2012	46	752	47-3,508	419	59-188	116
2013	71	653	16-3,446	341	54-215	116
2014 (part)	33	566	32-2,758	300	102-215	138
Totals	**313**	**3,707**		**2,401**		**723**
Overall Average	**67**	**741**		**480**		**145**

Source: Focus, 2014

4.57 Table 4.9 shows that the average number of days for leasehold offices to be on the market was 741, although the range within this was large, due to the varying quality of stock, with properties on the market for as little as 2 days, and others up to 3,399 days. Typically, those properties which were identified as being secondary stock were on the market for 289 days, whereas new or refurbished were on the market for 125 days, indicating a higher demand from the market for newer stock. This is shown by the increasing number of vacant space that is being advertised in CMK for second hand office space.

4.58 The average rent achieved in the last five years was £145 per sqm, although, it is important to not draw too many conclusions from this data, for the reasons mentioned previously. Averages across each year have been similar, giving a general indication of the trends. Yet, many of the properties did not disclose the achieved rent, and averages have only been formulated using the information that was available.

4.59 The average size of the offices let over the five year period was 480 sqm. However, the large range in the size of the units will have had the effect of skewing the averages. The smallest office lettings deal was 22 sqm and the largest was 5,670 sqm over the time frame which was reviewed.

Freehold Sales

4.60 The research shows that over the last five years, there were fewer office freehold sales deals than lettings deals, with 51 deals completed in total. Through freehold sales deals, there were transactions totalling 164,751 sqm, which equates to an average of 32,951 sqm per year. Therefore, despite there being a lower number of office freehold sales deals than office lettings deals, the size of the units sold were much greater.

4.61 Table 4.10 below summarises the past five year's office sales activity in the borough.

Table 4.10 – Office freehold sales summary table

	Number of sales	Average days on market	Range of size of units (sqm)	Average unit size (sqm)	Range of sales price achieved (£ per sqm)	Average sales price achieved (£ per sqm)
2009 (part)	8	435	179-2,973	1168	735-2,893	1,514
2010	10	847	198-13,808	4555	282-2,121	1,391
2011	4	593	108-2,812	876	828-1,631	1,294
2012	17	970	92-19,983	2,787	336-2,625	1,141
2013	5	938	114-6,796	2,670	305-772	529
2014 (part)	7	145	243-4538	1,315	463-1,311	949
Totals	**51**	**3,928**		**13,871**		**6,819**
Overall Average	**10**	**786**		**2,774**		**1,364**

Source: Focus, 2014

4.62 Table 4.10 shows that the average number of days for freehold offices to be on the market was 786, although the range within this was reasonably large, with properties on the market for as little as 4 days, and others up to 3,125 days. In general the freehold offices were on the market for longer than the leasehold offices, in contrast to the trend with industrial properties.

Typically, the offices which were identified as being secondary stock were on the market for 293 days, whereas those which were identified as being new or refurbished were on the market for 34 days. This follows the same trend as the offices which were let.

4.63 The average sales price achieved for offices in the five year period examined was £1,364 per sqm. Yet, again, it is important to not draw broad brush conclusions from this data. Again, as many of the properties did not disclose the achieved sales price, the averages have only been formulated using the information available.

4.64 The average size of the office units sold over the five year period was 13,871 sqm. As with the leasehold deals, there was a large range in the size of the units, which will have skewed averages. The smallest office sales deal was 92 sqm and the largest was 19,983 sqm over the time frame reviewed.

Investment Market Summary

4.65 The most recent GVA economic and property market review confirms that the annual value of commercial property investment transactions reached nearly £69 billion over the 12 months to March 2015, according to Property Data. This is higher than the previous peak in 2007 when average capital values were a third higher than today. Quarter 1 2015 was the second highest first quarter on record, at over £17 billion, although some way below the record total of £21 billion in Quarter 4 2014.

4.66 Quarter 1 saw the highest ever proportion of purchases by overseas investors at 51%, compared with an average of 45% over the last two years. In central London 66% of purchases in Quarter 1 were by overseas buyers. US investors have been particularly active, purchasing UK commercial property worth £3.6 billion in Quarter 1, accounting for 40% of all overseas investment, and more than 20% of the total UK figure.

4.67 The seemingly insatiable demand for UK property from both domestic and overseas buyers has continued to apply downward pressure to property yields. In central London, Quarter 1 saw prime office yields come in by 25 basis points in five out of the ten central London sub-areas we monitor, and yield levels are now close to where they were at the peak of the last cycle.

4.68 However, it is outside of central London where the scope for yield compression is greatest. The average equivalent yield for regional offices has moved downwards by circa 25 basis points in the first three months of 2015, and by 250 basis points since peaking in mid-2009 (IPD Monthly Index). Despite this, the gap with central London remains historically wide – indeed, it is still more than 100 basis points wider than averages over the last 20-30 years.

4.69 Annual total returns on the IPD Monthly Index peaked in October 2014 at 20.1%, and have fallen month on month to 18.3% as of March 2015. Capital value growth has fallen correspondingly from 13% to 11.6% over the same period. Looking at more recent performance over the three months to March 2015, the total return was 3%. This equates to 12.6% on an annualised basis, well below the 18.3% year-on-year figure.

4.70 The outlook for the next 12 months remains positive and we see no reason for the international inflow of capital into the UK market to slow. The prospect of a referendum on the UK's membership of the EU over the next two years could increase the perceived level of risk of investing in the UK, although this is unlikely to have any marked impact during 2015.

4.71 There is certainly the potential for further downward yield movement, particularly outside London. 10-year gilt yields remain close to historic lows at below 2% (as of early May 2015), so the gap with property yields remains wide, and all property capital values are still 25% below their 2007 peak (and more like 40% below in real terms). However, with yield compression easing, performance will be increasingly driven by rental growth fundamentals.

4.72 We forecast a total return from UK commercial property in 2015 of nearly 11%, suggesting a continued deceleration throughout the rest of the year. This still represents a very strong level of performance, especially bearing in mind the current 'noflation' environment, and should prove to be a very favourable performance in comparison with equities and gilts.

B Class Floorspace

Changes in the amount of employment floorspace

4.73 Table 4.11 illustrates changes in the amount of employment floorspace for B1, B2 and B8 use classes in the Borough of Milton Keynes from 2004/05 – 2010/11 in sqm. This information is provided in the Milton Keynes Employment Technical Paper, which was produced in 2012.

4.74 This shows that overall floorspace gains were over 608,000 sqm and overall floorspace losses were over 270,000 sqm. Growth in employment floorspace over this time was dominated by warehousing or B8 storage and distribution uses and B1a office development. Between them these two uses accounted for over 96% of all increases in 'B' use class net floorspace over this period.

4.75 The largest net increase in floorspace by use class was for B8 storage and distribution uses at over 195,000 sqm (57.8% of all net floorspace, about 32,552 sqm per annum) showing the high demand for this type of floorspace in Milton Keynes, for example in locations similar to Magna

Park. This was followed by B1a Offices at around 129,900 sqm (38.4% of all net floorspace, around 21,651 sqm per annum).

4.76 The Employment Technical Paper estimated that if the increase in the amount of office type floorspace B1a uses was 21,651 sqm per annum, then the number of jobs likely to be generated by this development, if fully occupied, would be 1,443 jobs per annum.

4.77 By contrast the increase in warehousing floorspace of 32,552 sqm per annum using job densities of 75 sqm per full time employee is estimated to generate around 434 jobs per annum. Thus the total number of jobs generated by the development of office and warehousing floorspace in the Borough is around 1,877 jobs per annum.

4.78 The figures in the Employment Technical Paper also illustrate a considerable amount of demolition and change was happening during 2004/05 – 2010/11. In the case of offices an average of around 11,000 sqm of floorspace was lost per annum and in the case of warehouses an average of around 16,738 sqm of floorspace was lost per annum.

Table 4.11 - Changes in the amount of employment floorspace for B1, B2 and B8 use classes in the Borough of Milton Keynes from 2004/05 – 2010/11 in sqm.

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Total
B1a – Offices	Losses	5,157	3,269	5,935	11,661	18,200	12,605	9,543	66,370
B1a – Offices	Gains	24,415	21,994	29,736	18,579	30,172	62,351	9,029	196,276
B1a – Offices	Net	19,258	18,724	23,802	6,918	11,971	49,746	-514	129,906
B1b – R&D	Losses	0	0	251	0	0	0	0	251
B1b – R&D	Gains	3,694	1,118	1,418	0	30,166	0	0	36,396
B1b – R&D	Net	3,694	1,118	1,168	0	30,166	0	0	36,146
B1c – Light Industry	Losses	9, 056	0	2,732	4,543	891	1,201	6,257	24,680
B1c – Light Industry	Gains	926	5,729	6,168	1,894	1,619	2,200	1,359	19,894
B1c – Light Industry	Net	-8,131	5,729	3,437	-2,650	728	999	-4,898	-4,786
B2 – General Industry	Losses	24,113	14,683	8,280	5,363	9,536	12,772	3,944	78,690
B2 – General Industry	Gains	25,243	426	10,466	11,278	5,513	2,718	4,489	60,134
B2 – General Industry	Net	1,130	-14,257	2,187	5,915	-4,023	-10,054	545	-18,556
B8 – Storage and Distribution	Losses	18,452	35,534	3,538	6,025	21,847	1,058	13,972	100,426
B8 – Storage and Distribution	Gains	33,383	38,759	81,972	69,573	16,082	13,315	42,665	295.740
B8 – Storage and Distribution	Net	14,932	3,225	78,434	63,548	-5,765	12,257	28,683	195,314
Total in each year	Losses	56,778	53,486	20,734	27,592	50,474	27,636	33,716	270,417
	Gains	87,661	68,026	129,761	101,324	83,552	80.583	57,531	608,441
	Net	30,883	14,540	109,027	73,732	33,078	52,947	23,815	338,024

Source: MK Employment Technical Paper, 2012.

4.79 Table 4.12 is an update to Table 4.11 and illustrates changes in the amount of employment floorspace for B1, B2 and B8 use classes in the Borough of Milton Keynes from 2011/12 – 2013/14 in sqm. This information has been produced by GVA using the 2011/12 Annual Monitoring Report, together with data for 2012/13 and 2013/14 supplied by Milton Keynes Council.

4.80 This shows that overall floorspace gains were over 170,000 sqm and overall floorspace losses were over 84,000 sqm during 2011/12 – 2013/14. As was the case previously, the most significant amount of growth over this time has been to B1a office development and B8 storage and distribution development, between them these two uses have accounted for 98.4% of all increases in 'B' use class net floorspace over this period.

4.81 The largest net increase in floorspace by use class was for B8 storage and distribution uses at 57,761 sqm (67.1% of all net floorspace, about 19,254 sqm per annum) followed by B1a Offices at around 26,921 sqm (31.3% of all net floorspace, around 8,974 sqm per annum).

4.82 The figures from the Employment Technical Paper also illustrate a considerable amount of demolition and change was happening during 2011/12 – 2013/14. In the case of offices an average of around 9,767 sqm of floorspace was lost per annum and in the case of storage and distribution uses an average of around 9,282 sqm of floorspace was lost.

Table 4.12 - Changes in the amount of employment floorspace for B1, B2 and B8 use classes in the Borough of Milton Keynes from 2011/12 – 2013/14.

		2011/12	2012/13	2013/14	Total
B1a – Offices	Losses	6,019	12,175	11,108	**29,302**
B1a – Offices	Gains	4,542	48,269	3,413	**56,224**
B1a – Offices	Net	-1,478	36,094	-7,695	**26,921**
B1b – R&D	Losses	230	0	0	**230**
B1b – R&D	Gains	0	2,754	0	**2,754**
B1b – R&D	Net	-230	2,754	0	**2,524**
B1c – Light Industry	Losses	55	0	634	**689**
B1c – Light Industry	Gains	623	579	225	**1,427**
B1c – Light Industry	Net	568	579	-409	**738**
B2 – General Industry	Losses	14,170	10,685	1,780	**26,635**
B2 – General Industry	Gains	2,381	17,832	4,582	**24,795**
B2 – General Industry	Net	-11,789	7,147	2,801	**-1,841**
B8 – Storage and Distribution	Losses	9,182	2,469	16,194	**27,845**
B8 – Storage and Distribution	Gains	9,512	15,572	60,522	**85,606**
B8 – Storage and Distribution	Net	330	13,103	44,328	**57,761**
Total in each year	**Losses**	**29,565**	**25,329**	**29,717**	**84,611**
	Gains	**17,058**	**85,006**	**68,741**	**170,804**
	Net	**-12,599**	**59,677**	**39,024**	**86,102**

Source: GVA, 2015.

Changes within and outside Central Milton Keynes

4.83 Table 4.13 shows the net changes in B1a Office floorspace within and outside Central Milton Keynes from 2004/05 to 2010/11 in sqm.

Table 4.13 – Net changes in B1a Office floorspace within and outside Central Milton Keynes from 2004/05 to 2010/11 in sq. m.

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	Total
Within CMK	-2,675	384	5,010	-989	3,708	18,548	-1,393	**22,593**
Outside CMK	21,933	18,340	18,792	7,907	8,264	31,198	879	**107,313**
Total B1a Offices	**19,258**	**18,724**	**23,802**	**6,918**	**11,972**	**49,746**	**-514**	**129,906**

Source: MK Employment Technical Paper, 2012.

4.84 Table 4.13 shows that over the period 2004/05 to 2010/11 the net increase in B1a office floorspace within the Borough was 129,906 sqm resulting from new builds, extensions to existing premises, and changes of use. Most of this development, 107,313 sqm or 82.6% of the total, occurred outside CMK. This was due to the widespread availability of land outside CMK for office development, much of it with planning consent, before the adoption of the Core Strategy by the Council in 2013

4.85 The amount of office floorspace completed in CMK over the same period was 22,593 sqm or 17.4% of the total. Much of the growth within CMK is accounted for by the completion of the Pinnacle building in Midsummer Boulevard in 2009/2010.

4.86 Table 4.14 is an update to Table 4.13, based on data supplied to GVA by Milton Keynes Council. It shows the net changes in B1a Office floorspace within and outside Central Milton Keynes from 2011/12 to 2013/14 in sqm.

Table 4.14 – net changes in B1a Office floorspace within and outside Central Milton Keynes from 2011/12 to 2013/14 in sqm.

	2011/12	2012/13	2013/14	Total
Within CMK	-724	30,859.5	-4526.7	25,608.8
Outside CMK	-1,485	3,365.14	-3,168.64	-1,289.24
Total B1a Offices	**-2,209.74**	**34,224.64**	**-7,695.34**	**24,319.56**

Source: GVA, 2015.

4.87 Table 4.14 shows that over the period 2011/12 to 2013/14 the net increase in B1a office floorspace within the Borough was 24,319.56 sqm resulting from new builds, extensions to existing premises, and changes of use.

4.88 Over this three year period, there has been a net increase in offices within CMK of25,608.8 sqm, representing 100% of the total net increase in office floorspace in the Borough. . In contrast, there has been a net decrease in offices outside CMK of -1, 289.24 sqm.

4.89 This could be due to the saturation of the available land outside the centre with planning consent, or investment interest spurred by the successful completion of the Pinnacle building.

4.90 During 2011/12 – 2013/14 the Council achieved its objective of making CMK the focus for office development. A continuation of policy and market intervention should enable this trend to be maintained over the next plan period.

Occupier Market Summary

4.91 The latest RICS UK Commercial Market Survey (Quarter 1 2015) portrays an upbeat picture of commercial occupier demand, reflecting the robust economic backdrop. It shows surveyors reporting a strong rise in demand in Quarter 1 (a net balance of +46%, close to the high of +52% at the same time last year and the tenth consecutive quarterly increase in demand). The survey also suggests that availability has continued to decrease over the first three quarters of the year, driving strong rental expectations among surveyors.

4.92 The most recent GVA research suggests that following strong take-up figures in 2014, both the London and regional office markets have seen slower starts to 2015. However, we do not expect this slowdown to persist, given the strong reported level of demand and some substantial requirements in the pipeline.

4.93 Central London office take-up for Quarter 1 2015 totalled just 185,806 sqm, 16% down on the five-year quarterly average. The vacancy rate remains the same as in the previous quarter at

5.3%, but has fallen from 5.7% over the last year. Strong central London rental growth has continued, with average rental values rising by 11.2% over the year to Quarter 1, according to the IPD Quarterly Index. We expect further strong gains during 2015. Take-up across the 'Big Nine' regional office markets amounted to 183,484 sqm in Quarter 1, 5% above the five year quarterly average.

4.94 Average rental growth for offices outside London and the South East has gathered pace over the past three months, with the IPD Quarterly Index recording 1.7% growth over the year to Quarter 1 2015, compared to 1.2% to the previous quarter. We forecast 2% growth this year, followed by 3% p.a. over the following three years.

4.95 Improvements in consumer spending power and a slowdown in retailer failures are beginning to have a positive impact on high street retail vacancy rates. Vacancy has fallen to 13% at March 2015, according to the Local Data Company, the lowest rate since 2010 and down from 13.2% in December. Central London retail rental growth was 9.7% over the year to Quarter 1 (IPD Quarterly Index) following strong growth at the end of last year. This has begun to slow but we still expect growth of 5.4% this year. This is in marked contrast to the regional markets. Average high street retail rental values outside London and the South East are still falling, at -1.2% over the year to Quarter 1 and by -0.3% during Quarter 1, but we expect growth to turn positive during the year.

4.96 Over the past six months the industrial sector has seen diminishing supply, improving demand and a significant uplift in speculative development across the country. Take-up of modern distribution units over 9,290 sqm amounted to 2,099,609 sqm during 2014, 11% above the five year average. This was the highest level since 2010 and in line with pre-recessionary levels. The last year has seen a step change in the decline of available good quality units. There is currently less than a year's supply of modern distribution units over 9,290 sqm across the country based on past take-up rates. With the shortage of prime supply there is increased interest in secondary stock in good locations. Rental growth in the industrial sector over the year to Quarter 1 stands at 3% (IPD Quarterly Index), the highest it has been since 2001. We forecast that rental growth will average around 3-4% p.a. for the next three years.

Summary

4.97 In terms of the leasehold accommodation which is currently available, there is more in the office sector (222 reported properties) than the industrial sector (122 reported properties).

4.98 There is no difference in asking rents between CMK and the rest of the borough for secondary office properties, both with asking rents of circa £117 per sqm. Yet the asking rents for primary properties are noticeably higher in CMK at £172 to £215 per sqm compared to the rest of the borough at £151 per sqm on average.

4.99 There is significantly less freehold accommodation currently on the market across both sectors. There are more freehold properties available in the industrial sector (19 reported), compared to the office sector (9 reported).

4.100 Industrial accommodation saw total take up of circa 501,672 sqm for leasehold properties. This reflects an average take up of circa 100,334 sqm a year at an average rent of £86 per sqm a year.

4.101 Office accommodation saw total take up of 130,000 sqm for leasehold properties. This reflects an average take up of circa 26,827 sqm a year at an average rent of £145 per sqm a year.

4.102 There have been a smaller number of freehold transactions across both sectors. The average unit size sold in freehold transaction is greater than that in a leasehold deal, which suggests that there is owner occupier demand for large units.

4.103 During 2011/12 – 2013/14, overall floorspace gains were in excess of 170,000 sqm and overall floorspace losses were over 84,000 sqm. The most significant amount of growth was in B1a office development and B8 storage and distribution development, between them these two uses accounted for 98.4% of all increases in 'B' use class net floorspace.

4.104 Over the period 2011/12 – 2013/14, there has been a net increase in offices within CMK of 25,608.8 sqm, representing 100% of the total net increase in office floorspace in the Borough. In contrast, there has been a net decrease in offices outside CMK of -1, 289.24 sqm.

4.105 During 2011/12 – 2013/14 the Council achieved its objective of making CMK the focus for office development. A continuation of policy and market intervention should enable this trend to be maintained over the next plan period.

5. The Functional Economic Area

5.1 Despite a need to plan for the future at the Milton Keynes level, economic activity is not restricted to administrative boundaries. As such it is important to understand how the activity within Milton Keynes relates to and influences that within a wider geography. Most often this geography encapsulates those areas that border the economy in question, however a city the scale of Milton Keynes has a much wider 'reach'.

5.2 Defining the 'functional economic area' is important to understand how growth and development, labour flows and infrastructure across a larger area will influence Milton Keynes' economic potential. As recognised by guidance published by DCLG in 2010 there is no centrally agreed mechanism or set of metrics for identifying and defining the relevant area.

5.3 The guidance suggests that functional economic areas need to be directly linked to local characteristics and based on a range of locally relevant information and indicators. The guidance focuses on the labour flows and travel to work patterns as well as housing market and business supply chain dynamics.

5.4 Given the focus of this study it is also important to understand and include commercial property market dynamics as a reflection of business and occupier preferences and needs. Understanding these occupier and property investment decisions will be as important to the future of employment land in the borough as housing market and travel to work patterns.

The Commercial Market

5.5 Our analysis and consultation with local property agents has identified that the functional property market area within Milton Keynes differs between activity sectors. There are key differences in the 'reach' of the office, industrial and warehouse sectors.

5.6 What is clear across all sectors is that the scale of activity within Milton Keynes places it within more strategic-scale markets than can be captured within the neighbouring authority boundaries. In occupier demand terms this means that the area draws businesses from not only its immediate hinterland but also regional, national and even international markets, competing with a range of regional scale cities across the UK. We will consider the strengths and competiveness of Milton Keynes in this light in the second phase of the Study, however at this juncture it is important to recognise the potential reach to understand how the Milton Keynes economy functions.

5.7 The strategic connections of Milton Keynes directly to the M1 place it at the heart of the 'golden triangle' for large scale logistics activity with north-south connections that provide

quick and uncongested access to markets in London, the Midlands, Birmingham, East Anglia and the west. Crucially Milton Keynes is centrally located to act as the fulcrum of connections to/from the largest commercial ports and the UK's major centres of manufacturing and population.

5.8 Recent development at Magna Park demonstrates that the scale of demand is that of national significance, with major retailers locating their national distribution hubs within the development. This represents a 'step up' from previous activity where units within existing estates such as the Brinklow Industrial Estate were large but more orientated to meeting regional scale requirements.

5.9 Relatively few locations across the UK offer the nature of connections and scale of development provided by Milton Keynes; however it is the M1 link that is key. Other junctions on the M1 provide significant opportunities and it is our understanding that many operators consider these to be equally attractive in many instances. Therefore, in distribution terms the functional economic market area would extend beyond the immediate area and include the stretch of the M1 between London and Daventry and potentially as far as Rugby.

5.10 Looking forward, in terms of development delivery and occupier demand, it is this M1 corridor market that Milton Keynes will operate within and compete for investment from. In attracting more logistics activity (if this is the strategy the Council pursue) Milton Keynes will need to identify an offer that can be competitive within this market geography rather than just considering what is provided in neighbouring areas.

5.11 The reach and influence of Milton Keynes within the manufacturing sector also extends beyond the Council's administrative boundary. More than any other sector businesses within manufacturing have client and supplier bases that stretch across the UK and beyond. Key businesses are major national and international brands and attract a range of related businesses to the area.

5.12 Mapping business supply chains at a localised level is a complex, and often futile, exercise and relies heavily on data provided by businesses themselves, which may by its nature be commercially sensitive. As such it can be resource intensive but add limited value to the definition of the economic market. We are aware (through desktop research and knowledge from other projects) that businesses in sectors such as motorsport and transport technologies have linkages to local locations like Bedford, other south east clusters (such as Cherwell and Oxford) and places in other parts of the UK including East Anglia, Merseyside, Derbyshire and the North East. The ability to connect to these places (and London) is critical for the sectors success in Milton Keynes and will continue to provide a competitive advantage in the future.

5.13 Further the nature of some of the highly specialised and high value activities have a labour market draw way beyond the local area. Highly skilled engineers, technology specialists and technicians are in short supply nationally and command sufficiently high wages to be relatively 'footloose' or able to commute significant distances to work.

5.14 Therefore the 'reach' of the manufacturing sector is arguably wider than that of logistics, potentially stretching across the country. However the core functional market is likely to be more localised and linked to the particular specialisms and sector specific assets in the area. Whilst it is appropriate to be mindful of the wider linkages the functional market for manufacturing is likely to be focussed along the 'arc' north of London that connects the Swindon/Oxford manufacturing hub east across the country, perhaps as far as Cambridge. Essentially filling the gap between London and Birmingham.

5.15 This strategic positioning, lying almost equidistant between the major city economies of London and Birmingham and the major innovation and education centres of Cambridge and Oxford offers an ideal location for national and international businesses. The ability to access these markets has drawn a range of head and corporate office occupiers into both the city centre and main business parks.

5.16 These range from major professional, business and financial service businesses through to strategically important activities such as the new Network Rail HQ. The area is increasingly attracting a number of technology orientated businesses, particularly linked to software and transport technology. The introduction of the western section of East-West Rail in 2019 will create new, direct connections that can further strengthen the regional role Milton Keynes plays as an office centre.

5.17 With increasing pricing issues in London, new supply coming forwards in Birmingham City Centre and major growth plans for other regional cities and towns Milton Keynes (and CMK in particular) will have both increased opportunities and competition for office occupiers. What is clear though is that the 'market' within which CMK operates extends far beyond the local authority boundary and covers much of the South East.

5.18 This greater scale of activity will become increasingly important as new growth and infrastructure is delivered, this will allow Milton Keynes to continue to compete both for occupiers but also labour force. The scale and nature of office based activity dominates the local area, drawing skilled workers from across the wider sub-region.

The Functional Labour Market

5.19 The Functional Economic Area is also defined by the relationship between Milton Keynes' economic activity and the workforce that services it. Workforces are increasingly mobile and

therefore regardless of the scale of population growth within Milton Keynes the businesses within it will still draw workers from other areas. Likewise people living in Milton Keynes are likely to choose to work elsewhere.

5.20 Understanding these labour flows is critical to identify the scale of influence economic growth in Milton Keynes may have on other locations and, therefore, the interdependency of Milton Keynes on other places to service growth.

5.21 In labour flow terms it is generally accepted that a functional labour market can be established by identifying where the majority of residents share both a place of work and residence. The standard assumption is, therefore, that the functional labour market is represented by the geography within which 75% of the residents both live and work.

5.22 As established within section 2 of this report Milton Keynes is a net importer of labour and therefore its economy has a strong relationship with the neighbouring resident communities. The 2011 Census data estimated a total of 122,475 jobs were provided within Milton Keynes, of which 65% were taken up by Milton Keynes residents reinforcing the wider geography of the functional labour market.

5.23 Achieving a 'self-containment' rate of 75% requires the inclusion of the neighbouring areas of Central Bedfordshire, South Northamptonshire and Aylesbury Vale – who together contribute over 18,500 workers to the Milton Keynes economy.

5.24 Whilst this theoretical threshold for a functional labour market is helpful it is somewhat arbitrary and does not fully reflect the real impact and influence of the Milton Keynes economy on its neighbouring areas. For example, the 75% rate would exclude the inclusion of Northampton and Bedford from the functional area even though they contribute over 8,000 workers to the Milton Keynes economy.

5.25 This issue highlights the unique characteristics and context of Milton Keynes as an economic centre, drawing large amounts of labour from a large number of neighbouring areas. Given this characteristic a 'standard' definition of the functional labour market is unlikely to be locally relevant or reflect Milton Keynes' true impact on the wider area. We would therefore suggest that the functional labour market area is defined by a significantly higher threshold and linked to the scale of labour being imported.

5.26 This approach would suggest a strong labour market correlation exists at approximately 85% of the total jobs provided within Milton Keynes and capturing locations that contribute more than 1,500 workers to fill jobs within Milton Keynes(i.e. people living outside the MK area who work within it). This would include the immediately bordering authorities (in order of labour

force contribution) of Central Bedfordshire, South Northamptonshire, Aylesbury Vale, Northampton, Bedford and Luton.

Conclusions

5.27 As demonstrated above the functional economic and market area within which Milton Keynes operates is not singular, with the reach and relationship between Milton Keynes and other local authority areas defined by a complex set of business, market and people dynamics.

5.28 In commercial property and business orientation terms the area stretches a considerable distance, way beyond the SEMLEP area to link up London, Oxford, Birmingham and Cambridge. In labour market terms there is a narrower focus, with relationships primarily extending into the neighbouring boroughs in terms of jobs within Milton Keynes i.e. the immediately bordering authorities (in order of labour force contribution) of Central Bedfordshire, South Northamptonshire, Aylesbury Vale, Northampton, Bedford and Luton. The labour force contribution of Milton Keynes, however, extends to London and Birmingham.

5.29 Overall, whilst there are clear overlaps and relationships of the different market and economic influences they share a key driver, the connections to and from Milton Keynes from local areas and other strategic centres. These enable efficient movement of goods and people, enabling businesses to choose to locate here, workers to access jobs in Milton Keynes but also workers to work elsewhere.

5.30 In the future it is important that Milton Keynes thinks differently about its economic geography in relation to the particular activity or focus. In terms of encouraging business and occupier interest there needs to be a continued focus on understanding and exploiting the relationship of Milton Keynes to more strategic markets, ensuring it can compete with major economic hubs in the South East and the Midlands in particular.

5.31 However, in providing appropriately skilled workers Milton Keynes will need to work closely with its neighbours to ensure that, whilst jobs for local residents are optimised, the wider impact and benefits are understood.

6. Employment Land Supply

6.1 This section of the report reviews the existing supply of employment land within the Milton Keynes Council administrative area.

6.2 The supply of employment land in Milton Keynes consists of three key components:

- **Existing Employment Sites –** mixture of existing industrial estates and office parks that contribute to the employment land supply in Milton Keynes;
- **Proposed Sites –** within or bordering existing employment sites that may be developed and contribute to meeting future employment land requirements in Milton Keynes; and
- **Potential Sites –** new undeveloped land that may be developed and contribute to meeting future employment land requirements in Milton Keynes.

6.3 The review of these components includes both quantitative and qualitative elements.

6.4 The total site area assessed is shown in Table 6.1 below.

Table 6.1 – Summary of Employment Land Supply in Milton Keynes

Site Typology	Existing Employment Sites (ha)	Proposed Sites (ha)	Potential Sites (ha)	Total (ha)
Total Area (ha)	988	36.86	160.65	**1,185.51**

Source: GVA, 2015.

6.5 Our employment sites assessment matrix for these sites is provided at Appendix A. Each site has a unique reference number and is listed by settlement in the matrix. A grid square reference number is also provided from the Official 2013 Milton Keynes City Atlas. The employment sites have also been ranked to compare their performance and the offer across the borough, seen at Appendix B. The details of the proformas used to create this matrix are appended at Appendix C. The sites are spread throughout the Borough as shown in the plans at Appendix D.

6.6 The following sections consider the findings from our employment land supply assessment for each of the three categories of employment land.

Existing Employment Sites

6.7 These existing employment sites currently contribute to the employment land supply in Milton Keynes. Data on these areas was supplied in part by Milton Keynes Council and supplemented by our review of existing planning policy documents.

6.8 A total of 48 sites comprising 1,000.07 hectares (ha) were initially identified. Of these two sites comprising 12.07 ha were visited and subsequently excluded from the assessment leaving 46 sites (988 ha). These were excluded due to the sites either being undevelopable or not being in active 'B class' employment use. The sites that were excluded and the reasons for this are shown in Table 6.2 below.

Table 6.2 – Sites Excluded from Employment Supply Assessment

Site Ref. No.	Size (ha)	Site Name	Reason Removed
R33	0.40	Land at Stonebridge	This site is undevelopable due to extensive mature trees and woodland.
R53	11.67	Old Bletchley	Part of this site is in operation as an army base. It is unlikely to provide additional employment floorspace due to it being a secure site.

Source: GVA, 2015.

Market assessment

6.9 GVA undertook an independent assessment of each site, based upon site visits by surveyors and planners. This assessment included a range of market, and physical assessment criteria using a standard proforma to record details of each area. It should be borne in mind that this analysis reflects existing baseline conditions for the sites assessed and is taken as a snapshot in time, with the site visits undertaken between August and December 2014. It does not take into account any proposed improvements or investment to any of these existing employment sites.

6.10 Using the scores from the sites assessment matrix we have been able to undertake some quantitative analysis of the scores, which is detailed below.

6.11 This section summarises the market based characteristics of the employment land supply. The market assessment takes account of the following characteristics:

- Nature of existing tenants;
- Public transport;
- Prominence;
- Local amenities;
- Character of area;

- Economic constraints;
- Strategic location; and
- Market Attractiveness.

6.12 The scores are then ranked into a number of categories which determine how well the site scores. Table 6.3 below summarises the results of this analysis.

Table 6.3 – Summary of Market Scores of the Existing Employment Sites

Market Score	No. of Sites	% of Land	Total Land (ha)
Excellent	14	40%	395.50
Good	30	59%	584.92
Average	2	1%	7.58
Poor	0	0	0
Total	**46**	**100%**	**988**

Source: GVA, 2015.

6.13 It can be seen in Table 6.3 above that the majority of the existing stock (99%) within Milton Keynes is ranked as being of good or excellent quality.

Physical Assessment

6.14 This section summarises the physical based characteristics of the employment land supply. The physical assessment takes account of the following characteristics:

- Access;
- Building Age; and
- Building Quality.

6.15 The scores are then ranked into a number of categories which determine how well the site scores. Table 6.4 below summarises the results of this analysis.

Table 6.4 – Summary of Physical Scores of the Existing Employment Sites

Physical Score	No. of Sites	% of Land	Total Land (ha)
Excellent	24	52%	513.84
Good	19	46%	455.65
Average	3	2%	18.51
Poor	0	0	0
Total	**46**	**100%**	**988**

Source: GVA, 2015.

6.16 It can be seen in Table 6.4 above that the majority of stock (98%) within Milton Keynes is ranked as being of good or excellent quality. Only three sites inspected were ranked as

average, and no sites were ranked as poor. The three sites considered to be average were Fenny Stratford Employment Area (Ref. E11), Newport Pagnell Business Park (Ref. E22) and Water Eaton Industrial Estate (Ref. E38).

6.17 Our employment sites assessment indicates the 'B' class employment use for each site we assessed as determined by GVA. Table 6.5 below shows the number and size of sites within each group.

Table 6.5 – B Class Employment Use

Type of B Use	No. of Sites	% of Land	Total Land (ha)
B1 – Offices/ Office Business Park	3	2%	20.35
B1 and B2 – Offices and Industrial Units	7	11%	112.16
B1, B2, and B8 – Offices, Industrial and Warehouse/Distribution Units	13	43%	419.11
B2 – Industrial Units	5	12%	116.61
B8 - Warehouse/Distribution Units	8	13%	131.13
B2 and B8 – Industrial and Warehouse/ Distribution Units	9	18%	178.51
B1 and B8 – Offices and Warehouse/Distribution Units	1	1%	10.13
Total	**46**	**100%**	**988**

Source: GVA, 2015

6.18 Table 6.5 above highlights that there is a broad mix of B class employment use within Milton Keynes. The majority of employment land provides a mix of office, industrial and warehouse/distribution uses (B1, B2 and B8) in a single setting. A significant amount of employment land also offered a mix of B2 and B8 uses together in one area, whilst others offered these uses in isolation. There were limited sites which offered a mix of office and industrial units (B1 and B8) or office parks that offered solely B1 uses.

6.19 Our employment sites assessment indicates that 29 sites (63%) are fully occupied and 17 sites (37%) have either vacant units, plots or land advertised.

6.20 Often, there were only a small amount of vacant units per site. This would suggest that within existing employment sites there is limited expansion space. Therefore it will be necessary for the potential sites to provide supply to meet market demand.

6.21 The sites with vacant units offered a selection of office, industrial, and warehouse/distribution property to let (B1, B2, and B8 uses). It is our expectation that these sites will continue to provide for the employment needs of the local market and will accommodate the majority of the churn in the local property market.

Proposed Sites

6.22 This category includes sites within or bordering existing employment sites that may be developed and contribute to meeting future employment land requirements in Milton Keynes. Due to their size, location and nature, these sites are suitable for development for employment uses to complement those in their immediate surroundings.

6.23 This category was devised by GVA based upon our understanding of employment land. Each of these sites has a code which corresponds with the existing employment land which it is in or near, and where multiples exist, they are distinguished by the addition of 'A', 'B' or 'C' etc.

6.24 A total of 27 sites, comprising 36.86 hectares were identified.

Market Assessment

6.25 For the market assessment, the sites have been assessed using the same categories as those for the existing employment sites.

Table 6.6 – Summary of Market Scores of the Proposed Sites

Market Score	No. of Sites	% of Land	Total Land (ha)
Excellent	4	15%	5.74
Good	22	80%	29.08
Average	1	5%	2.04
Poor	0	0	0
Total	**27**	**100%**	**36.86**

Source: GVA, 2015

6.26 It can be seen from Table 6.6 above that the majority of proposed employment sites ranked as being good quality in their market assessment. 22 of the 27 sites received this ranking, representing 29.08 ha of land, which is 80% of the total supply of proposed sites.

6.27 No sites were considered to be of poor quality, and only one site scored an average ranking, which is Site C, Wolverton Mill (Ref. E44C).

Physical Assessment

6.28 As with the market assessment, for the physical assessment, the sites have been assessed using the same categories as those for the existing employment sites in the previous section.

Table 6.7 – Summary of Physical Scores of the Proposed Sites

Physical Score	No. of Sites	% of Land	Total Land (ha)
Excellent	22	85%	31.42
Good	4	14%	5.29
Average	1	1%	0.15
Poor	0	0	0
Total	**27**	**100%**	**36.86**

Source: GVA, 2015

6.29 Table 6.7 above indicates that the majority of proposed employment sites ranked as being excellent quality. 22 of the 27 sites received this ranking, representing 31.42 ha of land, which is 85% of the total supply of proposed sites.

6.30 No sites were considered to be of poor quality, and only one site scored an average ranking, which is Site A, Winterhill (Ref. E42A).

6.31 As there appears to be limited expansion space in existing employment sites, it will be necessary for the potential sites to provide supply to meet market demand.

Potential Sites

6.32 This section reviews the potential sites in Milton Keynes. This category includes new undeveloped land that may be developed and contribute to meeting future employment land requirements in Milton Keynes. Therefore potential sites could be identified as employment allocations in the emerging Local Plan: Plan MK.

6.33 Data on these sites was supplied in part by Milton Keynes Council and supplemented by our review of existing planning policy documents, our current market knowledge and through discussion with developers promoting sites in Milton Keynes.

6.34 A total of 40 sites, comprising 158.99 hectares were identified.

6.35 As referred to in paragraph 6.10, our multi-disciplinary team undertook independent assessment of each of the potential sites.

Quantitative Assessment

6.36 Using the scores from the employment sites assessment we have been able to undertake some quantitative analysis of the scores, which is detailed below.

Market Assessment

6.37 This section summarises the market based characteristics of the employment land supply. The market assessment takes account of the following characteristics:

- Nature of existing tenants (as this is not applicable for potential sites we have provided a score of 4 for each site as to the likely future tenant the site could attract);
- Public transport;
- Prominence;
- Local amenities;
- Character of area;
- Economic constraints;
- Strategic location; and
- Market Attractiveness.

6.38 The scores are then ranked into a number of categories which determine how well the site scored. Table 6.8 below shows the results of this analysis.

Table 6.8 – Summary of Market Scores of the Potential Sites

Market Score	No. of Sites	% of Land	Total Land (ha)
Excellent	10	45%	71.87
Good	26	49%	77.93
Average	5	6%	10.09
Poor	2	0	0.76
Total	**43**	**100%**	**160.65**

Source: GVA, 2015.

6.39 Table 6.8 above shows that the greatest proportion of the potential sites within Milton Keynes is ranked as being of good quality, followed by stock which is ranked as excellent quality. Four sites were identified as average.

Physical Assessment

6.40 This section summarises the market based characteristics of the employment land supply. The market assessment takes account of the following characteristics:

- Access;
- Building Age (as this is not applicable for potential sites we have provided a score of 5 for each site as any future property will be modern); and

- Building Quality (as this is not applicable for potential sites we have provided a score of 4 for each sites as any future property will be good quality good quality).

6.41 The scores are then ranked into a number of categories which determine how well the site scored. Table 6.9 below shows the results of this analysis.

Table 6.9 – Summary of Physical Scores of the Potential Sites

Physical Score	No. of Sites	% of Land	Total Land (ha)
Excellent	33	92%	147.47
Good	10	8%	13.18
Average	0	0	0
Poor	0	0	0
Total	**43**	**100%**	**160.65**

Source: GVA, 2015.

6.42 Table 6.9 above shows that the greatest proportion of potential sites within Milton Keynes is ranked as being of excellent quality. In a lot of these cases, as the scores for building age and quality are fixed, the high scores are determined by the sites access, with many sites located close to a motorway junction or a junction to a main road.

Type of 'B class' Employment use

6.43 As these are proposed sites, they all comprise vacant land. As the sites are independent to existing employment sites, they could come forward for any type of 'B class' employment use.

Summary

6.44 We provide below our conclusions from this assessment of the employment land supply within Milton Keynes. Table 6.10 below summarises the extent of the employment land supply within the borough which clearly shows that the Borough has a significant amount of land supply within the three categories.

Table 6.10 – Summary of Employment Land Supply in Milton Keynes

	Existing Employment Sites	Proposed Sites	Potential Sites
Supply (hectares)	988	36.86	160.65
TOTAL	**1,185.51 hectares**		

Source: GVA, 2015.

6.45 We also highlight below the key conclusions from each of the types of employment land supply that we considered.

Existing Employment Sites

6.46 **Market Assessment** – the majority of existing stock (99%) within Milton Keynes is ranked as being of good or excellent quality. 40% of sites representing 395.50 ha is identified as excellent quality and 59% sites representing 584.92 ha is identified as good quality.

6.47 **Physical Assessment** – the majority of existing stock within Milton Keynes is ranked as being of good or excellent quality. 52% of sites representing 513.84 ha is identified as excellent quality and 46% of sites representing 455.65 ha is identified as good quality. Only 2% of sites score an average ranking.

6.48 **B Class Employment Uses** – there is a broad mix of B class employment use within Milton Keynes. The majority of employment land provides a mix of office, industrial and warehouse/distribution uses (B1, B2 and B8) in a single setting (13 sites) or industrial and warehouse/distribution use (B2 and B8) in a single setting (9 sites).

6.49 **Vacancies** – Our employment sites assessment indicates that 29 sites (63%) are fully occupied and 17 sites (37%) have either vacant units, plots or land advertised.

Proposed Sites

6.50 **Market Assessment** – the majority of proposed employment sites ranked as being good quality. 22 of the 27 sites received this ranking, representing 29.08 ha of land, which is 80% of the total supply of proposed sites.

6.51 **Physical Assessment** – the majority of proposed employment sites ranked as being excellent quality. 22 of the 27 sites received this ranking, representing 31.42 ha of land, which is 85% of the total supply of potential sites.

6.52 As there appears to be limited expansion space in existing employment sites, it will be necessary for the proposed sites to provide supply to meet market demand.

Potential Sites

6.53 **Market Assessment** – the greatest proportion of the potential sites within Milton Keynes is ranked as being of good quality (49%) closely followed by stock which is ranked as excellent quality (45%).

6.54 **Physical Assessment** – the greatest proportion of the potential sites within Milton Keynes is ranked as being of excellent quality. 33 sites representing 147.47 ha of land and representing 92% of the total area are identified as excellent quality.

6.55 **B Class Employment Uses** – As these are potential sites, they all comprise vacant land. As the sites are independent to existing employment sites, they could come forward as any type of 'B class' employment use.

7. Stakeholder Engagement

7.1 As part of this study GVA held two workshops with key stakeholders. The first workshop took place on the 2nd October 2014, with a focus on the economic baseline evidence base, and the second workshop took place on the 24th October, with a focus on the employment land supply and property market. A third stakeholder meeting took place on the 14th May 2015 with a presentation and discussion on the key findings from the Study. The outcome of this is discussed in the Phase 2 report.

7.2 In addition to this the consultants have engaged independently with local agents active in the property market and a range of public and private sector stakeholders with interest in the outcome of the study.

7.3 We have also given all Local Authorities that neighbour Milton Keynes the opportunity to engage with the process. A summary of the views received are documented in section 3 of this report.

7.4 We turn now to summarise the key outcomes of the first two stakeholder workshops that informed the Phase 1 report.

Workshop 1 – The Economic Baseline

7.5 Representatives from Milton Keynes Council (MKC), Milton Keynes Development Partnership (MKDP), GVA, The Open University, the University of Bedfordshire, the Federation of Small Businesses (FSB), and Business Leaders attended the first workshop.

7.6 The discussions were based around the following broad themes: skills; higher education; knowledge economy drivers; travel to work data; impact of property values; impact of retail; small businesses; and additional socio economic analysis.

7.7 Table 7.1 below provides a summary of the key discussion points based on these themes.

Table 7.1 – Workshop 1 key discussion points

Skills There was agreement about the need to balance skills to meet those required for knowledge based business growth in the borough. This was a general issue and also linked to the lack of 'traditional' Higher Education (HE) institutions in Milton Keynes. It was recognised that while some skills performance was strong there was a mis-match between workforce skills and business needs. It was highlighted that MK exports its higher skilled workers but, traditionally, has imported a similar proportion from neighbouring areas. MK was seen as benefitting from a net inflow of graduates which was seen as a positive trend to support future growth. Overcoming skills issues was seen as the key challenge to economic success.
Higher Education (HE) It was questioned how a University presence in MK would influence the economy in the medium to long term (up to 2031) in terms of attracting high value businesses as a result of the time taken to establish a new institution. The role of the existing HE provision in generating business growth was raised and whether they could 'do more'. Looking at the opportunity to work with Cranfield, driving growth in MK linked to engineering research specialisms was felt to be an underplayed opportunity. The key question was if there is an alternative to having a University.
Knowledge based economy drivers Alternative knowledge sector drivers were discussed, with key ideas and opportunities based around exploring more locally relevant and organic approaches such as a Science Park in the City, the Smart City initiative and innovation driven by existing businesses. How these could help with the branding of MK's economy and attracting business clusters was considered a more appropriate approach for MK. It was raised that the longer term impact of the transport catapult and presence of Network Rail can be captured as an alternative knowledge economy driver, particularly if linked to opportunities for pilot, trial or demonstration projects within the City. External links were also highlighted, both locally via Cranfield, and further afield such as opportunities driven by development at Kings Cross/Euston in the digital sector. It was felt that MK (despite the data presented) did not face a specific issue related to the scale of public sector employment, which was felt to represent a low proportion of the overall workforce.

Travel to Work Data

It was acknowledged by the participants that MK is losing skills to other districts and there is a reliance on labour from other areas. Economically this was not seen as a disadvantage but is more reflective of the role of MK in the sub-region and its growing maturity as an economic hub. It was recognised that in planning and sustainability terms a greater balance between population and employment would be beneficial.

It was suggested further analysis of Travel To Work (TTW) data could be undertaken to understand the sectoral and occupation split of those who are travelling outside MK to understand potential in the economy.

Property Values

Concerns were raised about the initial data on commercial values, which showed a decline in values over the last 5 years. The impact and implications for the delivery of new space and the refurbishment of existing space was an important consideration for future economic activity. The inability to viably deliver good quality new stock will impact the quality of businesses attracted to MK. Also a lack of good quality new stock will potentially deter higher value activity who seek Grade A stock.

Impact of retail

Retail is a key sector of employment in MK, it was questioned if the changing retail sector (pre and post-recession) and changing consumer habits will have an impact on the economy. How this will translate into B class employment was considered.

Small businesses

The failure of small businesses after 4/5 years was recognised. This was felt to be partly linked to how the businesses themselves were set up but also the types of sectors they were active in.

Long term the start-up and small business community was seen as a major economic opportunity, particularly in terms of increasing employment density within sites, but appropriate workspace would be needed. This would include small start-up facilities but also larger 'move on' spaces. Appropriate property products were considered including a Science Park and its potential linkages to either private sector research based organisations/the HE sector.

Socio-economic Indicators

The following suggestions were given for inclusion in baseline (where data was available):

- Comparators: It was suggested that 'regional comparisons' may not show MK in its true context and the study should include more comparator cities like Reading, Swindon, Brighton, Peterborough and Guildford as 'benchmarks'.
- Size of the business by Employment and Sector.
- Business survival breakdown by sector.
- TTWA: Identifying key sectors that the labour force travels out for and its influence on economy, and impact of those working from home.

Source: GVA, 2014.

7.8 Overall the first stakeholder workshop was open and informative. It was agreed that MK should not seek to replicate what other places have done. It was felt that MK is unique and the strategy going forward should be intrinsically tied to its strengths. The diversity of the economic base and availability of employment land were felt to be key strengths on which to base future success.

7.9 The discussions resulted in a series of action points for GVA, largely further analysis and the inclusion of additional indicators, which GVA have taken forward in the preparation of this final Phase 1 report.

Workshop 2 – Employment Land Supply/Property Market

7.10 Representatives from MKC, GVA, Milton Keynes City Centre Management (MKCCM), FSB, Business Leaders, Brown and Lee, Bidwells, Lambert Smith Hampton (LSH), Hampton Brook, and Kirkby and Diamond attended the second workshop.

7.11 The discussions were based around the following broad themes: parking; the property market and competing locations; suitability of employment land supply; and proposed and potential sites.

7.12 Table 7.2 below provides a summary of the key discussion points based on these themes.

Table 7.2 – Workshop 2 key discussion points

Parking
All of the stakeholders agreed that there is a potential lack of parking, which is a critical issue in Milton Keynes and has the effect of deterring investors from the borough. The cost is also considered to be too high.
It was highlighted that there is an undersupply of parking spaces in the 'business zone' during the week and an undersupply in the 'retail zone during the weekend.
The stakeholders felt that occupiers need a dedicated package where parking is a part of this. Currently there are cases where large office developments have no parking as part of the offer.
There is also no overspill or out-of-town parking available, and the park-and-ride facility is underutilised.

Market and competing locations

The stakeholders felt that Milton Keynes has a three tier market.

Luton and Northampton were cited as being competing locations, despite rental levels being lower in Milton Keynes.

There is a lack of a consistent delivery of office stock, and it was questioned whether this was a land supply or development management issue.

Some considered that Milton Keynes does not have a clear identity when it comes to its employment land offer.

There is generally a backlash to any regeneration in Plan: Milton Keynes which moves the borough away from its initial new town 'vision'.

There was a feeling that the MKC needs to offer reduced business rates and service charges as incentives to encourage investment, and to facilitate partnership working.

Developers are not currently considering design and build opportunities.

Suitability of employment land and property

It was raised that the industrial stock is out-of-date and 'tired', especially in locations such as Kiln Farm.

Another issue with the industrial stock is the lack of a yard, or external open space particularly noticeable with the second-hand premises developed in the 1970's/1980's. These units also have low eave heights which are not suitable for modern occupiers.

There is an oversupply of units around the 5,000 sqft size where rents achieve about £60 psf.

Many of the employment estates are identical and there are none which particularly stand out as having a unique offer in terms of specifications, with the exception of Magna Park.

The optimum quantum and mix within employment estates is a high proportion of industrial premises with a small proportion of office premises (about 10%). This is what modern occupiers seek (according to the local agents). The current multi-let nature of the estates is a legacy of the new town government led delivery in the 1970's/1980's.

Major corporates prefer to have freehold ownership of their properties, causing a churn of freehold stock.

There are only two developments which are truly Grade A office stock, and the majority of others are 30 to 40 years old, and are becoming tired and in need of refurbishment.

The borough should build at £125 to £135 psf and let at £18 to £20 psf.

Caldecott is one of the only office/out-of-town parks. Out of centre office parks are private sector led and need additional amenities. Occupiers don't need to be located in CMK provided the right infrastructure and amenities are in place. Broadband provision is actually better outside of CMK.

There is also limited office stock below 1,000 sqft. There is a need to target SME's and provide incubation space.

EPC ratings were mentioned as a potential determining factor in occupier's decisions.

Proposed and Potential sites

Some proposed sites will only be brought forward by the current occupier as expansion space (this is what they were intended for). They are unlikely to be available to the wider market.

Some potential sites are constrained and may be more suitable for alternative forms of development, such as residential (i.e. the potential sites next to Wolverton Mill). Many of the stakeholders are of the view that the existing land allocations may need reviewing.

Source: GVA, 2014.

7.13 This workshop was extremely relevant and the discussions resulted in a series of further areas for discussion to inform the study.

7.14 Stakeholders were asked, in light of increases in home-working, if there is a need for facilities within residential areas for homeworkers to receive and welcome visitors and clients, such as a space within a community centre, or at a business centre or small commercial building. The

stakeholders felt that there is currently no evidence of demand for this type of facility in the borough of Milton Keynes.

7.15 In addition to this workshop, a one-off meeting was held with a key developer in Milton Keynes who was unable to attend either workshop. The stakeholder gave empirical evidence of latent demand for high quality logistics sites from large footprint users. The stakeholder expressed requirements of circa 280 acres of land over the next 10 years, which would provide an additional 6,000 jobs in Milton Keynes.

7.16 It was noted that logistics sector occupiers typically have a few basic requirements, namely the quality of the space, close access to a motorway junction, and separation from residential developments. Although the stakeholder would consider developing on brownfield land in Milton Keynes, there are not any existing places in Milton Keynes which meet these locational criteria.

7.17 There are over 20,000 public parking spaces on CMK of which 10,500 are available to employees, with proposals to add additional parking spaces in this financial year.

7.18 Further, in response to the concerns about cost, since this study has commenced parking in CMK has increased to £2 per day, which equates to 25 pence per hour. There are also options for car share, green permit, and flexible part-time parking.

7.19 There is significant parking pressure for employees in the business zone and therefore the Council has committed to delivering an additional 1000 employee spaces in this financial year (234 have already been provided).

7.20 Overall, the outcomes of the two workshops, the additional meeting, and the additional correspondence, will both further influence the study and will aid in framing the recommendations in the Phase 2 report.

8. Forecast Demand Scenarios

8.1 In understanding the range and portfolio of future employment land and floorspace need it is important to understand the potential nature of employment growth within Milton Keynes (MK) over the plan period (and beyond) to ensure sufficient provision is made and protected within the area's employment land portfolio.

8.2 As discussed above Milton Keynes Council are currently preparing an updated Local Plan, known as Plan:MK, which will set the strategic land use strategy for the local authority area. Plan:MK will replace the current Core Strategy, at present the Strategic Housing Market Assessment (SHMA) that will support Plan:MK considers a period from 2011 to 2031 therefore, to ensure a consistent evidence base for Plan:MK the economic forecast has been prepared for the same period.

8.3 This section sets out the base economic growth forecasts used within this Study as a basis for understanding the potential scale and nature of economic growth over the Plan:MK period. In forecasting terms MK sits in a unique position, lying on the boundary of the South East and East of England areas. Within the East of England a bespoke employment forecast has been developed by Cambridge Econometrics (the East of England Forecasting Model – EEFM) which the majority of local authorities use as a basis for understanding future growth. However, the South East does not have a centrally prepared forecast and local authorities (and their advisers) are able to use any available forecast. In recent years a number of near neighbours have used forecasts prepared by Experian Business Strategies.

8.4 Given the relationship between the Milton Keynes economy and its neighbours it is important that the evidence base for Plan:MK provides a robust understanding of economic potential that is consistent with the neighbouring areas. Therefore, as a starting point for the future growth forecasts we have prepared two 'base' positions utilising both the EEFM and Experian forecasts.

8.5 No single forecasting model provides a superior or more robust basis for assessing future employment land needs. Whilst the models differ in their forecasting assumptions and approach they do draw on similar base data. Both forecasts have established and accepted methodologies and have been used to inform a wider range of planning evidence bases. As such policy choices can be made on the basis of either approach.

Employment Growth Forecasts

8.6 As a first step in the forecast process we use the employment growth projections within the Experian and EEFM to identify the scale and nature of potential future jobs growth, these are based on sector growth predictions, which are then translated into land use classes.

Experian Based Forecast

8.7 The first forecast model is based on the employment growth projections provided by Experian Business Strategies, these were finalised and published in September 2014. The Experian forecast factors in demographic trends and future expectations and changes. It therefore allows for expected shifts in age profiles, economic activity rates and the impact of changes to the 'statutory' retirement age.

8.8 Housing delivery is not a direct input into the Experian model given the relationship between housing growth and population growth is not linear. Instead the model uses a base population projection that is consistent with those produced by ONS (Experian assist ONS in the preparation of the Household Projections alongside Oxford Economics) and interprets their outputs to forecast the influence of demographic change and population growth on employment.

8.9 The base Experian forecast for Milton Keynes sets out the 'business as usual' employment growth scenario for the area to 2031 across 38 economic sectors. Overall employment is anticipated to grow by circa 28% over the Plan:MK period (2011-2031), with a total of circa 38,630 new jobs. This equates to an annual growth of 1,932 jobs over the 20 year period.

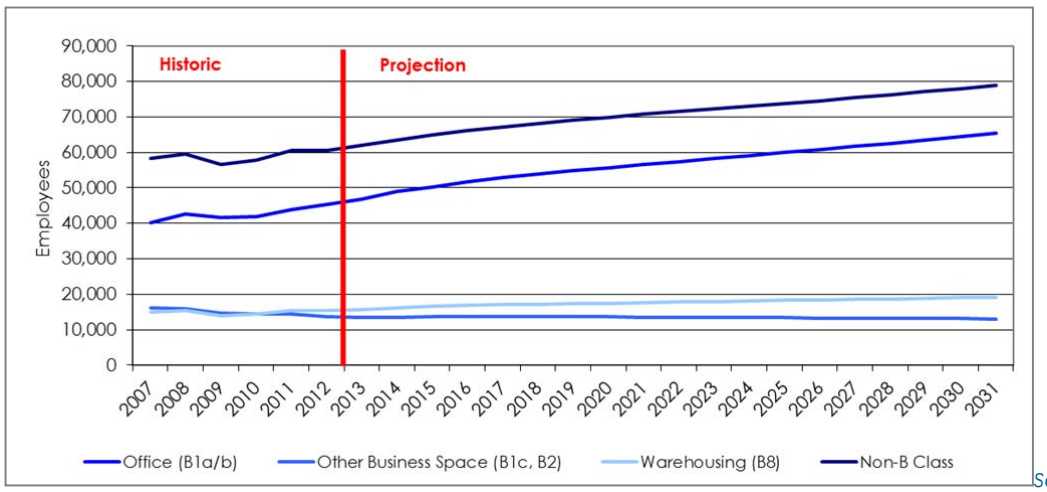
8.10 Translating these sectors into major use categories for planning purposes shows that the most significant level of growth proportionally between 2011 and 2031 will be within office based sectors, representing an increase of 48% over the period. The growth in office based activity also represents the largest proportion of growth, with 50% of future additional employment likely to be within office-based activities, some 21,624 new full time equivalent (FTE) jobs.

8.11 The table below shows the split of sectors between use classes based on Experian sector definitions. It should be noted that some activities do not sit neatly within a single use class and therefore have been 'shared' across all relevant classes.

Table 8.1 – Sector to Use Class Translation

Office	Industrial	Warehousing	Non-B Class
Agriculture, Forestry & Fishing	Food, Drink & Tobacco	Utilities	Agriculture, Forestry & Fishing
Textiles & Clothing	Textiles & Clothing	Wholesale	Extraction & Mining
Utilities	Wood & Paper	Land Transport, Storage & Post	Utilities
Construction of Buildings	Printing and Recorded Media		Construction of Buildings
Wholesale	Fuel Refining		Civil Engineering
Land Transport, Storage & Post	Chemicals		Wholesale
Media Activities	Pharmaceuticals		Retail
Telecoms	Non-Metallic Products		Land Transport, Storage & Post
Computing & Information Services	Metal Products		Air & Water Transport
Finance	Computer & Electronic Products		Accommodation & Food Services
Insurance & Pensions	Machinery & Equipment		Recreation
Real Estate	Transport Equipment		Media Activities
Professional Services	Other Manufacturing		Finance
Administrative & Supportive Services	Specialised Construction Activities		Professional Services
Other Private Services	Land Transport, Storage & Post		Administrative & Supportive Services
Public Administration & Defence	Professional Services		Other Private Services
Residential Care & Social Work	Administrative & Supportive Services		Public Administration & Defence
			Education
			Health
			Residential Care & Social Work

Figure 8.1 – Experian Based Forecast Employment Growth



Source: Experian Business Strategies, GVA, 2014

8.12 Over the plan period employment change within other B class activities will be mixed. The Experian forecast estimates a 24% increase in employment within warehousing activities, resulting in over 3,750 new jobs. However employment within industrial/manufacturing activity is expected to contract by 11%, reducing employment in these sectors by almost 1,500 jobs.

8.13 The scale of decline in industrial employment reflects the ongoing strategic changes within the UK manufacturing sector, from which Milton Keynes is not immune. The sector continues to shift away from large scale consumer product manufacturing to smaller scale higher value activity. Milton Keynes' strength in advanced manufacturing makes it well placed to benefit from this shift in activity but an overall loss of employment is to be anticipated.

8.14 Non-B class employment in sectors such as retail, healthcare and leisure services is also expected to grow, increasing by 30% and generating over 18,000 new jobs. Overall the Experian forecast predicts that in 2031, 45% of employment will be within non-B Class sectors and therefore not likely to be predominantly located within allocated employment sites.

EEFM Based Forecast

8.15 The EEFM provides a number of potential growth scenarios which are principally driven by different approaches to economic recovery and population change. In order to provide a clear base position for comparison with the Experian forecast we have utilised the EEFM "Base" scenario for MK, which forecasts growth to 2031.

8.16 The forecast provides employment change projections across 31 economic sectors. Translating these sectors into major use categories for planning purposes shows that there is an expected total employment growth of almost 47,000 jobs, an increase of 30% over the Plan:MK period, equating to an average of 2,350 jobs per annum over a 20 year plan period.

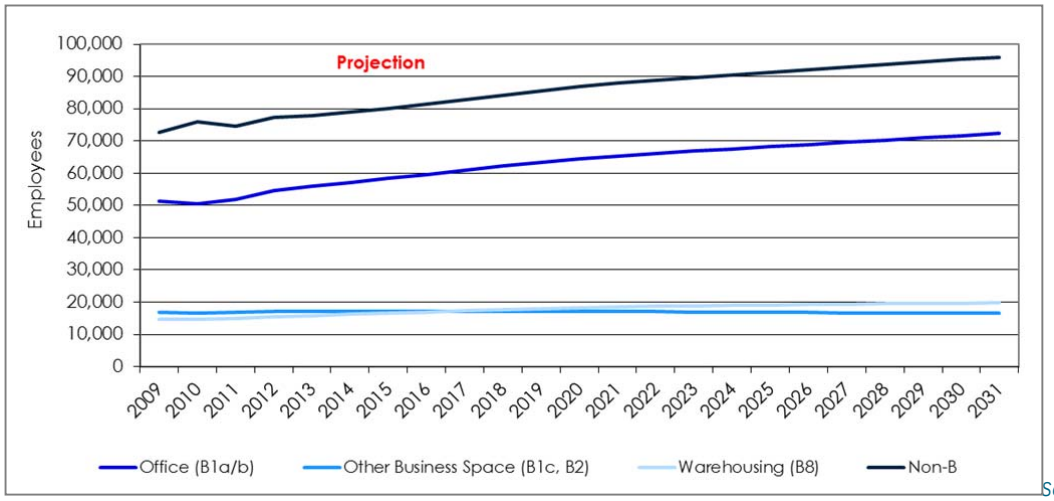
8.17 In contrast to the Experian model, the greatest scale of growth (in terms of FTE jobs) is anticipated to be within non-B class sectors, at circa 21,500 additional jobs. However, the EEFM identifies that the greatest proportional increase will be within office based activities, growing by 40% and delivering almost 20,600 FTE jobs.

8.18 Table 8.2 below shows the split of sectors between use classes based on EEFM sector definitions. It should be noted that some activities do not sit neatly within a single use class and therefore have been 'shared' across all relevant classes.

Table 8.2 – Split of sectors between use classes based on EEFM sector definitions

Office	Industrial	Warehousing	Non-B Class
Agriculture	Food Manufacturing	Wholesale	Agriculture
Utilities	General Manufacturing	Land Transport	Mining and Quarrying
Construction	Chemicals	Publishing and broadcasting	Utilities
Wholesale	Pharma		Waste and remediation
Land Transport	Metals		Construction
Publishing and broadcasting	Transport		Wholesale
Telecoms	Electronics		Retail
Computer related activity	Waste and remediation		Land Transport
Finance	Construction		Water and air transport
Real Estate	Land Transport		Hotels and restaurants
Professional services	Publishing and broadcasting		Publishing and broadcasting
Business services	Professional services		Finance
Public Administration incl land forces	R+D		Professional services
Health and care	Business services		Business services
Other services	Other services		Employment activities
			Public Administration incl land forces
			Education
			Health and care
			Arts and entertainment
			Other services

Figure 8.2 – EEFM Based Forecast Employment Growth



Source: Cambridge Econometrics, GVA, 2014

8.19 Over the plan period employment change within other B class activities will be mixed. The EEFM forecast estimates a 33% increase in employment within warehousing activities, resulting in over 4,900 new jobs. However employment within industrial/manufacturing activity is expected to contract by 2%, reducing employment in these sectors by almost 300 jobs.

8.20 As discussed above the contraction in manufacturing activity is likely to be driven by structural changes in the sector however it is likely that Milton Keynes will continue to accommodate a base of value added manufacturing activity.

8.21 Overall the EEFM forecast predicts that, in 2031, 47% of employment will be within non-B Class sectors and therefore not likely to be predominantly located within allocated employment sites.

Translating Employment into Floorspace Requirements

8.22 Using employment density assumptions we can translate the job creation forecasts into additional floorspace requirements. We draw on a range of sources to identify the appropriate density figures, starting with the HCA Density Guide (2010).

Office Densities

8.23 The British Council for Offices (BCO's) 2013 Occupier Density Study surveyed the BCO membership to identify the relationship between floorspace provision and occupancy (in terms of employee numbers), this survey drew on occupiers themselves, building architects and building owners. Overall the sample consisted of 2.5 million sqm of floorspace across 381 properties, providing a base dataset that covered a wide range of stock types, ages and locations.

8.24 To supplement this sample-based approach the study also drew on data held by IPD, which again draws on information provided by occupiers. This comprised circa 8.5 million sqm of office floorspace shared almost equally between public and private sector occupiers. An additional perception survey was also completed to identify future trends.

8.25 Once the data had been collated it was analysed to identify trends by sector and geography. At the headline level the Study found that across the UK the mean density per workplace was 10.9sqm (NIA) with 38% of the sample properties being occupied at density below 10sqm and 58% occupied at a density between 10sqm and 12sqm.

8.26 For the South East region the average occupier density was calculated to be 12.7sqm (NIA), a lower density than achieved within Greater London which itself had an average of 11.3sqm (NIA). It appears from the data, and our wider experience in advising on office development, that higher densities (between 8 and 10 sqm) tend to mainly be achieved within Central London where the cost of floorspace and nature of business activity drives occupiers to increase efficiency.

8.27 The BCO also identified general occupier density by broad economic sector, breaking down the general trends to understand how certain activities utilise space.

8.28 The initial forecasts identified a range of potential growth sectors within MK, highlighting the likely opportunity for office-based growth across primarily professional services, technology and media and potentially corporates.

8.29 Data from the BCO survey suggests that these sectors would operate at a range of densities:

- Corporate activity 13.1sqm;
- Professional services 12.3sqm;
- Public sector 12.1sqm; and
- Technology, media and telecommunications 10.5sqm.

8.30 Based on these sectors (which most closely align to the initial forecasts) the average density for the borough would be 12sqm per employee, reflecting the average density achieved across the South East office market.

8.31 The study also suggests that whilst there have been recent trends of increasing density, principally driven by the need to reduce costs through the recession, occupier density has begun to plateau suggesting that for many occupiers there are no further opportunities for using space more efficiently.

8.32 However, the study recognises that this trend is not uniform across all sectors and that individual circumstances will drive future changes of density. What is clear from the BCO study is that any 'general' trend such as this cannot be relied upon solely to provide a definitive indication of how occupiers may act in the future.

Warehouse Densities

8.33 Employment within the distribution sector is changing rapidly based on a number of operational changes within the industry. On the one hand increasing automation is decreasing the number of 'warehouse floor' staff as picking and packing is undertaken by machine. However, this mechanisation also requires a number of maintenance and support roles which are serving to offset some of the floor staff losses.

8.34 Our experience suggests that in some new build national distribution centres employment densities can be over 100sqm per employee. However, research by Prologis suggests that

changes in the nature of warehousing has actually driven up employment densities to c. 77sqm per employee, particularly in the new generation of 'dark store'[11] fulfilment centres.

8.35 It is important to get the employment density for MK correct in order to provide sufficient land for the type of activity that will be attracted to the area. MK has a national and regional distribution role and is one of the key hubs within the M1 corridor (the key distribution location for the UK). This role attracts large scale distribution activities that occupy large footprint buildings, these tend to support high levels of mechanisation and therefore employ fewer staff.

8.36 However, given the Study considers MK as a whole, where a range of scales and types of B8 space will be required, 85 sqm therefore provides a reasonable market 'average' whilst reflecting the unique strategic opportunity.

Floorspace Requirements from Economic Growth

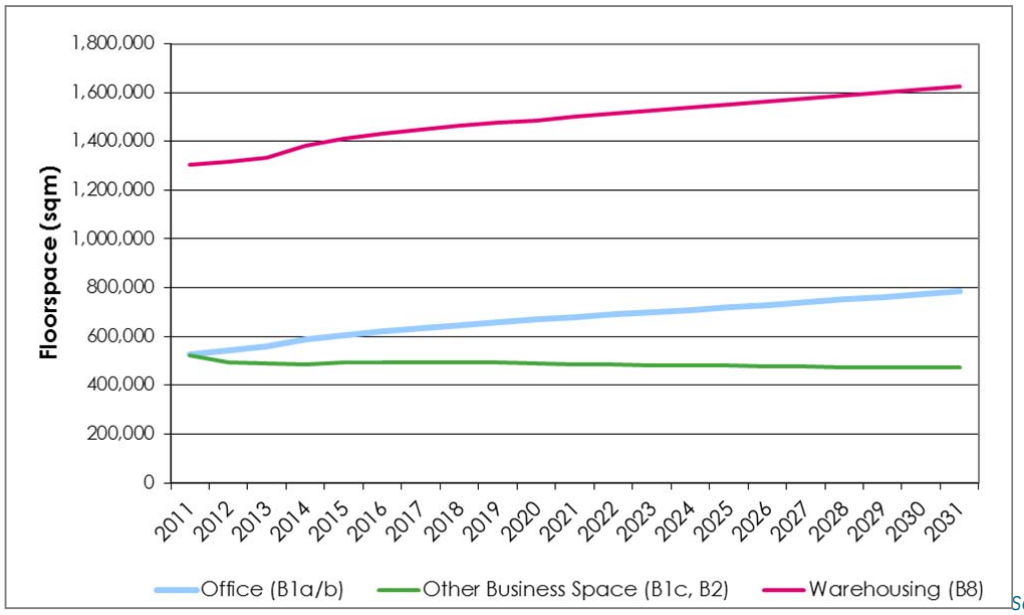
8.37 To translate the two base forecast models into floorspace requirements we use the following employment densities (in line with the HCA Density Guide Second Edition, 2010):

- B1a/b – 12 square metres per employee (NIA);
- B1c/B2 – 36 square metres per employee (GIA); and
- B8 – 85 square metres per employee (GEA).

8.38 Utilising these densities the floorspace requirements from the Experian Based Forecast are shown below.

[11] A dark store is a large warehouse/distribution operated for the purpose of fulfilling online shopping orders. They are most commonly used by large food retailers to cater for online grocery orders. They carry the same scale and range of goods as a usual supermarket but are not open to the public, accessed only by company employees who pick and pack each order ready for delivery.

Figure 8.3 – Experian Based Forecast Floorspace Requirements



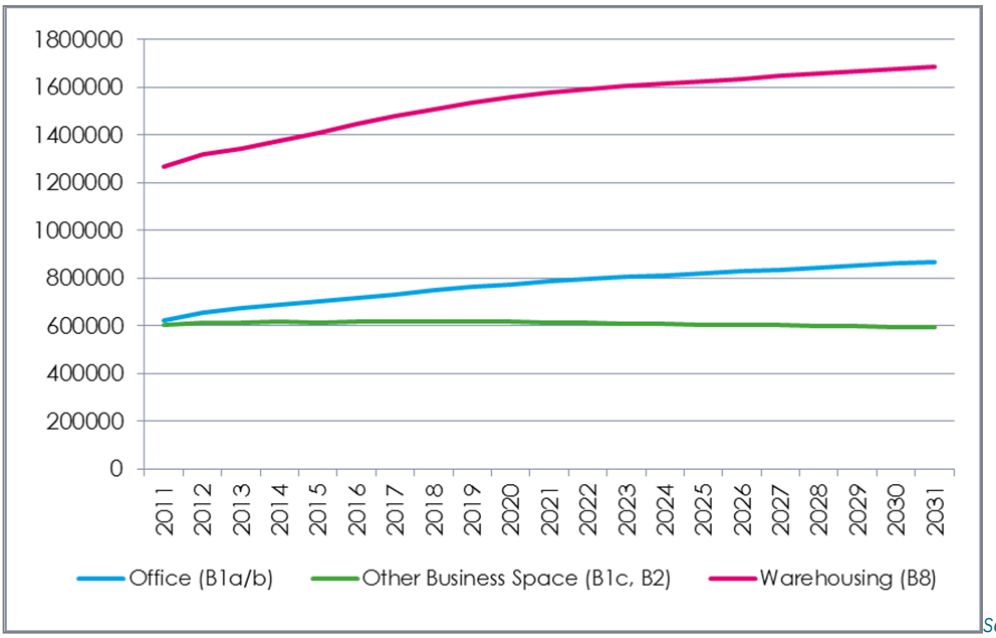
Source: Experian Business Strategies, GVA, 2014

8.39 The base forecast shown in Figure 8.3 estimates additional demand to 2031 of circa:

- 260,000 sqm of B1a/b floorspace;
- -53,000 sqm of B1c/B2 floorspace; and
- 320,000 sqm of B8 floorspace.

8.40 If we apply the same figures to the EEFM forecast, the following requirements are identified.

Figure 8.4 – EEFM Based Forecast Floorspace Requirements



Source: Cambridge Econometrics, GVA, 2014

8.41 The base forecast shown in Figure 8.4 estimates additional demand to 2031 of circa:

- 247,000 sqm of B1a/b floorspace;
- -11,000 sqm of B1c/B2 floorspace; and
- 420,000 sqm of B8 floorspace.

Contingency Allowance: Windfall and Market 'Churn'

8.42 In order for future employment forecasts to be based on more than economic growth 'predictions' and to better reflect the fluid nature of land allocations, the forecasting models makes two 'contingency allowances'.

8.43 The first contingency allowance is made to take into account the fact that a proportion of designated employment land will not be entirely used by B-Use-Class employment. This form of contingency allowance is referred to as an allowance for Windfall Losses. Land uses such as: recycling, waste management, combined heat and power plants and bus depots can, under certain circumstances and where appropriate, be located on employment land. Car related retail uses such as car showrooms, servicing and other car related activities are permitted in employment sites.

8.44 A significant part of the projected employment growth also arises from sectors which have traditionally not been located on B Class employment land such as healthcare, education, hotels and leisure.

8.45 Under specific circumstances and where appropriate, employment land might also be used as part of a more mixed-use scheme which would enable employment development to come forward on a proportion of it.

8.46 Further, with the extension of Permitted Development Rights (albeit only for three years initially) making the conversion of office premises to residential use more straightforward, there is the potential for an increase in the unexpected loss of employment floorspace. The opportunity for redevelopment and subsequent loss of floorspace under these extended rights is likely to become a more significant issue in the future. This will be a particular permanent risk if current plans to make the extension to PD rights permanent (which the government consulted on in 2014) are confirmed. At present no firm commitment has been made by the government but confirmation is expected "soon".

8.47 To estimate the amount of land that may be used for non-B class activities (and therefore account for a Windfall Loss), historic net losses of employment land to other uses such as housing and leisure as reported in the Council's Annual Monitoring Report have been used.

8.48 It is important that only land that is truly lost to B Class employment activity is included within the Windfall allowance rather than land which is transferred between B class land uses (i.e. land that changes from B2 activity to B8). To provide this estimate we have utilised the 'net' change from the Annual Monitoring Report (AMR). Where the net change has been negative (i.e. floorspace lost is greater than floorspace gained) we have included these in the Windfall estimate, where the opposite is true these are included within the 'Churn' allowance.

Table 8.3 - Allowance for Windfall Losses

	Office (sqm)	Industrial (sqm)	Warehouse (sqm)
2013/14	7,695	-	-
2012/13	-	2,959	-
2011/12	1,707	11,221	-
2010/11	-	4,353	-
2009/10	-	8,138	-
2008/09	-	6,143	4,494
2007/08	-	-	-
2006/07	-	1,599	-
Average Annual Loss	**1,175**	**4,302**	**562**

Source: Milton Keynes Council Annual Monitoring Reports, 2014[12]

8.49 As shown in Table 8.3 there have been minimal loss of employment space to other uses ("Windfall Losses") within the office and warehouse classes, however there have been larger losses within industrial. Projecting this average rate forward over the Plan Period we have identified an allowance for windfall of circa 121,000 sqm of floorspace.

8.50 This approach has its limitations, principally because it is backward looking and does not pick up future changes to how land will be used. This data is still used, however, with the proviso that it should be monitored each year and new figures considered to give a longer term projection of losses of employment land. This could have a considerable effect on future employment land needs, depending on employment land losses in each year.

8.51 The approach to estimating 'windfall loss' also does not allow an 'additional' consideration of the impact of changes to permitted development (PD) rights. The key challenge at this point in time is understanding the scale of impact within Milton Keynes, particularly given not all office space can be appropriately converted within the parameters set by PD rights. Therefore not all space is as attractive to residential developers and a 'blanket' allowance cannot be made.

8.52 Given that changes to PD rights only came into force in 2013 there is limited data to understand initial impacts. However, whilst planning permission is not required developers are

[12] Note: The windfall losses draw on data prepared by Milton Keynes Council. It is our understanding that 'losses' recorded in the AMR will include changes between B class uses (i.e. B1c to B1a). The combined approach to Contingency Allowances used here allows for the loss to be considered under Windfall, with a balancing 'gain' recorded under the Churn calculation. As such any shifts will be balanced across the two components.

required to submit a Prior Approval Notice to the planning authority, enabling them to 'track' changes that are occurring. Just 2 years after the legislation came into effect we are now seeing the first indicators of the impact of the change, with the Prior Approvals now providing some data to estimate the scale of the trend.

8.53 Between July 2013 and March 2015 there have been 35 Prior Approval Notifications submitted to the Council (23 for residential conversion of employment space) of these which, if delivered would see the loss of almost 18,000sqm of floorspace. Of this quantum of space five Prior Approval Notifications were refused, reducing the scale of impact by circa 6,500sqm but still resulting in a loss of circa 12,000sqm of employment floorspace.

8.54 Even with this initial data it is worth exercising a note of caution in extrapolating this into a future forecast given it only reflects a short period of time and therefore a long term trend cannot be established. The current permitted development rights are in place until 2019 but uncertainty remains as to whether these powers will be further extended. It is likely therefore, that in the period up to 2019, a number of land owners may be seeking to establish the development principle to protect their future options. It remains to be seen as to whether the stock will actually be converted and the impact that this will have on the existing capacity of B class employment space.

8.55 Therefore, whilst there is a need to monitor the impact of conversion as more time passes and data becomes available it would be inappropriate to forecast additional need on such time-limited data. It is recommended that the situation is reviewed once the initial 3 year period expires to begin to understand the longer term issues that may be created and identify appropriate remedial actions.

8.56 As well as making an allowance for unexpected losses of employment land, allowance is made for the fact that locational and premises needs of businesses change over time. This requires businesses to move. In other instances an existing business might cease its operations and a new business take over a site for redevelopment. For this to happen smoothly there is a need for a certain level of available vacant land. This type of demand has been called 'churn' demand or 'frictional vacancy'.

8.57 An allowance for 'churn' is calculated from the average annual construction rate of space within the Borough as recorded within the Annual Monitoring Report, as noted above this includes data for years where there has been a net increase in floorspace. The net annual 'gain' is shown in Table 8.4 below.

Table 8.4 - Allowance for Churn

	Office (sqm)	Industrial (sqm)	Warehouse (sqm)
2013/14	-	2,392	44,695
2012/13	38,848	-	10,634
2011/12	-	-	330
2010/11	1,368	-	28,683
2009/10	44,958	-	13,280
2008/09	35,612	-	-
2007/08	24,480	6,251	76,041
2006/07	1,958	-	11,105
Average Annual Gain	**18,403**	**1,080**	**23,096**

Source: Milton Keynes Council Annual Monitoring Reports, 2014

8.58 It typically takes two years to achieve a planning consent, site preparation and construction after a site has changed hands. For these reasons the annual net take-up of employment floorspace is multiplied by two to estimate the churn demand. This is, in effect, an allowance for the necessary frictional vacancy to allow the market and relocation chains to operate.

8.59 This allowance for churn, allows the commercial property market realities to be added to the baseline economic forecast.

Base Floorspace and Land Requirements

8.60 By bringing together the identified requirements for employment land that result from economic growth expectations with the requirements resulting from windfall and churn allowances we can calculate the total floorspace and land requirements for MK over the plan period.

8.61 The translation from floorspace to land requirements draws on a series of plot ratios which estimate the proportion of a site that would be developed for the identified uses. These ratios draw on DCLG guidance and our understanding of 'development industry standards':

- Office – 1.5.
- Industrial – 0.4.
- Warehouse – 0.4.

8.62 Both the industrial and warehouse ratios reflect the increased requirement from occupiers for large yard areas for loading unloading and also large parking areas.

8.63 The office ratio used within the base forecasts seeks to provide an 'average' development density between City Centre and 'out of town' provision along with an allowance for car

parking provision. Clearly office can (and has) been delivered at a higher density within CMK, the implications of this on land requirements will be tested in Phase 2 of this study.

Experian Based Forecast Requirements

8.64 Using the Experian based forecast as a basis for future planning would result in a requirement of 124 hectares of additional employment land to accommodate over 730,000sqm of floorspace.

Table 8.5 – Experian Based Forecast Land Requirement

	Floorspace Demand 2011 – 2031	Allowance for windfall losses	Allowance for Churn	Change in floorspace	Change in Land
Office	259,488	23,505	36,806	319,799	21
Other Business Space	-53,090	86,033	2,161	35,103	9
Warehouse	320,178	11,235	46,192	377,605	94
Total	**526,576**	**120,773**	**85,159**	**732,507**	**124**

Source: Experian Business Strategies, GVA, 2014

8.65 As shown above the majority of floorspace will be required within the warehouse and distribution sector, with an additional requirement of over 375,000sqm of new floorspace resulting in 94ha of land.

8.66 The forecast also identifies a future requirement of circa 320,000sqm of new office floorspace, requiring 21ha of land, although as noted this could be delivered at a higher density within CMK.

8.67 Finally, there is a smaller requirement for 'other business space' (i.e. space for industrial activity) however, this is solely driven by a need to offset losses of space to other activities and therefore may over-estimate future need.

EEFM Based Forecast Requirements

8.68 Using the EEFM based forecast as a basis for future planning would result in a requirement of 159 hectares of additional employment land to accommodate over 860,000 sqm of floorspace.

Table 8.6 – EEFM Based Forecast Land Requirement

	Floorspace Demand 2011 – 2031	Allowance for windfall losses	Allowance for Churn	Change in floorspace	Change in Land
Office	247,184	23,505	36,806	307,495	20
Other Business Space	-10,687	86,033	2,161	77,506	19
Warehouse	419,274	11,235	46,192	476,701	119
Total	**655,771**	**120,773**	**85,159**	**861,703**	**159**

Source: Cambridge Econometrics, GVA, 2014

Note: Figures for Land requirement may not sum due to rounding

8.69 As shown above the majority of floorspace will be required within the warehouse and distribution sector, with an additional requirement of over 475,000 sqm of new floorspace resulting in 119 ha of land.

8.70 The forecast also identifies a future requirement of circa 310,000 sqm of new office floorspace, requiring 20ha of land, although as noted this could be delivered at a higher density within CMK.

8.71 A similar land requirement is for 'other business space' (i.e. space for industrial activity). The EEFM forecasts a much smaller contraction in employment within these sectors over the Plan:MK period therefore demand remains driven solely by a need to offset losses of space to other activities and therefore may over-estimate future need.

8.72 Therefore, the analysis so far suggests that in theory, the borough of Milton Keynes appears to have sufficient land for office space and other business space in quantitative terms, but does not have sufficient land for warehousing space in quantitative terms. The Phase 2 Report will draw upon this in greater depth.

9. Emerging Quantitative Conclusions

9.1 This Phase 1 Technical Analysis Interim Report has drawn together the key findings from the baseline stage of work for this Economic Growth and Employment Land Study.

9.2 We summarise below the key conclusions from the work to date under the main section headings:

Socio-Economic Baseline

9.3 Milton Keynes is the fastest growing city in the UK and has seen a population increase of circa 20% between 2001 and 2011. It has a young population with a high proportion of people under the age of 16 (22%). Notwithstanding this, at least 66% of its population are of working age. This is reflected in its high economic activity rate of 76%, proportionately higher than the regional context.

9.4 About 49% of its total population is in employment and its economically active rate is 68%, which is proportionately higher than regional and national averages. Although this is a good sign unemployment rates have increased in Milton Keynes during the last decade by 3.3% which is higher than regional and national averages. Milton Keynes also has higher rates of claimant count that worsened during the recession. Milton Keynes' population has high skill levels with at least 82% having some form of qualification and a high proportion having level 4 qualifications.

9.5 There is a cluster of sector strength in Financial Services, IT Consulting, Security Related Services, Transport and related supply chain activities and Food and Beverage manufacturing. This is also reflected in the GVA contribution trends which indicates that Distribution and transport (30%); Public administration (14%); Business services (12%); IT (10%) and Finance (5%); and Real estate activities (10%) as key drivers of the economy.

9.6 MK has a containment rate of 64% of jobs for its employed population. The rest of its workforce travels to the neighbouring boroughs of Central Bedfordshire, Bedford, Aylesbury Vale and Central London. Milton Keynes has relatively strong workplace based earning with average earnings of those who commute in to Milton Keynes being higher than those of resident workers.

9.7 In terms of economic performance Milton Keynes was ranked highest among all the 11 local authorities in the South East Midlands LEP and was among the top 15% most competitive localities in the UK out of all the local authorities in the UK ranked by UKCI.

9.8 Milton Keynes has shown significantly stronger business growth trends between 2004 and 2011 compared with the regional and national average in 2011. About 88% of the businesses in the borough are micro units with a maximum of 10 employees. Despite this the City has a high proportion of large enterprises in Milton Keynes. Business survival rates in Milton Keynes are quite poor with only 42% of businesses surviving for a 5 year period compared with the South East (47.3%) and national average (44.4%).

Neighbours Policy Aspirations

9.9 MK works closely with its neighbouring Local Authorities under the 'Duty to Co-operate' banner.

9.10 The key issues of relevance to Milton Keynes neighbours are the balance between employment/housing land, commuting patterns, economic growth sectors, cross boundary infrastructure provision and demand forecasting as follows:

- **Employment/housing land –** the integration of both the housing and employment needs and availability assessments to deliver economic growth will be critical particularly when neighbouring authorities consider any unmet objectively assessed needs for housing;
- **Commuting -** it would be useful for the Study to provide more information about existing commuting patterns and the characteristics of commuters and their jobs. This could also be supported by trend and policy scenarios of how this is expected to change in the future;
- **Growth sectors –** minimising competition in key growth sectors and the identification of the unique selling points of each individual local authority area are key drivers to ensure that market share is maintained;
- **Infrastructure -** more attention should be paid to infrastructure investment synergies across boundaries to mutual benefit; and
- **Forecasting –** a level of consistency is needed between forecasting methodologies with a standard approach required to gain a common understanding of the cross boundary implications of future demand and supply for jobs and employment space.

Property Market Analysis

9.11 The MK property market is dominated by leasehold floorspace with a lot of this dating back to the 1970s and 1980s when the new town was being developed. Much of this stock is no longer 'fit for purpose' nor does it meet the needs of the modern occupiers.

9.12 Of the available leasehold floorspace there is a greater proportion of office space compared to industrial floorspace.

9.13 Asking rents for secondary office properties are around £118 psm on average throughout MK. There is a considerable amount of vacant stock of this type, particularly in CMK.

9.14 Grade A office rental values are on average around £151 psm outside CMK, rising to between £16.00-20.00 psf within the city centre.

9.15 There is significantly less industrial and office freehold accommodation currently on the market but where opportunities exist there are more industrial properties available for freehold tenure than office properties.

9.16 Over the last five years, take up has exceeded 92,903 for both leasehold office and industrial floorspace with office accommodation seeing, on average, the greatest take up of circa 130,102sqm p.a. as opposed to industrial at circa 92,977p.a.

9.17 As we'd expect, over a similar time period there have been a smaller number of freehold transactions across both property market sectors. The average unit size sold in freehold transactions is greater than that in leasehold deals. This supports our understanding that there remains owner occupier demand for freehold accommodation of a larger size.

Employment Land Supply

9.18 The supply of employment land in Milton Keynes consists of three key components:

- **Existing Employment Sites –** mixture of existing industrial estates and office parks that contribute to the employment land supply in Milton Keynes;
- **Proposed Sites –** within or bordering existing employment sites that may be developed and contribute to meeting future employment land requirements in Milton Keynes; and
- **Potential Sites –** new undeveloped land that may be developed and contribute to meeting future employment land requirements in Milton Keynes.

9.19 The review of these components included both quantitative and qualitative elements.

9.20 The quantum of sites split between the existing employment sites, proposed sites and potential sites is shown in Table 8.5 below.

Table 9.1 – Overview of Employment Land Supply in Milton Keynes

	Existing Employment Sites	Proposed Sites	Potential Sites
Supply (hectares)	988	36.86	160.65
TOTAL	**1,185.51 hectares**		

Source: GVA, 2014.

9.21 This clearly shows that the Borough has a significant amount of land supply within these three categories.

9.22 We highlight below the key conclusions from each of the types of employment land supply that we considered.

Existing Employment Sites

9.23 **Market Assessment** – the majority of existing stock (99%) within Milton Keynes is ranked as being of good or excellent quality. 40% of sites representing 395.5 ha is identified as excellent quality and 59% sites representing 584.92 ha is identified as good quality.

9.24 **Physical Assessment** – the majority of existing stock within Milton Keynes is ranked as being of good or excellent quality. 52% of sites representing 513.84 ha is identified as excellent quality and 46% of sites representing 455.65 ha is identified as good quality. Only 2% of sites score an average ranking.

9.25 **B Class Employment Uses** – there is a broad mix of B class employment use within Milton Keynes. The majority of employment land provides a mix of office, industrial and warehouse/distribution uses (B1, B2 and B8) in a single setting (13 sites) or industrial and warehouse/distribution use (B2 and B8) in a single setting (9 sites).

9.26 **Vacancies** – Our employment sites assessment indicates that 29 sites (63%) are fully occupied and 17 sites (37%) have either vacant units, plots or land advertised.

Proposed Sites

9.27 **Market Assessment** – the majority of proposed employment sites ranked as being good quality. 22 of the 27 sites received this ranking, representing 29.08 ha of land, which is 80% of the total supply of proposed sites.

9.28 **Physical Assessment** – the majority of proposed employment sites ranked as being excellent quality. 22 of the 27 sites received this ranking, representing 31.42 ha of land, which is 85% of the total supply of proposed sites.

9.29 As there appears to be limited expansion space in existing employment sites, it will be necessary for the potential sites to provide supply to meet market demand.

Potential Sites

9.30 **Market Assessment** – the greatest proportion of the potential sites within Milton Keynes is ranked as being of good quality (49%), followed by stock which is ranked as excellent quality (45%).

9.31 **Physical Assessment** – the greatest proportion of the potential sites within Milton Keynes is ranked as being of excellent quality. 33 sites representing 147.47 ha of land and representing 92% of the total area are identified as excellent quality.

9.32 **B Class Employment Uses** – As these are potential sites, they all comprise vacant land. As the sites are independent to existing employment sites, they could come forward as any type of 'B class' employment use.

Stakeholder Engagement

9.33 GVA has held two workshops with key stakeholders with the first focussing on the economic baseline evidence base, and the second focussing on the employment land supply and property market.

9.34 In addition to this we have engaged with local agents active in the property market, a range of public and private sector stakeholders with interest in the outcome of the study and have given all Local Authorities that neighbour Milton Keynes the opportunity to engage with the process.

9.35 We summarise below the key findings from this engagement:

Table 9.2 – The Economic Baseline

Skills
• Need to balance skills to meet those required for knowledge based business growth; • Linked to the lack of 'traditional' Higher Education (HE) institutions in Milton Keynes; • Current mis-match between workforce skills and business needs; • MK both exports and imports higher skilled workers; and • Overcoming skills issues was seen as the key challenge to economic success.

Higher Education (HE)

- It could take up until the end of the plan period (2031) to see the benefits to the economy as a result of a University presence – is it worth it?;
- Could the existing HE provision 'do more' in generating business growth?;
- The opportunity to work with Cranfield could drive growth in MK linked to engineering research; and
- Is there an alternative to a University as a growth driver?

Knowledge based economy drivers

- More locally relevant and organic approaches such as a Science Park in the City, the Smart City initiative and innovation driven by existing businesses was considered a more appropriate approach for MK;
- The transport sector can be captured as an alternative knowledge economy driver, particularly if linked to opportunities for pilot, trial or demonstration projects within the City; and
- External links via Cranfield provide opportunities.

Travel to Work

- MK is losing skills to other districts and there is a reliance on labour from other areas;
- Economically this was not seen as a disadvantage but more a sign of the role of MK in the sub-region and its growing maturity as an economic hub;
- In planning and sustainability terms a greater balance between population and employment would be beneficial; and
- Further analysis of Travel to Work data could be undertaken to understand the sectoral and occupational split of those who are travelling outside MK.

Property Values

- Impact and implications for the delivery of new space and the refurbishment of existing space was an important consideration for future economic activity;
- Inability to viably deliver good quality new stock will impact the quality of businesses attracted to MK; and
- A lack of good quality new stock will potentially deter higher value activity who seek Grade A stock.

Retail Sector

- The impact that changes in consumer habits will have on the economy were considered.

Small businesses • The high failure rate after 4/5 years was recognised; • The start-up and small business community in the longer term is seen as a major economic opportunity, particularly in terms of increasing employment density within sites; and • Appropriate workspace would be needed to include small start-up facilities but also larger 'move on' spaces i.e. a Science Park and its potential linkages to either private sector research based organisations/the HE sector.
Socio-economic Indicators • Regional comparisons may not show MK in its true context and the study should include more comparator cities like Reading, Swindon, Brighton, Peterborough and Guildford as 'benchmarks'.

Source: GVA, 2014.

Table 9.3 – Employment Land Supply/Property Market

Parking • Property agents feel that the lack of available parking in CMK is a deterrent to potential occupiers; • The cost is considered to be too high; • There is an undersupply of parking spaces in the 'business zone' during the week and in the 'retail zone' during the weekend; • There is also no overspill or out-of-town parking available, and the park-and-ride facility is underutilised.
Market and competing locations • Milton Keynes has a three tier market; • Luton and Northampton were cited as being competing locations, despite having lower rental levels; • Insufficient new 'Grade A' office stock in CMK; • No clear employment land identity; • Incentives are needed i.e. reduced business rates and service charges to encourage investment, and to facilitate partnership working; • Developers are not currently considering design and build opportunities; and • Strong, active and vocal group who oppose any regeneration that moves away from the 1970's new town vision.

Suitability of employment land and property

- The industrial stock is out-of-date and 'tired';
- The secondary industrial stock lacks a yard, external open space and has low eave heights which are not suitable for modern occupiers.
- Over supply of small units around the 5,000 sqft size;
- Many employment estates are identical and with the exception of Magna Park, none stand out as having a unique offer in terms of specifications;
- Agents stated that modern occupiers seek units with a mix of 90% industrial/10% office floorspace;
- Major corporates prefer freehold ownership;
- Only two Grade A office developments with the majority of others dating back to the 1970s and 1980s and are becoming tired and in need of refurbishment;
- Out of centre office parks are private sector led and need additional amenities;
- Occupiers don't need to be located in CMK provided the right infrastructure and amenities are in place;
- Broadband provision is better outside of CMK;
- Limited office stock below 1,000 sqft; and
- There is a need to target SME's and provide incubation space.

Proposed and potential sites

- Some proposed sites will only be brought forward by the current occupier as expansion space and are unlikely to be available to the wider market; and
- Some potential sites are constrained and may be more suitable for alternative forms of development, such as residential.

Source: GVA, 2014.

Forecast Demand Scenario

9.36 Given the relationship between the Milton Keynes economy and its neighbours it is important that the evidence base for Plan:MK provides a robust understanding of economic potential that is consistent with the neighbouring areas.

9.37 Therefore, as a starting point for the future growth forecasts we have prepared two 'base' positions utilising both the East of England Forecasting Model EEFM and Experian forecasts as shown in Table 8.7 below:

Table 9.4 – Demand Based Forecast Land Requirements

	Experian Forecast Change in Land	EEFM Forecast Change in Land
Office	21	20
Other Business Space	9	19
Warehouse	94	119
Total	**124 hectares**	**159 hectares**

Source: Experian Business Strategies, Cambridge Econometrics, GVA, 2014

Note: Totals may not sum due to rounding of individual use class requirements within the table.

9.38 As shown above the majority of floorspace (under both forecasts) will be required within the warehouse and distribution sector.

9.39 The forecasts also identify a future requirement of 20/21ha of land for office use, although this could be delivered at a higher density within CMK and so reduce the overall land take.

9.40 Finally, there is a requirement for 'other business space' which ranges between 9 and 19 hectares (i.e. space for industrial activity) however, this is solely driven by a need to offset losses of space to other activities and therefore may over-estimate future need. The EEFM forecast shows a much smaller contraction in employment within these sectors with demand driven solely by a need to offset losses of space to other activities, therefore future need may be over-estimated.

9.41 The outcomes of this Phase 1 technical analysis provide a robust evidence base to inform the Phase 2 Delivery Strategy which will include the development of the Employment Land Strategy for Milton Keynes.

Appendix A Employment Sites Assessment Matrix

Site Reference Number	Site Name	Site Address	Settlement	Grid Reference	Size (ha)	Greenfield/Brownfield	Nature of Existing Tenants	Access	Public Transport	Prominence	Local Amenities	Character of Area	Building Age	Quality of buildings	Economic Constraints	Strategic Location	Market Attractiveness	Total Score	Market Score	Physical Score	Total Ranking	Market Ranking	Physical Ranking	Use Class	Information	Location	Vacancies
EXISTING EMPLOYMENT SITES																											
E1	Atterbury Existing Employment Area	Fairbourne Drive	Atterbury	15E	1.55	2	3	3	4	3	2	4	5	5	5	3	2	39	26	13	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	None
E2	Brinklow Industrial Estate	Brudenell Drive	Binklow	17H	36.91	2	5	5	3	4	1	5	3	5	5	3	3	42	29	13	Excellent	Good	Excellent	B8	Warehouse/Distribution Units	Urban	Vacant units advertised
E3	Blakelands Industrial Estate	Tanners Drive	Blakelands	12B	16.73	2	3	4	4	4	4	3	3	3	4	3	2	37	27	10	Good	Good	Good	B1 & B2	Office and Industrial Units	Urban	Vacant units advertised
E4	Bleak Hall Industrial Estate	Chesney Wold	Bleak Hall	11K	27.74	2	4	4	4	4	4	4	4	4	4	3	3	42	30	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E5	Denbigh Hall Industrial Estate	Denbigh Hall Drive	Bletchley	11L	4.96	2	4	4	4	4	4	4	5	5	5	4	3	46	32	14	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	None
E6	Bradville Industrial Estate	Blundells Road	Bradville	9D	5.75	2	3	4	4	3	3	3	4	4	4	3	2	37	25	12	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E7	Bradwell Abbey Industrial Estate	Alston Drive	Bradwell Abbey	7F	15.64	2	3	4	4	4	3	4	4	3	4	3	2	38	27	11	Good	Good	Good	B2	Industrial units	Urban	Vacant units advertised
E8	Caldecotte Lake Business Park	Caldecotte Lake	Caldecotte	16M	10.65	2	4	4	3	3	1	3	5	5	5	3	3	39	25	14	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	Vacant sites
E9	Crownhill Business Centre	Vincent Avenue	Crownhill	7F	21.27	2	4	4	5	4	4	4	4	4	5	3	2	43	31	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units adervtised
E10	Denbigh East Employment Area	Bond Avenue	Denbigh East	13M	14.50	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E10	Denbigh West Employment Area	Denbigh Road	Denbigh West	14M	38.13	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E11	Fenny Stratford Employment Area	Simpson Road	Fenny Stratford	14N	4.85	2	2	2	4	1	4	3	3	2	3	2	1	27	20	7	Average	Average	Average	B2	Industrial units	Urban	Vacant sites
E12	Fox Milne Industrial Estate	Opal Drive	Fox Milne	15E	14.80	2	3	4	4	3	2	4	4	5	5	3	1	38	25	13	Good	Good	Excellent	B1 and B2	Office and Industrial Units	Urban	Vacant units advertised
E13	Granby Trade Park	Peverel Drive	Granby	12L	5.10	2	4	4	3	3	5	4	3	3	4	4	3	40	30	10	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E14	Kents Hill Park	Timbold Drive	Kents Hill Park	15H	8.15	2	3	4	1	3	1	4	5	5	5	3	2	36	22	14	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	Vacant units and land advertised
E15	Kiln Farm Industrial Estate	Pitfield	Kiln Farm	5F	50.90	2	4	4	4	4	3	3	4	4	4	3	2	39	27	12	Good	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E16	Kingston Business Park	Chippenham Drive	Kingston	17G	55.39	2	4	5	4	5	4	4	5	5	5	4	3	48	33	15	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	Vacant units
E17	Knowlhill Employment Area	Davy Avenue	Knowlhill	10J	29.98	2	4	4	3	3	4	5	4	4	5	3	2	41	29	12	Excellent	Good	Good	B1 and B2	Office and Industrial Units	Urban	Vacant units and land advertised
E18	Linford Wood Business Centre	Rockingham Drive	Linford Wood	11E	38.68	2	4	4	4	4	4	4	4	4	4	3	2	41	29	12	Excellent	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E19	Magna Park	Fen Street	Magna Park	19G	110.04	2	4	4	5	4	4	4	4	4	5	3	2	43	31	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units adervtised
E20	Mount Farm Auckland Park	Mount Avenue	Mount Farm	14L	20.33	2	4	4	3	4	1	5	3	5	5	3	3	40	28	12	Excellent	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units and land advertised
E21	Mount Farm Industrial Estate	Dawson Road	Mount Farm	13L	33.90	2	5	4	3	4	1	5	4	4	5	3	3	41	29	12	Excellent	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E22	Newport Pagnell Business Park	Tickford Street	Newport Pagnell	4C	4.81	2	4	3	3	3	3	3	3	3	4	2	1	32	23	9	Good	Good	Average	B1 & B2	Office and Industrial Units	Urban	None
E23	Newport Pagnell Interchange Park	Renny Park Road	Newport Pagnell	6B	22.63	2	4	4	4	5	4	4	5	5	4	3	3	45	31	14	Excellent	Excellent	Excellent	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E24	Nothfield Drive Industrial Estate	Northfield Drive	Northfield	15E	23.26	2	4	4	4	4	4	3	3	3	4	3	2	38	28	10	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E25	Old Wolverton Industrial Estate	Colts Holm Road	Old Wolverton	6C	57.60	2	3	3	3	2	3	5	5	5	5	3	1	38	25	13	Good	Good	Excellent	B2	Industrial units	Rural	None
E26	Yardley Road Industrial Estate	Yardley Road	Olney	2C	9.32	2	3	4	1	2	2	3	4	4	5	3	2	33	21	12	Good	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E27	Redmoor Employment Area	Wimblington Drive	Redmoor	12K	13.59	2	3	5	5	4	5	5	3	2	3	1	3	39	29	10	Good	Good	Good	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
E28	Rooksley Employment Area	Precedent Drive	Rooksley	9G	14.17	2	2	5	4	2	3	5	3	3	5	3	2	37	26	11	Good	Good	Good	B1 and B2	Office and Industrial Units	Urban	None
E29	Shenley Wood Employment Area	Chalkdell Drive	Shenley Wood	8K	13.37	1	4	4	4	4	4	3	5	4	4	4	1	41	28	13	Excellent	Good	Excellent	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
E30	Snelshall East Industrial Estate	Pendeen Crescent	Snelshall East	8P	6.30	2	4	5	3	5	1	3	5	4	4	3	2	39	25	14	Good	Good	Excellent	B8	Warehouse/Distribution Units	Rural	None
E31	Snelshall West Industrial Estate	Steinbeck Crescent	Snelshall West	8P	14.46	2	4	5	3	5	1	3	5	4	4	3	2	39	25	14	Good	Good	Excellent	B8	Warehouse/Distribution Units	Rural	None
E32	Stacey Bushes Industrial Estate	Erica Road	Stacey Bushes	7E	8.55	2	3	4	4	4	3	4	4	3	4	3	2	38	27	11	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E33	Stonebridge Employment Area	Fingle Drive	Stonebridge	7D	11.35	2	3	4	5	3	5	5	4	5	5	3	2	44	31	13	Excellent	Excellent	Excellent	B2	Industrial units	Urban	None
E34	Tillbrook Industrial Estate	Bradbourne Drive	Tillbrook	16L	43.51	2	5	5	5	5	3	5	5	5	5	4	3	50	35	15	Excellent	Excellent	Excellent	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E35	Tongwell Industrial Area	Michigan Drive	Tongwell	13C	56.77	2	5	5	3	4	1	5	4	4	5	3	3	42	29	13	Excellent	Good	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E36	Yeomans Drive Industrial Estate	Yeomans Drive	Tongwell	12C	22.26	2	5	5	3	4	1	5	4	4	5	3	3	42	29	13	Excellent	Good	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E37	Walton Employment Area	Walton Drive	Walton	15J	9.17	2	4	4	3	3	4	4	5	4	4	3	1	39	26	13	Good	Good	Excellent	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
E38	Water Eaton Industrial Estate	Barton Road	Water Eaton	13P	8.85	2	3	3	3	4	4	3	3	3	4	3	1	34	25	9	Good	Good	Average	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E39	Wavendon Gate Business Park	Walton Road	Wavendon Gate	17J	10.13	2	5	4	3	4	3	4	5	5	5	3	3	44	30	14	Excellent	Excellent	Excellent	B1 and B8	Office and Warehousing/Distribution Units	Urban	None
E40	West Ashland Employment Area	Thornbury	West Ashland	13L	3.58	2	5	5	5	5	5	5	5	5	5	5	3	53	38	15	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	None
E41	Willen Lake	Willen Lake	Willen Lake	13E	2.73	2	3	3	1	1	1	2	4	4	3	1	1	24	13	11	Average	Average	Good	B8	Warehouse/Distribution Units	Urban	None
E42	Winterhill	Snowdon Drive	Winterhill	10H	7.97	2	4	5	3	4	4	5	3	3	4	3	2	40	29	11	Excellent	Good	Good	B1 and B2	Office and Industrial Units	Urban	Vacant land advertised
E43	Wolverton Rail Freight Terminal	Stratford Road	Wolverton	6D	6.80	2	4	4	3	4	4	5	5	4	4	3	1	41	28	13	Excellent	Good	Excellent	B8	Warehouse/Distribution Units	Urban	None
E44	Wolverton Mill Industrial Estate	Featherstone Road	Wolverton Mill	4E	23.70	2	3	4	3	4	2	4	4	5	4	3	2	38	25	13	Good	Good	Excellent	B1 and B2	Office and Industrial Units	Urban	None
E45	Wymbush Industrial Estate	Garamonde Drive	Wymbush	7G	27.17	1	4	4	4	4	2	5	4	5	5	3	3	43	30	13	Excellent	Excellent	Excellent	B2	Industrial units	Urban	None
PROPOSED SITES																											
E8A	Site A	Monellan Grove	Caldecotte	15M	0.61	2	4	4	3	3	1	3	5	4	5	3	3	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E8B	Site B	Caldecotte Drive	Caldecotte	16M	1.92	2	4	4	3	3	1	3	5	4	5	3	3	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E9A	Site A	Vincent Avenue	Crownhill	7F	1.19	1	4	4	5	4	4	4	5	4	5	3	2	44	31	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
E10A	Site A	Third Avenue	Denbigh West	13M	2.66	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
E10B	Site B	Third Avenue	Denbigh West	13M	0.70	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
E12A	Site A	Opal Drive	Fox Milne	14F	0.83	2	4	3	4	2	2	4	5	4	3	3	1	35	23	12	Good	Good	Good	NA	Vacant land	Urban	Available plot
E14A	Site A	Timbold Drive	Kents Hill Park	15H	5.48	2	4	4	1	3	1	4	5	4	3	3	2	34	21	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E15A	Site A	Tilers Road	Kiln Farm	5G	0.20	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17A	Site A	Kelvin Drive	Knowlhill	10K	2.37	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17B	Site B	Roebuck Way	Knowlhill	10J	1.27	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17C	Site C	Roebuck Way	Knowlhill	10J	1.64	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17D	Site D	Davy Avenue	Knowlhill	10J	0.21	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17E	Site E	Murdoch Court	Knowlhill	9J	1.93	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18A	Site A	Sunrise Parkway	Linford Wood	10E	0.40	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18B	Site B	Breckland	Linford Wood	10D	1.35	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18C	Site C	Breckland	Linford Wood	10E	0.62	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E20A	Site A	Auckland Park	Mount Farm	14L	1.94	2	4	4	3	4	1	5	4	4	5	3	3	40	28	12	Excellent	Good	Good	NA	Vacant land	Urban	Available plot
E25B	Site B	Colts Holm Road	Old Wolverton	6C	0.48	2	4	3	3	2	3	5	5	4	4	3	1	37	25	12	Good	Good	Good	NA	Vacant land	Rural	Available plot
E26A	Site A	Yardley Road	Olney	2C	2.71	2	4	4	1	2	2	3	5	4	5	3	2	35	22	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E35A	Site A	Michigan Drive	Tongwell	14C	0.49	2	4	5	3	4	1	5	5	4	5	3	3	42	28	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E42A	Site A	Snowdon Drive East	Winterhill	10J	0.15	2	4	5	3	3	4	5	3	1	3	3	2	36	27	9	Good	Good	Average	NA	Vacant land	Urban	Available plot
E42B	Site B	Snowdon Drive	Winterhill	10H	0.75	2	4	5	3	3	4	5	5	4	3	3	2	41	27	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E43A	Site A	McConnell Drive	Wolverton	7D	2.56	2	4	4	3	4	4	5	5	4	4	3	1	41	28	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E44A	Site A	High Park Drive	Wolverton Mill	4D	0.70	1	4	4	3	4	2	4	5	4	3	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E44B	Site B	Featherstone Road	Wolverton Mill	4E	0.47	1	4	4	3	4	2	4	5	4	3	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E44C	Site C	Featherstone Road	Wolverton Mill	4E	2.04	1	4	3	2	2	2	3	5	4	3	1	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Available plot
E45A	Site A	Garamonde Drive	Wymbush	7F	1.19	1	4	4	4	4	2	5	5	4	3	3	3	41	28	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
POTENTIAL SITES																											
P3	Land at Blakelands	Wolverton Road	Blakelands	11A	3.36	1	4	5	5	5	5	4	5	4	5	4	3	49	35	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P46	Land at Brook Furlong	Trafalgar Drive	Booklands	16D	6.70	1	4	5	5	5	1	5	5	4	5	4	2	45	31	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P47a	Land at Campbell Park	Enterprise Lane	Campbell Park	12F	0.90	1	4	4	3	1	1	1	5	4	1	2	1	27	14	13	Average	Average	Excellent	NA	Vacant land	Urban	Vacant land
P47b	Land at Campbell Park	Overgate	Campbell Park	12F	0.19	1	4	2	3	2	1	1	5	4	3	1	1	27	16	11	Average	Poor	Good	NA	Vacant land	Urban	Vacant land
P47c	Land at Campbell Park	Overgate	Campbell Park	13F	0.57	1	4	3	3	1	2	1	5	4	3	1	1	28	16	12	Average	Poor	Good	NA	Vacant land	Urban	Vacant land
P47d	Land at Campbell Park	Eskan Court	Campbell Park	12E	0.88	1	4	4	3	4	1	2	5	4	3	2	2	34	21	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P47e	Land at Campbell Park	Melville Street	Campbell Park	12E	2.11	1	4	4	3	2	1	1	5	4	5	2	1	32	19	13	Good	Average	Excellent	NA	Vacant land	Urban	Vacant land
P47f	Land at Campbell Park	Skeldon Gate	Campbell Park	11F	1.00	1	4	3	3	2	1	1	5	4	4	2	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Vacant land
P48a	Site in CMK	South Tenth Street	CMK	11G	0.65	2	4	4	4	5	5	3	5	4	4	2	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P48b	Site in CMK	Lower Tenth Street	CMK	11G	1.03	2	4	4	5	4	5	4	5	4	4	2	2	43	30	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P48c	Site in CMK	South Seventh Street	CMK	11G	0.38	2	4	3	4	3	5	5	5	4	4	2	2	41	29	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
P48d	Site in CMK	South Eighth Street	CMK	11G	0.42	2	4	3	4	4	5	5	5	4	4	2	1	41	29	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
P48e	Site in CMK	Avebury Boulevard	CMK	10G	0.81	2	4	4	5	4	5	3	5	4	5	2	3	44	31	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P48f	Site in CMK	Lower Fourth Street	CMK	10G	0.42	2	4	3	5	4	5	5	5	4	4	2	2	43	31	12	Excellent	Excellent	Good	NA	Vacant land	Urban	Vacant land
P48g	Site in CMK	South Second Street	CMK	10H	9.65	2	5	5	5	5	5	4	5	4	4	3	3	48	34	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P19	Land to the East of Magna Park	Land to the East of Magna Park	Magna Park	10G	34.52	1	4	5	5	5	4	4	5	4	4	4	3	47	33	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P18a	Land at Linford Wood	Rockingham Drive	Linford Wood	11D	1.37	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P18b	Land at Linford Wood	Rockingham Drive	Linford Wood	11E	1.32	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P15a	Land near Kiln Farm	Watling Street	Kiln Farm	6H	9.51	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P15b	Land near Kiln Farm	Watling Street	Kiln Farm	5G	7.33	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P49	Land at Pineham	Pineham	Pineham	15D	10.85	1	4	5	5	5	1	5	5	4	5	4	2	45	31	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P27	Land at Redmoor	Wimblington drive	Redmoor	12L	1.68	1	4	5	5	4	5	5	5	4	3	1	3	44	30	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P28	Land at Rooksley	Deltic Avenue	Rooksley	8G	1.28	1	4	5	4	2	3	5	5	4	4	3	2	41	27	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29a	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	8K	2.96	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29b	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	8K	2.95	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29c	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	7K	3.49	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29d	Land at Shenley Wood	Foxcover Road	Shenley Wood	7L	2.3	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29e	Land at Shenley Wood	Merlewood Drive	Shenley Wood	7L	1.19	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P30a	Land at Snelshall East	Pendeen Crescent	Snelshall East	9N	3.28	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant Land
P30b	Land at Snelshall East	Pendeen Crescent	Snelshall East	9P	2.76	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant Land
P31a	Land at Snelshall West	Steinbeck Crescent	Snelshall West	7P	3.00	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant land
P31b	Land at Snelshall West	Steinbeck Crescent	Snelshall West	8P	1.03	1	4	5	3	5	1	3	5	4	5	3	2	40	26	14	Excellent	Good	Excellent	NA	Vacant land	Rural	Vacant land
P31c	Land at Snelshall West	Steinbeck Crescent	Snelshall West	8P	1.25	1	4	5	3	5	1	3	5	4	5	3	2	40	26	14	Excellent	Good	Excellent	NA	Vacant land	Rural	Vacant land
P37	Land at Walton	Groveway	Walton	15K	9.48	1	4	4	3	3	4	4	5	4	3	3	1	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P39	Land at Wavendon Gate	Ortensia Drive	Wavendon Gate	17H	10.83	1	4	5	3	4	1	4	5	4	4	3	2	39	25	14	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P40	Land at West Ashland	Thornbury	West Ashland	13L	2.85	1	4	5	5	5	5	5	5	4	5	5	3	51	37	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P54	Land at West Bletchley	Bletchley Road	West Bletchley	11O	4.83	2	4	1	2	1	1	2	5	4	2	1	1	24	14	10	Average	Average	Good	NA	Vacant land	Urban	Vacant land
P41	Land at Willen Lake	Brickhill Street	Willen Lake	13E	1.05	1	4	4	4	3	2	3	5	4	4	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P50	Land at Woburn Sands	Station Road	Woburn Sands	1C	1.25	2	4	3	3	1	4	2	5	4	2	1	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Vacant land
P44a	Land at Wolverton Mill	Harnet Drive	Wolverton Mill	4D	1.91	1	4	4	3	3	2	4	5	4	3	3	2	37	24	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P44b	Land at Wolverton Mill	Harnet Drive	Wolverton Mill	4E	3.19	1	4	4	3	3	2	4	5	4	3	3	2	37	24	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P51	Land at Atterbury	Tongwell Street	Atterbury	15F	3.75	1	4	3	3	4	2	3	5	4	4	3	2	37	25	12	Good	Good	Good	NA	Vacant land	Urban	Vacant land
P52	Land at Fishermead	Gurnards Avenue	Fishermead	12G	0.37	1	4	3	5	2	5	4	5	4	3	2	3	40	28	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
REMOVED SITES																											
R33	Land at Stonebridge	Fingle Drive	Stonebridge	7D	0.40	1	4	2	3	2	4	4	5	4	2	3	3	36	25	11	Good	Good	Good	N/A	Undevelopable due to mature trees/woodland	Urban	N/A
R53	Old Bletchley	Old Bletchley	Old bletchley	12N	11.67	2	1	3	3	3	3	3	3	3	1	3	2	28	19	9	Average	Average	Average	N/A	Part of site in operation as an army base	Urban	N/A

EXISTING EMPLOYMENT SITES	
PROPOSED SITES	
POTENTIAL SITES	
REMOVED SITES	

B1	Offices/Office Business Park
B1 & B2	Office and Industrial Units
B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units
B2	Industrial units

Appendix B Employment Sites Assessment Matrix Sites Ranked Best to Worst

Site Reference Number	Site Name	Site Address	Settlement	Grid Reference	Size (ha)	Greenfield/Brownfield	Nature of Existing Tenants	Access	Public Transport	Prominence	Local Amenities	Character of Area	Building Age	Quality of buildings	Economic Constraints	Strategic Location	Market Attractiveness	Total Score	Market Score	Physical Score	Total Ranking	Market Ranking	Physical Ranking	Use Class	Information	Location	Vacancies
E40	West Ashland Employment Area	Thornbury	West Ashland	13L	3.58	2	5	5	5	5	5	5	5	5	5	5	3	53	38	15	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	None
P40	Land at West Ashland	Thornbury	West Ashland	13L	2.85	1	4	5	5	5	5	5	5	4	5	5	3	51	37	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
E34	Tillbrook Industrial Estate	Bradbourne Drive	Tillbrook	16L	43.51	2	5	5	5	5	3	5	5	5	5	4	3	50	35	15	Excellent	Excellent	Excellent	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
P3	Land at Blakelands	Wolverton Road	Blakelands	11A	3.36	1	4	5	5	5	5	4	5	4	5	4	3	49	35	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
E10	Denbigh East Employment Area	Bond Avenue	Denbigh East	13M	14.50	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E10	Denbigh West Employment Area	Denbigh Road	Denbigh West	14M	38.13	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E16	Kingston Business Park	Chippenham Drive	Kingston	17G	55.39	2	4	5	4	5	4	4	5	5	5	4	3	48	33	15	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	Vacant units
E10A	Site A	Third Avenue	Denbigh West	13M	2.66	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
E10B	Site B	Third Avenue	Denbigh West	13M	0.70	2	4	5	5	5	5	5	4	4	4	4	3	48	35	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
P48g	Site in CMK	South Second Street	CMK	10H	9.65	2	5	5	5	5	5	4	5	4	4	3	3	48	34	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P19	Land to the East of Magna Park	Land to the East of Magna Park	Magna Park	10G	34.52	1	4	5	5	5	4	4	5	4	4	4	3	47	33	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
E5	Denbigh Hall Industrial Estate	Denbigh Hall Drive	Bletchley	11L	4.96	2	4	4	4	4	4	4	5	5	5	4	3	46	32	14	Excellent	Excellent	Excellent	B8	Warehouse/Distribution Units	Urban	None
E23	Newport Pagnell Interchange Park	Renny Park Road	Newport Pagnell	6B	22.63	2	4	4	4	5	4	4	5	5	4	3	3	45	31	14	Excellent	Excellent	Excellent	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
P46	Land at Brook Furlong	Trafalgar Drive	Booklands	16D	6.70	1	4	5	5	5	1	5	5	4	5	4	2	45	31	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P49	Land at Pineham	Pineham	Pineham	15D	10.85	1	4	5	5	5	1	5	5	4	5	4	2	45	31	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
E33	Stonebridge Employment Area	Fingle Drive	Stonebridge	7D	11.35	2	3	4	5	3	5	5	4	5	5	3	2	44	31	13	Excellent	Excellent	Excellent	B2	Industrial units	Urban	None
E39	Wavendon Gate Business Park	Walton Road	Wavendon Gate	17J	10.13	2	5	4	3	4	3	4	5	5	5	3	3	44	30	14	Excellent	Excellent	Excellent	B1 and B8	Office and Warehousing/Distribution Units	Urban	None
E9A	Site A	Vincent Avenue	Crownhill	7F	1.19	1	4	4	5	4	4	4	5	4	5	3	2	44	31	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
P48e	Site in CMK	Avebury Boulevard	CMK	10G	0.81	2	4	4	5	4	5	3	5	4	5	2	3	44	31	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P27	Land at Redmoor	Wimblington drive	Redmoor	12L	1.68	1	4	5	5	4	5	5	5	4	3	1	3	44	30	14	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
E9	Crownhill Business Centre	Vincent Avenue	Crownhill	7F	21.27	2	4	4	5	4	4	4	4	4	5	3	2	43	31	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units adervtised
E19	Magna Park	Fen Street	Magna Park	19G	110.04	2	4	4	5	4	4	4	4	4	5	3	2	43	31	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units adervtised
E45	Wymbush Industrial Estate	Garamonde Drive	Wymbush	7G	27.17	1	4	4	4	4	2	5	4	5	5	3	3	43	30	13	Excellent	Excellent	Excellent	B2	Industrial units	Urban	None
P48b	Site in CMK	Lower Tenth Street	CMK	11G	1.03	2	4	4	5	4	5	4	5	4	4	2	2	43	30	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Vacant land
P48f	Site in CMK	Lower Fourth Street	CMK	10G	0.42	2	4	3	5	4	5	5	5	4	4	2	2	43	31	12	Excellent	Excellent	Good	NA	Vacant land	Urban	Vacant land
E2	Brinklow Industrial Estate	Brudenell Drive	Binklow	17H	36.91	2	5	5	3	4	1	5	3	5	5	3	3	42	29	13	Excellent	Good	Excellent	B8	Warehouse/Distribution Units	Urban	Vacant units advertised
E4	Bleak Hall Industrial Estate	Chesney Wold	Bleak Hall	11K	27.74	2	4	4	4	4	4	4	4	4	4	3	3	42	30	12	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E35	Tongwell Industrial Area	Michigan Drive	Tongwell	13C	56.77	2	5	5	3	4	1	5	4	4	5	3	3	42	29	13	Excellent	Good	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E36	Yeomans Drive Industrial Estate	Yeomans Drive	Tongwell	12C	22.26	2	5	5	3	4	1	5	4	4	5	3	3	42	29	13	Excellent	Good	Excellent	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E17A	Site A	Kelvin Drive	Knowlhill	10K	2.37	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17B	Site B	Roebuck Way	Knowlhill	10J	1.27	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17C	Site C	Roebuck Way	Knowlhill	10J	1.64	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17D	Site D	Davy Avenue	Knowlhill	10J	0.21	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E17E	Site E	Murdoch Court	Knowlhill	9J	1.93	1	4	4	3	3	4	5	5	4	5	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18A	Site A	Sunrise Parkway	Linford Wood	10E	0.40	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18B	Site B	Breckland	Linford Wood	10D	1.35	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E18C	Site C	Breckland	Linford Wood	10E	0.62	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E35A	Site A	Michigan Drive	Tongwell	14C	0.49	2	4	5	3	4	1	5	5	4	5	3	3	42	28	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
P48a	Site in CMK	South Tenth Street	CMK	11G	0.65	2	4	4	4	5	5	3	5	4	4	2	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P18a	Land at Linford Wood	Rockingham Drive	Linford Wood	11D	1.37	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P18b	Land at Linford Wood	Rockingham Drive	Linford Wood	11E	1.32	1	4	4	4	4	4	4	5	4	4	3	2	42	29	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
E17	Knowlhill Employment Area	Davy Avenue	Knowlhill	10J	29.98	2	4	4	3	3	4	5	4	4	5	3	2	41	29	12	Excellent	Good	Good	B1 and B2	Office and Industrial Units	Urban	Vacant units and land advertised
E18	Linford Wood Business Centre	Rockingham Drive	Linford Wood	11E	38.68	2	4	4	4	4	4	4	4	4	4	3	2	41	29	12	Excellent	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E21	Mount Farm Industrial Estate	Dawson Road	Mount Farm	13L	33.90	2	5	4	3	4	1	5	4	4	5	3	3	41	29	12	Excellent	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E29	Shenley Wood Employment Area	Chalkdell Drive	Shenley Wood	8K	13.37	1	4	4	4	4	4	3	5	4	4	4	1	41	28	13	Excellent	Good	Excellent	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
E43	Wolverton Rail Freight Terminal	Stratford Road	Wolverton	6D	6.80	2	4	4	3	4	4	5	5	4	4	3	1	41	28	13	Excellent	Good	Excellent	B8	Warehouse/Distribution Units	Urban	None
E42B	Site B	Snowdon Drive	Winterhill	10H	0.75	2	4	5	3	3	4	5	5	4	3	3	2	41	27	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E43A	Site A	McConnell Drive	Wolverton	7D	2.56	2	4	4	3	4	4	5	5	4	4	3	1	41	28	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E45A	Site A	Garamonde Drive	Wymbush	7F	1.19	1	4	4	4	4	2	5	5	4	3	3	3	41	28	13	Excellent	Excellent	Excellent	NA	Vacant land	Urban	Available plot
P48c	Site in CMK	South Seventh Street	CMK	11G	0.38	2	4	3	5	3	5	5	5	4	4	2	2	41	29	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
P48d	Site in CMK	South Eighth Street	CMK	11G	0.42	2	4	3	4	4	5	5	5	4	4	2	1	41	29	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
P28	Land at Rooksley	Deltic Avenue	Rooksley	8G	1.28	1	4	5	4	2	3	5	5	4	4	3	2	41	27	14	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
E13	Granby Trade Park	Peverel Drive	Granby	12L	5.10	2	4	4	3	3	5	4	3	3	4	4	3	40	30	10	Excellent	Excellent	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E20	Mount Farm Auckland Park	Mount Avenue	Mount Farm	14L	20.33	2	4	4	3	4	1	5	3	5	5	3	3	40	28	12	Excellent	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units and land advertised
E42	Winterhill	Snowdon Drive	Winterhill	10H	7.97	2	4	5	3	4	4	5	3	3	4	3	2	40	29	11	Excellent	Good	Good	B1 and B2	Office and Industrial Units	Urban	Vacant land advertised
E15A	Site A	Tilers Road	Kiln Farm	5G	0.20	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Available plot
E20A	Site A	Auckland Park	Mount Farm	14L	1.94	2	4	4	3	4	1	5	4	4	5	3	3	40	28	12	Excellent	Good	Good	NA	Vacant land	Urban	Available plot
P15a	Land near Kiln Farm	Watling Street	Kiln Farm	6H	9.51	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P15b	Land near Kiln Farm	Watling Street	Kiln Farm	5G	7.33	1	4	4	4	4	3	3	5	4	4	3	2	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29a	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	8K	2.96	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29b	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	8K	2.95	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29c	Land at Shenley Wood	Chalkdell Drive	Shenley Wood	7K	3.49	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29d	Land at Shenley Wood	Foxcover Road	Shenley Wood	7L	2.3	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P29e	Land at Shenley Wood	Merlewood Drive	Shenley Wood	7L	1.19	1	4	4	4	4	4	3	5	4	3	4	1	40	27	13	Excellent	Good	Excellent	NA	Vacant land	Urban	Vacant land
P31b	Land at Snelshall West	Steinbeck Crescent	Snelshall West	8P	1.03	1	4	5	3	5	1	3	5	4	5	3	2	40	26	14	Excellent	Good	Excellent	NA	Vacant land	Rural	Vacant land
P31c	Land at Snelshall West	Steinbeck Crescent	Snelshall West	8P	1.25	1	4	5	3	5	1	3	5	4	5	3	2	40	26	14	Excellent	Good	Excellent	NA	Vacant land	Rural	Vacant land
P52	Land at Fishermead	Gurnards Avenue	Fishermead	12G	0.37	1	4	3	5	2	5	4	5	4	3	2	3	40	28	12	Excellent	Good	Good	NA	Vacant land	Urban	Vacant land
E1	Atterbury Existing Employment Area	Fairbourne Drive	Atterbury	15E	1.55	2	3	3	4	3	2	4	5	5	5	3	2	39	26	13	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	None
E8	Caldecotte Lake Business Park	Caldecotte Lake	Caldecotte	16M	10.65	2	4	4	3	3	1	3	5	5	5	3	3	39	25	14	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	Vacant sites
E15	Kiln Farm Industrial Estate	Pitfield	Kiln Farm	5F	50.90	2	4	4	4	4	3	3	4	4	4	3	2	39	27	12	Good	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E27	Redmoor Employment Area	Wimblington Drive	Redmoor	12K	13.59	2	3	5	5	4	5	5	3	2	3	1	3	39	29	10	Good	Good	Good	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
E30	Snelshall East Industrial Estate	Pendeen Crescent	Snelshall East	8P	6.30	2	4	5	3	5	1	3	5	4	4	3	2	39	25	14	Good	Good	Excellent	B8	Warehouse/Distribution Units	Rural	None
E31	Snelshall West Industrial Estate	Steinbeck Crescent	Snelshall West	8P	14.46	2	4	5	3	5	1	3	5	4	4	3	2	39	25	14	Good	Good	Excellent	B8	Warehouse/Distribution Units	Rural	None
E37	Walton Employment Area	Walton Drive	Walton	15J	9.17	2	4	4	3	3	4	4	5	4	4	3	1	39	26	13	Good	Good	Excellent	B2 and B8	Industrial and Warehousing/Distribution Units	Urban	None
P39	Land at Wavendon Gate	Ortensia Drive	Wavendon Gate	17H	10.83	1	4	5	3	4	1	4	5	4	4	3	2	39	25	14	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
E7	Bradwell Abbey Industrial Estate	Alston Drive	Bradwell Abbey	7F	15.64	2	3	4	4	4	3	4	4	3	4	3	2	38	27	11	Good	Good	Good	B2	Industrial units	Urban	Vacant units advertised
E12	Fox Milne Industrial Estate	Opal Drive	Fox Milne	15E	14.80	2	3	4	4	3	2	4	4	5	5	3	1	38	25	13	Good	Good	Excellent	B1 and B2	Office and Industrial Units	Urban	Vacant units advertised
E24	Nothfield Drive Industrial Estate	Northfield Drive	Northfield	15E	23.26	2	4	4	4	4	4	3	3	3	4	3	2	38	28	10	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E25	Old Wolverton Industrial Estate	Colts Holm Road	Old Wolverton	6C	57.60	2	3	3	3	2	3	5	5	5	5	3	1	38	25	13	Good	Good	Excellent	B2	Industrial units	Rural	None
E32	Stacey Bushes Industrial Estate	Erica Road	Stacey Bushes	7E	8.55	2	3	4	4	4	3	4	4	3	4	3	2	38	27	11	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E44	Wolverton Mill Industrial Estate	Featherstone Road	Wolverton Mill	4E	23.70	2	3	4	3	4	2	4	4	5	4	3	2	38	25	13	Good	Good	Excellent	B1 and B2	Office and Industrial Units	Urban	None
E8A	Site A	Monellan Grove	Caldecotte	15M	0.61	2	4	4	3	3	1	3	5	4	5	3	3	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E8B	Site B	Caldecotte Drive	Caldecotte	16M	1.92	2	4	4	3	3	1	3	5	4	5	3	3	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E44A	Site A	High Park Drive	Wolverton Mill	4D	0.70	1	4	4	3	4	2	4	5	4	3	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E44B	Site B	Featherstone Road	Wolverton Mill	4E	0.47	1	4	4	3	4	2	4	5	4	3	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
P30a	Land at Snelshall East	Pendeen Crescent	Snelshall East	9N	3.28	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant Land
P30b	Land at Snelshall East	Pendeen Crescent	Snelshall East	9P	2.76	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant Land
P31a	Land at Snelshall West	Steinbeck Crescent	Snelshall West	7P	3.00	1	4	5	3	5	1	3	5	4	3	3	2	38	24	14	Good	Good	Excellent	NA	Vacant land	Rural	Vacant land
P37	Land at Walton	Groveway	Walton	15K	9.48	1	4	4	3	3	4	4	5	4	3	3	1	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P41	Land at Willen Lake	Brickhill Street	Willen Lake	13E	1.05	1	4	4	4	3	2	3	5	4	4	3	2	38	25	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
E3	Blakelands Industrial Estate	Tanners Drive	Blakelands	12B	16.73	2	3	4	4	4	4	3	3	3	4	3	2	37	27	10	Good	Good	Good	B1 & B2	Office and Industrial Units	Urban	Vacant units advertised
E6	Bradville Industrial Estate	Blundells Road	Bradville	9D	5.75	2	3	4	4	3	3	3	4	4	4	3	2	37	25	12	Good	Good	Good	B2 & B8	Industrial and Warehousing/Distribution Units	Urban	None
E28	Rooksley Employment Area	Precedent Drive	Rooksley	9G	14.17	2	2	5	4	2	3	5	3	3	5	3	2	37	26	11	Good	Good	Good	B1 and B2	Office and Industrial Units	Urban	None
E25B	Site B	Colts Holm Road	Old Wolverton	6C	0.48	2	4	3	3	2	3	5	5	4	4	3	1	37	25	12	Good	Good	Good	NA	Vacant land	Rural	Available plot
P44a	Land at Wolverton Mill	Harnet Drive	Wolverton Mill	4D	1.91	1	4	4	3	3	2	4	5	4	3	3	2	37	24	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P44b	Land at Wolverton Mill	Harnet Drive	Wolverton Mill	4E	3.19	1	4	4	3	3	2	4	5	4	3	3	2	37	24	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
P51	Land at Atterbury	Tongwell Street	Atterbury	15F	3.75	1	4	3	3	4	2	3	5	4	4	3	2	37	25	12	Good	Good	Good	NA	Vacant land	Urban	Vacant land
E14	Kents Hill Park	Timbold Drive	Kents Hill Park	15H	8.15	2	3	4	1	3	1	4	5	5	5	3	2	36	22	14	Good	Good	Excellent	B1	Offices/ Office Business Park	Urban	Vacant units and land advertised
E42A	Site A	Snowdon Drive East	Winterhill	10J	0.15	2	4	5	3	3	4	5	3	1	3	3	2	36	27	9	Good	Good	Average	NA	Vacant land	Urban	Available plot
R33	Land at Stonebridge	Fingle Drive	Stonebridge	7D	0.40	1	4	2	3	2	4	4	5	4	2	3	3	36	25	11	Good	Good	Good	N/A	Undevelopable due to mature trees/woodland	Urban	N/A
E12A	Site A	Opal Drive	Fox Milne	14F	0.83	2	4	3	4	2	2	4	5	4	3	3	1	35	23	12	Good	Good	Good	NA	Vacant land	Urban	Available plot
E26A	Site A	Yardley Road	Olney	2C	2.71	2	4	4	1	2	2	3	5	4	5	3	2	35	22	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
E38	Water Eaton Industrial Estate	Barton Road	Water Eaton	13P	8.85	2	3	3	3	4	4	3	3	3	4	3	1	34	25	9	Good	Good	Average	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	None
E14A	Site A	Timbold Drive	Kents Hill Park	15H	5.48	2	4	4	1	3	1	4	5	4	3	3	2	34	21	13	Good	Good	Excellent	NA	Vacant land	Urban	Available plot
P47d	Land at Campbell Park	Eskan Court	Campbell Park	12E	0.88	1	4	4	3	4	1	2	5	4	3	2	2	34	21	13	Good	Good	Excellent	NA	Vacant land	Urban	Vacant land
E26	Yardley Road Industrial Estate	Yardley Road	Olney	2C	9.32	2	3	4	1	2	2	3	4	4	5	3	2	33	21	12	Good	Good	Good	B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units	Urban	Vacant units advertised
E22	Newport Pagnell Business Park	Tickford Street	Newport Pagnell	4C	4.81	2	4	3	3	3	3	3	3	3	4	2	1	32	23	9	Good	Good	Average	B1 & B2	Office and Industrial Units	Urban	None
P47e	Land at Campbell Park	Melville Street	Campbell Park	12E	2.11	1	4	4	3	2	1	1	5	4	5	2	1	32	19	13	Good	Average	Excellent	NA	Vacant land	Urban	Vacant land
E44C	Site C	Featherstone Road	Wolverton Mill	4E	2.04	1	4	3	2	2	2	3	5	4	3	1	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Available plot
P47f	Land at Campbell Park	Skeldon Gate	Campbell Park	11F	1.00	1	4	3	3	2	1	1	5	4	4	2	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Vacant land
P50	Land at Woburn Sands	Station Road	Woburn Sands	1C	1.25	2	4	3	3	1	4	2	5	4	2	1	1	30	18	12	Good	Average	Good	NA	Vacant land	Urban	Vacant land
P47c	Land at Campbell Park	Overgate	Campbell Park	13F	0.57	1	4	3	3	1	2	1	5	4	3	1	1	28	16	12	Average	Poor	Good	NA	Vacant land	Urban	Vacant land
R53	Old Bletchley	Old Bletchley	Old bletchley	12N	11.67	2	1	3	3	3	3	3	3	3	1	3	2	28	19	9	Average	Average	Average	N/A	Part of site in operation as an army base	Urban	N/A
E11	Fenny Stratford Employment Area	Simpson Road	Fenny Stratford	14N	4.85	2	2	2	4	1	4	3	3	2	3	2	1	27	20	7	Average	Average	Average	B2	Industrial units	Urban	Vacant sites
P47a	Land at Campbell Park	Enterprise Lane	Campbell Park	12F	0.90	1	4	4	3	1	1	1	5	4	1	2	1	27	14	13	Average	Average	Excellent	NA	Vacant land	Urban	Vacant land
P47b	Land at Campbell Park	Overgate	Campbell Park	12F	0.19	1	4	2	3	2	1	1	5	4	3	1	1	27	16	11	Average	Poor	Good	NA	Vacant land	Urban	Vacant land
E41	Willen Lake	Willen Lake	Willen Lake	13E	2.73	2	3	3	1	1	1	2	4	4	3	1	1	24	13	11	Average	Average	Good	B8	Warehouse/Distribution Units	Urban	None
P54	Land at West Bletchley	Bletchley Road	West Bletchley	11O	4.83	2	4	1	2	1	1	2	5	4	2	1	1	24	14	10	Average	Average	Good	NA	Vacant land	Urban	Vacant land

EXISTING EMPLOYMENT SITES	
PROPOSED SITES	
POTENTIAL SITES	
REMOVED SITES	

B1	Offices/Office Business Park
B1 & B2	Office and Industrial Units
B1, B2, B8	Offices, Industrial and Warehousing/Distribution Units
B2	Industrial units
B8	Warehouse/Distribution Units
B2 & B8	Industrial and Warehousing/Distribution Units
B1 and B8	Office and Warehousing/Distribution Units

Appendix C Employment Sites Assessment Proformas

gva.co.uk

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Existing Employment/Developed Areas

Site Ref No

Address

The site is best described as a:

- ❑ Out of Town Office Campus
- ❑ High Quality Business Park
- ❑ Research and Technology/Science Park
- ❑ Warehouse/Distribution Park
- ❑ General Industry/Business Area
- ❑ Heavy/Specialist Industrial Site
- ❑ Town Centre
- ❑ Incubator/SME Cluster Site
- ❑ Specialised Freight Terminals
- ❑ Sites for Specific Occupiers
- ❑ Recycling/Environmental Industries Sites
- ❑ Other - Storage

General comments / description of site

Proportion of Floorspace in Non-B-class uses

	0-25%	25-50%	50-75%	75-100%
Housing	❑	❑	❑	❑
Retail	❑	❑	❑	❑
Community	❑	❑	❑	❑
Other	❑	❑	❑	❑
All B-Class	❑			

Neighbouring Taylor Wimpey housing development

Nature of Existing Tenants

5 – National /international names: significant presence.
4 – Some national /international names present, but majority of occupiers from drawn from regional companies.
3 – No national /international names companies exclusively Milton Keynes based.
2 – Companies drawn from local area but could be seen as having choice of locations in local area.
1 – Very local companies who by nature of their business would be expected to have very limited choices in terms of alternative location.

Availability

Yes – Site is advertised as being available, or there are no obvious obstructions to immediately develop the site.
No – Site is not immediately available (please state reason why in space below)

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Existing Employment/Developed Areas

Market Activity (any in last 5 years)

Yes – Evidence of recent development in the immediate surrounding area (e.g. on the same part of an estate or road)
No – No evidence of recent development. If the site is a new (Greenfield) site please state below whether it would be attractive to the market at present

Access

5. Either adjoining main road or motorway junction with easy site access for all vehicles or access to rail, air and sea networks
4. Close to major road network; easy site access for all vehicles
3. Easy site access for all vehicles; indirect or restricted access to major road network
2. Restricted access for HGVs; restricted access to major road network
1. Restricted access for all commercial vehicles, severely restricted access to major road network

Parking is adequate for the uses within the site ❑ Yes ❑ No ❑ Don't know

Public Transport

5. Close to a station, peak time bus route and cycle route; on a pedestrian route
4. Close to a station or peak time bus route, close to cycle route, on a pedestrian route
3. Close to either a station or peak time bus route or cycle route; on a pedestrian route
2. Not near a station, peak time bus route or cycle route; on a pedestrian route
1. Not on a pedestrian route; not near a station, peak time bus route or cycle route NB. "Close" = within about 10 minutes walk NB2. Peak time bus routes defined as more than 2 buses per hour

Prominence

5. Gateway site to a prominent estate, visible from major road network
4. Visible site, on a main road or prominent estate
3. On a main road or prominent estate, tucked away from view
2. Visible, on a minor road or estate
1. On a minor road or estate, tucked away from view

On-site amenities

- ❑ Convenience retail
- ❑ Comparison retail
- ❑ Restaurant/cafe
- ❑ Hotel
- ❑ Gym/sports
- ❑ Crèche
- ❑ Bank
- ❑ Education
- ❑ None
- ❑ Other

Local Amenities

5. Close to a town centre with a wide range and quantity of services
4. Close to local centre with a reasonable range and quantity of services
3. Close to a limited range and quantity of basic services
2. Close to one or two services
1. No services in close proximity

NB1: Employment related services such as banks, travel agents, shops, leisure/recreation, pubs/restaurants
NB2: "Close" = within about 10 minutes walk

Quality of environment for current use

- ❑ Very good
- ❑ Good
- ❑ Poor
- ❑ Very poor

Environment appropriate for current uses?

- ❑ Yes
- ❑ No

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Existing Employment/Developed Areas

Neighbouring uses

- ❑ Residential
- ❑ Retail
- ❑ Airport
- ❑ Road
- ❑ Industrial
- ❑ Higher Education
- ❑ Leisure
- ❑ Town centre
- ❑ Rail
- ❑ Office
- ❑ Warehousing
- ❑ Further Education

Character of Area

5. Well established commercial area
4. Established commercial area, with residential area or rural area nearby
3. Mixed commercial and residential area
2. Mainly residential or rural area with few commercial uses
1. Mainly residential or rural area with no existing commercial uses

Planning Status

5. Detailed planning permission
4. Outline planning permission
3. Published development brief
2. Local Plan allocation
1. Allocation in Deposit Draft Local Plan, or reserve site

Planning Considerations:

- ❑ Flood Risk (Zone __)
- ❑ Environmental Designation (SPA, SAC, SSSI, Ramsar)
- ❑ Heritage & Conservation (Listed Building, SAM, Cons Area)
- ❑ Tree Preservation Order

Physical Considerations:

- ❑ Topography
- ❑ Contamination
- ❑ Other

Possibly contamination from historic landfill use

Redevelopment Opportunities ❑ Yes ❑ No **Vacant Land** ❑Yes ❑ No

Vacant Buildings ❑ Yes ❑No **Approx %** _____ **and number of vacant buildings** _____

Age of Buildings (C1-5)

	0-25%	25-50%	50-75%	75-100%
Pre 1940	❑	❑	❑	❑
1940 - 1969	❑	❑	❑	❑
1970 - 1989	❑	❑	❑	❑
1990 - 1999	❑	❑	❑	❑
since 2000	❑	❑	❑	❑

Quality of Buildings (C6-9)

	0-25%	25-50%	50-75%	75-100%
Very good	❑	❑	❑	❑
Good	❑	❑	❑	❑
Poor	❑	❑	❑	❑
Very poor	❑	❑	❑	❑

Bad neighbourhood uses
Businesses in the business cluster cause:

- ❑ None
- ❑ Noise pollution
- ❑ Air pollution
- ❑ Smell
- ❑ HGV traffic (D8)

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Existing Employment/Developed Areas

- ❑ Significant car traffic
- ❑ Other (please comment)

Economic Constraints

5. No obstacles to development
4. Minor obstacles to development; relatively easy, quick and cheap to resolve
3. Minor obstacles to development; more difficult, expensive and time-consuming to resolve
2. Major obstacles to development; very difficult, expensive and time-consuming to resolve
1. Major obstacles to development; extremely difficult, expensive and time-consuming to resolve

NB: Obstacles to development would include access difficulties, infrastructure requirements, contamination remediation costs, multiple ownership etc.

Strategic Location

4. Motorway Corridor
3. Other Strategic Roads
2. Elsewhere in Built up Area
1. All other sites

Greenfield/ Brownfield

1. Site is on Greenfield Land
2. Site is on Brownfield Land

Market Attractiveness

3. Site attractive to National companies
2. Site attractive to Sub-regional companies
1. Site attractive to Local companies

CONCLUSIONS

Other Comments / Observations

Recommendations on future use/potential

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Proposed Employment Sites (clear land)

Site Ref No

Address

Greenfield/ Brownfield

1. Site is on Greenfield Land
2. Site is on Brownfield Land

General comments / description of site

Availability

Yes – Site is advertised as being available, or there are no obvious obstructions to immediately develop the site.
No – Site is not immediately available (please state reason why in space below)

Market Activity (any in last 5 years)

Yes – Evidence of recent development in the immediate surrounding area (e.g. on the same part of an estate or road)
No – No evidence of recent development. If the site is a new (Greenfield) site please state below whether it would be attractive to the market at present

Access

5. Either adjoining main road or motorway junction with easy site access for all vehicles or access to rail, air and sea networks
4. Close to major road network; easy site access for all vehicles
3. Easy site access for all vehicles; indirect or restricted access to major road network
2. Restricted access for HGVs; restricted access to major road network
1. Restricted access for all commercial vehicles, severely restricted access to major road network

Public Transport

5. Close to a station, peak time bus route and cycle route; on a pedestrian route
4. Close to a station or peak time bus route, close to cycle route, on a pedestrian route
3. Close to either a station or peak time bus route or cycle route; on a pedestrian route
2. Not near a station, peak time bus route or cycle route; on a pedestrian route
1. Not on a pedestrian route; not near a station, peak time bus route or cycle route NB. "Close" = within about 10 minutes walk NB2. Peak time bus routes defined as more than 2 buses per hour

Prominence

5. Gateway site to a prominent estate, visible from major road network
4. Visible site, on a main road or prominent estate
3. On a main road or prominent estate, tucked away from view
2. Visible, on a minor road or estate
1. On a minor road or estate, tucked away from view

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Proposed Employment Sites (clear land)

Local Amenities

5. Close to a town centre with a wide range and quantity of services
4. Close to local centre with a reasonable range and quantity of services
3. Close to a limited range and quantity of basic services
2. Close to one or two services
1. No services in close proximity

NB1: Employment related services such as banks, travel agents, shops, leisure/recreation, pubs/restaurants
NB2: "Close" = within about 10 minutes walk

Neighbouring uses

- ❑ Residential
- ❑ Retail
- ❑ Airport
- ❑ Road
- ❑ Industrial
- ❑ Higher Education
- ❑ Leisure
- ❑ Town centre
- ❑ Rail
- ❑ Office
- ❑ Warehousing
- ❑ Further Education
- ❑ Rural

Character of Area

5. Well established commercial area
4. Established commercial area, with residential area or rural area nearby
3. Mixed commercial and residential area
2. Mainly residential or rural area with few commercial uses
1. Mainly residential or rural area with no existing commercial uses

Planning Status

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- ❑ Tree Preservation Order

Physical Considerations:

- ❑ Topography
- ❑ Contamination
- ❑ Other

Redevelopment Opportunities ❑ Yes ❑ No **Vacant Land** ❑ Yes ❑ No

Bad neighbourhood uses
Businesses in the business cluster cause:

- ❑ None
- ❑ Noise pollution
- ❑ Air pollution
- ❑ Smell
- ❑ HGV traffic
- ❑ Significant car traffic
- ❑ Other (please comment)

Milton Keynes Council – Economic Growth and Employment Land Study

Proforma – Proposed Employment Sites (clear land)

Economic Constraints

5. No obstacles to development
4. Minor obstacles to development; relatively easy, quick and cheap to resolve
3. Minor obstacles to development; more difficult, expensive and time-consuming to resolve
2. Major obstacles to development; very difficult, expensive and time-consuming to resolve
1. Major obstacles to development; extremely difficult, expensive and time-consuming to resolve

NB: Obstacles to development would include access difficulties, infrastructure requirements, contamination remediation costs, multiple ownership etc.

Strategic Location

4. Motorway Corridor
3. Other Strategic Roads
2. Elsewhere in Built up Area
1. All other sites

Market Attractiveness

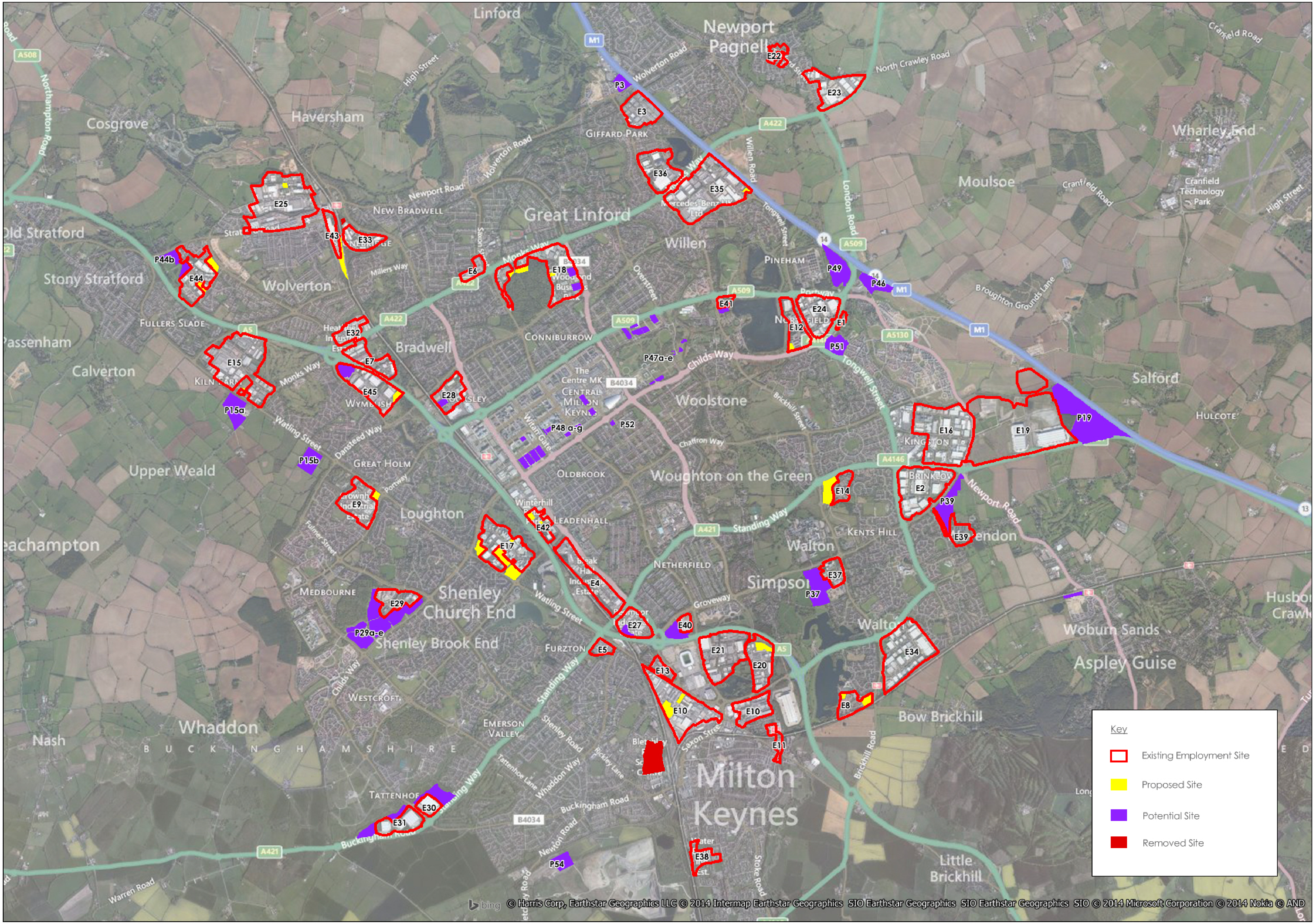
3. Site attractive to National companies
2. Site attractive to Sub-regional companies
1. Site attractive to Local companies

CONCLUSIONS

Other Comments / Observations

Recommendations on future use/potential

Appendix D Geographical Locations of Employment Land


Key
Existing Employment Site
Proposed Site
Potential Site
Removed Site
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
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E39
E40
E41
E42
E43
E44
E45
P3
P15a
P15b
P19
P29a-e
P37
P39
P44b
P46
P47a-e
P48 a-g
P49
P51
P52
P54
Linford
Newport Pagnell
Haversham
Cosgrove
Giffard Park
Great Linford
New Bradwell
Old Stratford
Stony Stratford
Wolverton
Willen
Pineham
Wharley End
Moulsoe
Cranfield Technology Park
Passenham
Calverton
Fullers Slade
Bradwell
Conniburrow
Woolstone
Salford
Hulcote
Upper Weald
Great Holm
Oldbrook
Woughton on the Green
Loughton
Leadenhall
Kents Hill
Walton
Beachampton
Netherfield
Simpson
Medbourne
Shenley Church End
Shenley Brook End
Furzton
Woburn Sands
Aspley Guise
Westcroft
Emerson Valley
Whaddon
Nash
Bow Brickhill
Tattenhoe
Milton Keynes
Little Brickhill
B U C K I N G H A M S H I R E
M1
A5
A421
A422
A509
A508
A4146
A5130
B4034
Northampton Road
Wolverton Road
High Street
North Crawley Road
Cranfield Road
London Road
Newport Road
Watling Street
Standing Way
Childs Way
Monks Way
Dansteed Way
Buckingham Road
Warren Road
Broughton Grounds Lane
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Appendix E
Base Forecast Changes in Employment by Sector

East of England Forecast Model Outputs

	2011 FTE Employment	FTE Change 2011-31	Percentage Change 2011-31
Agriculture	432	-122	-28%
Mining and Quarrying	7	-3	-45%
Food Manufacturing	3,628	151	4%
General Manufacturing	2,740	-496	-18%
Chemicals	1,460	-272	-19%
Pharma	18	-2	-12%
Metals	1,052	-162	-15%
Transport	878	-780	-89%
Electronics	1,366	-538	-39%
Utilities	171	-43	-25%
Waste and remediation	242	-23	-9%
Construction	5,013	1,413	28%
Wholesale	14,711	4,606	31%
Retail	15,291	3,644	24%
Land Transport	11,066	4,035	36%
Water and air transport	22	1	6%
Hotels and restaurants	7,712	2,352	31%
Publishing and broadcasting	547	-192	-35%
Telecoms	1,463	-17	-1%
Computer related activity	8,776	2,910	33%
Finance	7,319	1,555	21%
Real Estate	1,814	1,171	65%
Professional services	15,461	10,374	67%
R+D	141	24	17%
Business services	8,125	3,223	40%
Employment activities	5,476	3,455	63%
Public Administration incl land forces	4,855	-447	-9%
Education	13,196	1,082	8%
Health and care	13,801	5,241	38%
Arts and entertainment	4,703	2,198	47%
Other services	6,429	2,449	38%
Total	**157,913**	**46,787**	**30%**

Experian Forecast Model Outputs

	2011 FTE Employment	FTE Change 2011-31	Percentage Change 2011-31
Agriculture, Forestry & Fishing	460	-170	-37%
Extraction & Mining	9	1	11%
Food, Drink & Tobacco	2,760	-380	-14%
Textiles & Clothing	110	-70	-64%
Wood & Paper	460	30	7%
Printing and Recorded Media	400	-160	-40%
Fuel Refining	70	0	0%
Chemicals	280	-30	-11%
Pharmaceuticals	7	-1	-14%
Non-Metallic Products	990	-140	-14%
Metal Products	1,440	-60	-4%
Computer & Electronic Products	1,490	-1,110	-74%
Machinery & Equipment	750	-590	-79%
Transport Equipment	370	-310	-84%
Other Manufacturing	1,450	-240	-17%
Utilities	520	-480	-92%
Construction of Buildings	1,410	230	16%
Civil Engineering	340	0	0%
Specialised Construction Activities	1,850	440	24%
Wholesale	14,570	2,930	20%
Retail	12,440	20	0%
Land Transport, Storage & Post	12,310	3,890	32%
Air & Water Transport	20	20	100%
Accommodation & Food Services	6,010	2,340	39%
Recreation	2,950	910	31%
Media Activities	460	320	70%
Telecoms	1,510	550	36%
Computing & Information Services	8,400	3,990	48%
Finance	6,030	2,470	41%
Insurance & Pensions	90	-10	-11%
Real Estate	1,720	2,220	129%
Professional Services	13,180	8,470	64%
Administrative & Supportive Services	11,070	7,780	70%
Other Private Services	3,780	1,680	44%
Public Administration & Defence	4,070	-490	-12%
Education	9,530	4,000	42%
Health	6,690	2,450	37%
Residential Care & Social Work	4,240	1,780	42%
Total Employment	**134,236**	**38,630**	**28%**

OXFORD ECONOMICS

East of England Forecasting Model

Technical Report:

Model description and data sources

January 2015

OXFORD ECONOMICS

Contents

1: Introduction

The East of England Forecasting Model (EEFM) was developed by Oxford Economics to project economic, demographic and housing trends in a consistent fashion and in a way that would help in the development of both the Regional Economic Strategy and the Regional Spatial Strategy for the East of England. The Model is based in Excel spreadsheets, allowing users to produce scenarios under which the impacts of a given scenario can be monitored.

This report provides technical information on the EEFM's coverage, methodology and data sources. The latest forecast results are presented separately, on the Cambridgeshire Insight website.

The Model's outputs are just one piece of evidence to assist in making strategic decisions. As in all models, forecasts are subject to margins of error which increase at more detailed geographical levels. In addition, the EEFM relies heavily on published data, with BRES / ABI employment data in particular containing multiple errors at local sector level, though the Model does attempt to correct for these.

The development of a model, though a largely quantitative exercise, also requires past modelling experience and a degree of local knowledge if it is to produce plausible long-term projections. The EEFM and wider suite of Oxford models have been developed by a team of senior staff (Graham Gudgin, Kerry Houston and Mark Britton) who have a long history in model-building and forecasting at both local and regional level. The team has built up considerable knowledge of the East of England's local economies, but the feedback of local partners is essential. Discussions with local stakeholders and the EEFM Model Steering Group, and a BRES consultation exercise with local authority representatives, are key inputs to each run of the Model.

History of the EEFM

A number of EEFM baseline forecasts have been published to date, or are programmed for the future. The timings are:

- August 2007 - First EEFM release
- February 2008 - Second EEFM release
- November 2008 - Third EEFM release
- March 2009 – 'Spring 2009 release'
- October 2009 – 'Autumn 2009 release'
- March 2010 – ' Spring 2010 release'
- October 2010 – 'Autumn 2010 release'
- Spring 2012 – 'EEFM 2012 release'
- Summer 2013 – 'EEFM 2013 release'
- Autumn 2014 – 'EEFM 2014 release'

In addition, a number of alternative scenarios were generated using the Model to inform the development of the RES and RSS. The EEFM Model Steering Group has oversight of the scenario process. An advantage of the Model is that it is sufficiently flexible to generate a variety of scenarios. With each model update, these scenarios are produced by Oxford Economics. However, representatives at Cambridgeshire County Council have been trained to use the model to generate bespoke scenarios using the model which is delivered with each update.

Key outputs associated with the development of the EEFM and its forecasts so far include:

- East of England: Joint Modelling for the RES and RSS – August 2007
- East of England: Joint Modelling for the RES and RSS (update) – November 2008
- East of England Forecasting Model, Spring 2009 forecasts – May 2009
- East of England Forecasting Model, Autumn 2009 forecasts – November 2009
- East of England Forecasting Model, Spring 2010 forecasts – June 2010
- East of England Forecasting Model Technical Report (Spring 2010 update) – June 2010
- East of England Forecasting Model, Autumn 2010 forecasts – November 2010
- East of England Forecasting Model Technical Report (Autumn 2010 update) – December 2010
- East of England Forecasting Model, EEFM 2012 forecasts – June 2012
- East of England Forecasting Model Technical Report – June 2012
- East of England Forecasting Model, EEFM 2013 forecasts – July 2013
- East of England Forecasting Model Technical Report – August 2013
- East of England Forecasting Model, EEFM 2014 forecasts – November 2014
- East of England Forecasting Model Technical Report – January 2015

The outputs released are available on the Cambridgeshire Insight website. A number of other related resources can also be accessed on the site (see below).

Report structure

The purpose of this document is to provide a description of the Model's methodology and the data sources used, and act as a companion reference guide to the published results. It will be updated as the Model itself is developed, improved and updated. The report is structured as follows:

- **Chapter 2: Description of the Model** – This chapter summarises the EEFM coverage with respect to geography, time periods and linkages with other models produced by Oxford Economics.
- **Chapter 3: Model Overview** – This chapter summarises the structure of the EEFM, and the linkages and relationships between variables.
- **Chapter 4: Data Used** – This chapter lists the variables in the Model, and indicates the latest data used. It also explains any processing of the data carried out prior to its use in the EEFM.
- **Chapter 5**: **Outliers and Data Validity –** This chapter summarises Oxford Economics' approach to anomalous data (so-called "outliers") and the methods used to check that the EEFM is internally consistent.
- **Chapter 6**: **Performance Monitoring –** This chapter explores the accuracy of the Model over previous forecasting cycles. It will be updated with each run of the Model in order to monitor its performance.
- **Chapter 7**: **Employment Land Module** – This chapter outlines our methodology for calculating employment land use forecasts under the 2014 update of the East of England Forecasting Model (EEFM).

This report does not provide EEFM forecast results. These can be found on the Cambridgeshire Insight website www.cambridgeshireinsight.org.uk/EEFM. The detailed forecasts are available in Excel spreadsheets, accompanied by an Oxford Economics PowerPoint report which is also available from the Cambridgeshire Insight website.

2: Description of the Model

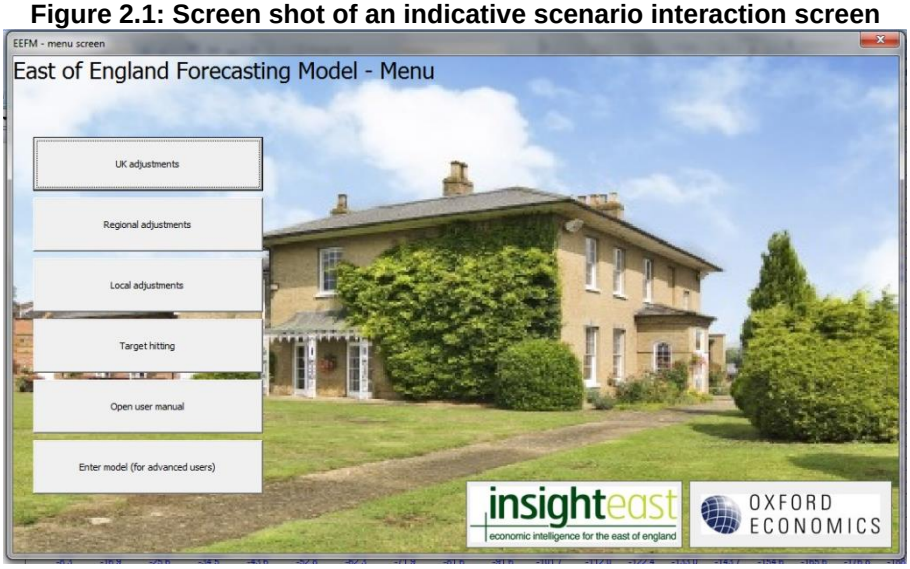
This chapter provides an overview of the East of England Forecasting Model (EEFM) and summarises its coverage and links to other Oxford Economics models. It also contains a list of the variables and geographies used. The forecasting methods and data sources are described in subsequent chapters.

Structure of the EEFM

The East of England Forecasting Model (previously the EEDA-EERA Forecasting Model) is a spreadsheet-based model originally designed to help inform and monitor the development and review of the RES and RSS. It covers a wide range of variables, and is designed to be flexible so that alternative scenarios can be run and the impacts of different assumptions can be measured.

In addition to the Excel spreadsheet version, Oxford Economics has designed a 'front-end' version of the Model (see figure 2.1 below) providing an easy way for users to input scenario assumptions for testing. The Model software processes these scenario assumptions and produces outputs in Excel. Unfortunately, this facility is not available through the Cambridgeshire Insight website, and anyone wanting to test their own scenarios should discuss with Cambridgeshire County Council first.

Figure 2.1: Screen shot of an indicative scenario interaction screen



Key features of the Model are:

- A full database including over 150 separate variables for each of the East of England's 48 pre-April 2009 local authorities, as well as for historic counties, strategic authorities, selected other local authority groupings, the East as a whole, 8 local authorities in the East Midlands and the region as a whole, 21 local authorities in the South East and the region itself, and the UK;

- EEFM software allowing users to produce scenarios tailored to their needs (not available over the web);

- A comprehensive set of tables, charts and PowerPoint slides allowing users to select and assemble data on the variables, localities, scenarios and results they want; and

- A spreadsheet system containing:
    - Linked worksheets, to facilitate faster updating;
    - Worksheets structured to generate forecasts and scenarios;
    - Worksheets designed to produce tables, charts and PowerPoint presentations.

The overall Model structure captures the interdependence of the economy, demographic change and housing at a local level, as well as reflecting the impact of broader economic trends on the East of England. The employment forecasts take account of the supply and demand for labour, the demographic forecasts reflect labour market trends as they are reflected in migration (and natural change indirectly), and the housing forecasts take account of both economic and demographic factors. This structure allows scenarios which test the impact of variables upon each other – for example, the impact of housing supply on economic variables.

Geography

The Model produces forecasts for each local authority district and unitary authority in the East of England, and selected local authorities in the East Midlands and South East region to allow for LEP aggregation. For the EEFM 2014 forecasts, that equates to 77 local authorities, including the former Mid Bedfordshire and South Bedfordshire districts which have been retained at the request of regional partners - the new Central Bedfordshire unitary authority is one of the strategic groupings for which forecasts are also provided.

Forecasts are also available for selected groupings of local authority districts and unitaries. These were decided in consultation with regional partners through the EEFM Model Steering Group, and also include the new Local Enterprise Partnerships (LEPs). For a full list of the groupings available, refer to the EEFM section of the Cambridgeshire Insight website.

In addition to these geographies, forecasts for the East of England, East Midlands and South East regions, and for the UK, are available.

Time periods

The EEFM is constructed on an annual basis. Historic data for most variables has been collected over 20 years to provide a basis for estimating the relationships between variables and for forecasting future trends. Forecasts are currently made up to 2031, reflecting the available global, national and regional forecasts. But the longer-term forecasts should be treated with some caution, as unforeseen - but inevitable - future change in the underlying drivers will affect forecast accuracy. Medium-term forecasts are actually more likely to be better approximations than shorter-term ones, as we can usually be more confident about medium-term trends than about short-term random fluctuations around the trend.

Things to Remember When Using the Model

EEFM forecasts are based on observed past trends only

Past trends reflect past infrastructure and policy environments. Even where major new investments or policy changes are known and have actually started, they can only affect EEFM forecasts to the extent that they are reflected in the currently available data. If they have not yet impacted on the available data, they will not be reflected in the forecasts.

There are two sets of exceptional circumstances in which the currently available data need to be supplemented by other information. The first is where there are concerns about data quality. This issue is explored in Chapter 5. The second is where the Model produces unrealistic forecasts - for example, continuing an employment decline in a particular sector in a particular area until it reaches zero or even negative values. Manual adjustments to the Model are necessary in these situations, and here professional judgement inevitably comes into play. This is discussed further below.

The forecasts are unconstrained

This means that the forecast numbers do not take into account any policy or other constraints that might prevent their actual realisation on the ground. Forecasts of the demand for dwellings, for example, are the outcome of projected changes in employment, population, etc. If in reality planning constraints were to prevent this demand being satisfied, the associated forecast levels of economic, labour market and demographic variables would be less likely to materialise.

The forecasts are subject to margins of error

As with all kinds of forecasting, there are margins of error associated with the results which tend to widen over time. Furthermore, the quality and reliability of data decreases at more detailed levels of geography. Under current data-quality conditions, models are most helpful for identifying trends, average growth rates and broad differentials between areas and sectors. Accordingly, users are encouraged to focus on the patterns over time, not figures for individual years.

Reality is more complex than any model

Several of the modelled relationships are complicated and their treatment in the EEFM is necessarily simplified, despite its large size. In particular, the demand for housing is complex and not all the factors may be fully captured. Questions such as whether migrants' apparent willingness to live at higher densities than the existing population is merely a temporary state which requires much more investigation.

Forecasting models will not all agree

The EEFM's baseline forecasts can be compared with other published forecasts, but close agreement should not be expected and sometimes there can be wide divergences. These can arise from even small differences in underlying assumptions and in the timing and definitions of the data used. But with an awareness of these factors, the EEFM forecasts provide a useful starting point for an understanding of regional and local economic trends in the East of England, particularly when the baseline is accompanied by alternative scenario forecasts with which it can be compared.

Coverage

Later chapters provide more detailed information on the data used in the EEFM and how the linkages in the Model are used for the forecasting and scenario work. But the list below gives an overview of the variables covered by the Model:

- **Demography**
  - Population
    - Total
    - Working age (this was changed in EEFM 2013 to be defined as all people aged 16-64, as working age population defined as all people aged 16-retirement age - the previous definition of working age in the EEFM - is no longer published by the ONS)
    - Young (defined as all persons aged 0-15)
    - Elderly (all people aged 65+)
  - Migration (Note: domestic and international migration are not differentiated in the EEFM at either the regional or the local level. However, the regional migration forecasts are scaled to those from Oxford Economics' Regional Model, which does identify international migration.)
  - Natural increase

- **Labour market**
  - Employee jobs by 31 sectors (workplace-based, SIC 2007 based)
    - Agriculture & fishing **(SIC 01-03)**
    - Mining & quarrying **(SIC 05-09)**
    - Food manufacturing **(SIC 10-12)**
    - General manufacturing **(SIC 13-18, 31-33)**
    - Chemicals excl. pharmaceuticals **(SIC 19-23, excluding 21)**
    - Pharmaceuticals **(SIC 21)**
    - Metals manufacturing **(SIC 24-25)**
    - Transport equipment, machinery & equipment, etc. **(SIC 28-30)**
    - Electronics **(SIC 26-27)**
    - Utilities **(SIC 35-37)**
    - Waste & remediation **(SIC 38-39)**
    - Construction **(SIC 41-43)**
    - Wholesale **(SIC 45-46)**
    - Retail **(SIC 47)**
    - Land transport **(SIC 49, 52-53)**
    - Water & air transport **(SIC 50-51)**
    - Hotels & restaurants **(SIC 55-56)**
    - Publishing & broadcasting **(SIC 58-60)**
    - Telecoms **(SIC 61)**
    - Computer related activities **(SIC 62-63)**
    - Finance **(SIC 64-66)**
    - Real estate **(SIC 68)**
    - Professional services excl. R&D activities **(SIC 69-75 excluding 72)**
    - Research & development **(SIC 72)**
    - Business services excl. employment activities **(SIC 77-82 excluding 78)**
    - Employment activities **(SIC 78)**
    - Public administration **(SIC 84)**
    - Education **(SIC 85)**
    - Health & care **(SIC 86-88)**

  - Arts & entertainment **(SIC 90-93)**
  - Other services **(SIC 94-99)**
- Employee jobs – full time and part time by 31 sectors (workplace-based)
- Self-employed jobs by the 31 sectors (workplace-based)
- Total employment (employee jobs plus self-employed jobs) by the 31 sectors (workplace-based)
- Total number of people employed in an area (consistent with 2001 and 2011 Census points)
- Total number of an area's residents who are employed (consistent with 2001 and 2011 Census points)
- Employment rate of an area's residents (aged 16-74, consistent with 2001 and 2011 Census points)
- Net commuting (number of people employed in an area, minus the number of that area's residents who are employed)
- Unemployed (claimant and ILO)

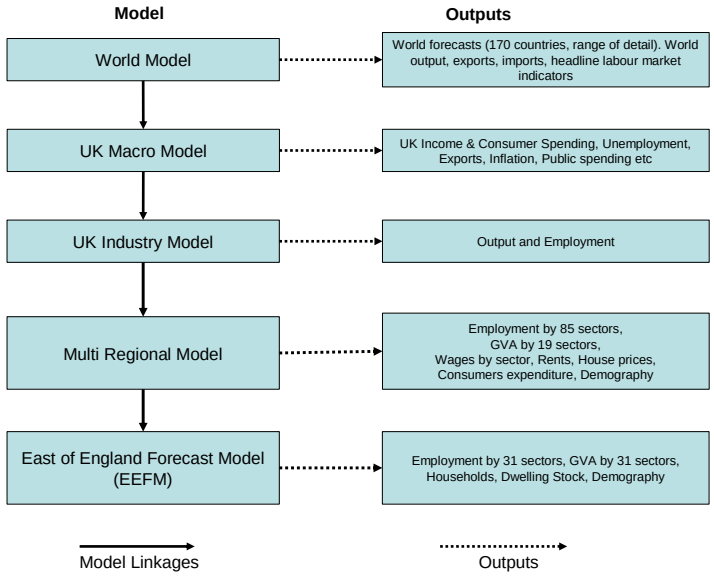
- **Output**
  - GVA (£m, workplace-based, 2003 prices for Spring 2009 forecasts, 2005 prices for Autumn 2009 and Spring 2010 forecasts, 2006 prices for Autumn 2010 forecasts, 2008 prices for EEFM 2012 forecasts, 2009 prices for EEFM 2013 forecasts, and 2010 prices for EEFM 2014 forecasts by 31 sectors listed above). Note that ownership of dwellings (imputed rents as defined in the Blue Book) is now included within real estate sector, previous published as its own sector.
  - Productivity by 31 sectors (per job, including both employee and self employed jobs)

- **Housing**
  - Households
  - Demand for dwellings

Links with other models

An important feature of the EEFM is its links to other Oxford Economics forecasting models, ensuring that all EEFM forecasts are consistent with Oxford Economics' world, UK national and UK regional forecasts. The links are summarised in Figure 2.2.

Figure 2.2: Links with the Oxford Economics suite of models



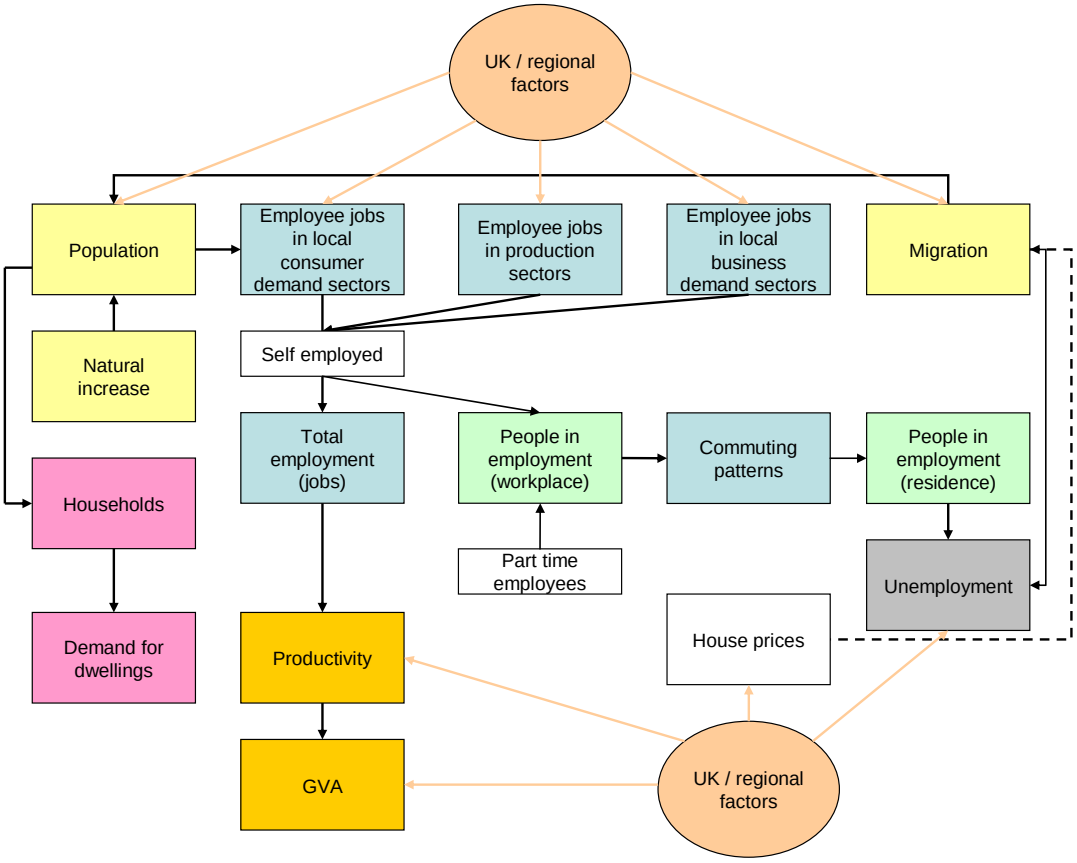
3: Model overview

The structure and data inputs of the Oxford Economics Regional Model, which underpins the EEFM, is not set out here, but can be obtained from Oxford Economics on request.

Variables in the EEFM

The EEFM is very large, with over 12,000 economic, demographic and housing indicators. Each of these variables is linked to others within the Model, and many key variables are also linked to others in the wider Oxford Economics suite of models. The main internal relationships between variables are summarised in Figure 3.1, and the forecasting methodology for each element in the Model is then summarised.

Figure 3.1: Main relationships between variables in the EEFM Model



Economic variables

Workplace employees (jobs)

The total number of employee jobs in an area, whether full- or part-time. These can be taken by residents or by commuters from outside. Note that this is a measure of jobs, not workers, so if one person has two part-time jobs, for example, they are counted twice.

This is forecast separately in every area for each of the 31 sectors listed on page 9. The forecasts begin with something called a "location quotient" (LQ). This is a ratio which summarises the concentration of a particular sector in a particular area, relative to the regional average. So an LQ of 0.8 (or 80%) for a given sector and area means that that sector is under-represented in the area. An LQ of 1.25 (or 125%) means that the sector is overrepresented in the area.

The EEFM contains location quotients for every local authority in the East region including the additional local authorities in the East Midlands and South East region required to construct LEP aggregates, for each of the 31 sectors, and for every year since 1991. Forecast trends in the LQs are based on how they have changed over time. So if the LQ for a given sector in a given area has been rising in recent years, the forecasts will project this to continue, and vice versa. LQs which have been stable for a long time (including at zero) will be forecast to remain so.

Three forms of location quotient are used in the EEFM. In the first, the LQ is based on *an area's share of the region's employees in a particular sector*. This is most appropriate for sectors which are essentially independent of the local economy (e.g., manufacturing). Their activities are largely driven by regional, national or international suppliers and customers, and the goods and services they produce are typically traded over long distances. The EEFM treats the following sectors in this way:

- Agriculture
- Mining & quarrying
- Food manufacturing
- General manufacturing
- Chemicals excluding pharmaceuticals
- Pharmaceuticals
- Metals manufacturing
- Transport equipment, machinery & equipment, etc.
- Electronics
- Utilities
- Waste & remediation
- Water & air transport
- Publishing & broadcasting
- Telecoms
- Computer related activity
- Research & development
- Other services

For this group, the local employee growth forecasts in the EEFM come from the interaction of the relevant LQ forecasts with the regional sector employee forecasts from Oxford's Regional Model. To take a hypothetical example, if the Regional Model forecasts a 5% increase in air transport employees in the East of England, this filters down to the local area forecasts in the EEFM. If the LQ for air transport in a given area is forecast to remain stable, the employee forecasts for air transport in that area will tend to show a 5%

increase. (In absolute terms, this means many new jobs in areas with high LQs and relatively few in areas with low LQs.) If the LQ is forecast to increase (or decrease) in an area, the local employee growth forecasts for air transport will tend to be more than (or less than) 5%.

The LQ in an area can also be based on the number of employees in a given sector *per head of the local population*, relative to the regional average. This is most appropriate for sectors in which employment change is primarily (but rarely exclusively) driven by changes in the local population (e.g., health and education). In the EEFM, this group includes:

- Wholesale
- Retailing
- Hotels & restaurants
- Public administration
- Education
- Heath & care
- Arts & entertainment

For this group, the local employee growth forecasts in the EEFM come from the interaction of the relevant LQ forecasts with the demographic forecasts for the area (which are also in the EEFM) and for the region as a whole (from the Regional Model). To take the example of education, consider an area which has an education LQ of 1.3 (or 130%) - perhaps because it has a university. Suppose that that LQ has been unchanged for a long time and is forecast to stay the same. And suppose that the area's population is also forecast to remain stable. But if the region's population is forecast to increase, education employees in this area will have to increase as well to keep the equation in balance (all other things being equal). This makes sense inasmuch as the area's education institutions clearly serve a market wider than the local area.

Finally, a sector's LQ can be based on the number of its employees *relative to all jobs in the area*, relative to the regional average. This is most appropriate for sectors where changes in employment arise primarily from changes in *total* employment locally - where the latter is effectively a proxy for business activity. (As might be expected, business services sectors tend to be in this group.) In the EEFM, the following are included:

- Construction
- Land transport
- Finance
- Real estate
- Professional services
- Business services
- Employment activities

In this group, the local employee growth forecasts in the EEFM come from the interaction of the relevant LQ forecasts with the regional sector employment forecasts from the Regional Model.

It is important to stress that the process of making these forecasts cannot be wholly automated. That is, some professional judgement is required to manually adjust the forecasts in cases where simply extrapolating the trend in location quotients from 1991 produces results which appear unrealistic for whatever reason. Altogether, around three-quarters of local sector LQ trends in the EEFM are subject to some kind of manual adjustment. The need for this is illustrated in Figures 3.2 and 3.3 below. Figure 3.2 shows two LQ trends for labour recruitment in Babergh - an automated extrapolation of past trends and a

manually-adjusted trend designed to offer a more plausible forecast in the light of recent data. It is this manually-adjusted trend which is imposed in the EEFM.

Figure 3.2: Employment location quotient for labour recruitment before and after manual adjustment in Babergh, 1991-2020

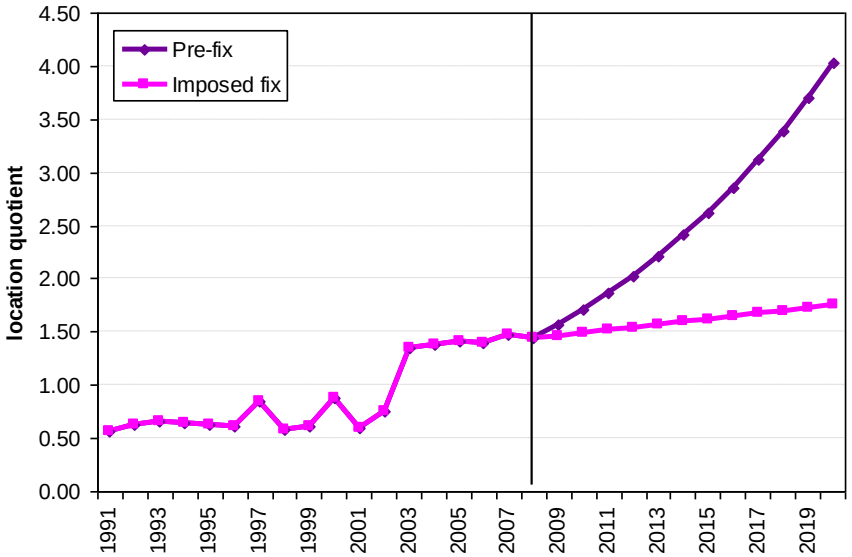
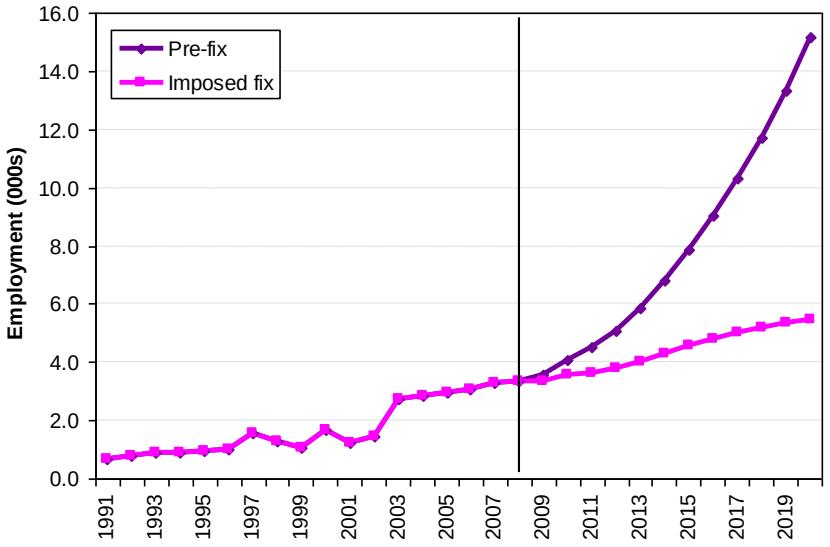


Figure 3.3 shows how these trends translate into actual jobs growth. It is clear that an uncritical acceptance of automated trends would have a substantial, implausible impact on longer-term employment forecasts for an area.

Cambridgeshire County Council and Oxford Economics would like to encourage Local Authorities to view and give feedback on the forecast trends for their areas. We regard such feedback as essential to ensure the EEFM is as credible and as accurate as possible. Chapter 5 (Table 5.1) records the instances where well-evidenced local intelligence on employment trends has been used to modify initial EEFM assumptions.

Figure 3.3: Employment in labour recruitment before and after manual adjustment in Babergh, 1991-2020



Oxford Economics' Regional Model has employee forecasts linked to a wide range of variables - for example, a region's wages and rents relative to those in London, which is particularly important as an influence on financial and business services employment. These are not replicated in the EEFM, although there is obviously an indirect link in that Regional Model employee growth forecasts in a given sector in the East of England must be allocated by the EEFM to the region's local authorities.

Both the Regional Model and the EEFM incorporate links between employment, migration and unemployment. The details of this are explained below.

Full-time and part-time employment

The total number of jobs in an area, broken down into full- and part-time jobs.

East of England shares of part-time employees among all employees in the 31 EEFM sectors (which are trend forecasts linked to regional and national projections) are applied to the workplace employee estimates described above. Full-time employees are simply the total of employees minus the part-time employees for each of the 31 sectors.

Workplace self-employment (jobs)

The total number of self-employed jobs in an area.

Self-employment data for the East of England in Oxford Economics' Regional Model comes from ONS's Labour Force Survey / Annual Population Survey. Previously, self employment data at a regional level was not available by sector, however the ONS now publishes this information.

Self-employment data for local authorities is Census-based, and scaled to the East of England self-employed jobs estimates from the Regional Model. It is broken down by the 31 EEFM sectors. The sectors are forecast using the growth in the sectoral employees in employment data and the estimates are scaled to the Regional Model's estimate of self-employment by sector for the East of England.

Total workplace employment (people)

The total number of people in employment in an area, including both residents and commuters. A person who has more than one job is only counted once, so total workplace employed people is smaller than total workplace employment.

The employment data from the Business Register and Employment Survey (BRES) over the years 2008-12 (and the Annual Business Inquiry (ABI) for earlier years) which is used in the Model measures jobs rather than workers. Because a model aiming to simulate housing demand needs to focus on people, we have to convert the total number of jobs in an area into numbers of employed people.

The 2001 and 2011 Census results give the number of people in employment in an area. For other years, we use BRES / ABI data to estimate residents in employment using the full-time and part-time projections (see above). Individuals are assumed to hold only one full-time job each. Part-time jobs are assumed to account for 0.75 of a full-time job, and self-employed people are assumed to account for 0.93 of a self-employed job. A simple adjustment is made to scale the indicator so it is consistent with the Census.

This measure is not forecast, but derived from the forecasts of jobs discussed above.

Total workplace employment (jobs)

The total number of employee jobs and self-employed jobs in an area. These can be taken by residents or commuters from outside. Note that this includes all full- and part-time jobs, so if someone has two part-time jobs, they are counted twice.

This is not forecast separately in the EEFM, but derived by summing the workplace-based employee jobs and self-employed jobs forecasts described above, and then adding in a constant for the Armed Forces (see below). (Note: Armed Forces data are added to the public administration & defence sector.)

Residence employment

The total number of employed people living in an area. This includes residents who commute elsewhere to work.

Residence employment is based on a commuting matrix taken from the 2011 Census. This matrix tells us, for any given area, where its residents work. Using this information, each available job (see workplace employment (people) above) is allocated to a resident of one of the authorities with which the area has commuting links, in proportion to the strength of that link. This method assumes that commuting patterns do not change over time.

Net Commuting

The number of people commuting into an area for work, less the number of residents commuting out.

Net commuting requires no specific forecasting method. It is the residual between an area's residence-based and workplace-based estimates of numbers of people in employment. (These variables are used to check the realism of the EEFM's workplace- and residence-based employment forecasts, and can occasionally lead to manual adjustments to the Model.)

Our broad assumption is that commuting flows over the forecast period are in line with past trends. Major changes in transport infrastructure, or significant new housebuilding in an area, may bring about changes in commuting patterns, but as indicated in Chapter 2, the EEFM can only take account of such changes if they are reflected in the available data.

Claimant unemployed

The total number of people in an area without a job and claiming unemployment benefits

The number of unemployed people is projected as:

- the previous year's value
- **plus** 0.55 X (projected change in working-age population)
- **minus** 0.45 X (projected change in resident employment)

The two coefficients were obtained by Oxford Economics after an iterative process to produce the most plausible forecasts for unemployment – and, indirectly, migration. Both are less than one, reflecting the fact that many people adding to the local working age population go into education (e.g., students) or directly into employment (e.g., by moving to the area specifically to take up a new job), and the fact that many new job vacancies in the area will not necessarily be filled by the local unemployed (e.g., migrants, commuters).

(Note: in some districts, the coefficient of working-age population, 0.55, produces implausible results – for example, in suburban areas where population change may be unrelated to employment change. In these situations, a different value is manually introduced into the Model.)

ILO unemployment is also included in the Model and comes from the Annual Population Survey. This data is available for 2004-2013 and is both back-cast and forecast, using growth rates in the claimant series.

Gross Value Added (GVA)

The total sum of income generated in an area over a specified period, usually a year. It is the sum of wages, profits and rents. An alternative and equivalent definition is the value of gross output less purchases of intermediate goods and services.

GVA forecasts are available for 31 sectors in Oxford Economics' Regional Model. Previously, a sector entitled 'ownership of dwelling' (imputed rents in the ONS National Accounts) was excluded from the overall business services sector and published as its own sector. In Summer 2011, the ONS changed its methodology to publish data which included imputed rents within the business services sector. To remain consistent with National data, the EEFM now includes this measure of GVA within the real estate sector.

Sub-regionally, limited sector GVA data is available at NUTS 3 level (i.e. for unitaries and shire counties) but not for local authorities. Our initial forecasts at this level are obtained by multiplying forecast regional GVA per job in a sector (from the Regional Model) by forecast total workplace employment (jobs) in that sector (from the EEFM) for each local authority.

These initial forecasts are then subject to two adjustments. The first is for wage differentials (from ONS's Annual Survey of Hours and Earnings), which has the effect of increasing GVA disproportionately in areas where wages are higher. The second scales local sector GVA to the most recent published NUTS 3 level GVA estimates for the relevant base year (2010).

Productivity

GVA divided by total workplace employment (jobs). It measures the average amount of income generated in each area by every person working there.

Productivity estimates do not require specific forecasting. They are simply forecast sector GVA divided by forecast total jobs (both employee and self-employed) in that sector.

Relative productivity is simply productivity in a specified area, divided by productivity in the region. A relative productivity value greater than 1.0 implies that productivity in that area (and sector) is higher than the regional average, and vice versa.

Demographic variables

Total population

The total number of people living in an area

All population data is taken from ONS's mid-year estimates (MYE). Population at regional level is forecast using official projections of natural increase, plus Oxford's projected numbers of migrants (broken down by domestic and international). At local level, total population is forecast as last year's population plus natural increase plus net migration (domestic and international).

Working age population

The total number of people in an area that are aged 16-64 (note: in the EEFM 2013 update the definition of working age was changed, previously it was defined as all people aged 16-retirement age, however this data is no longer published by the ONS leading to the decision being made to change the definition of working age)

Working age population for the region is calculated using official projections of natural increase in the working age population and Oxford's forecast of net migration of working age people (see below).

For local areas, forecast working age population is forecast total population multiplied by a ratio of working age to total population. This ratio is forecast for each year of the forecast period, and calculated as the *previous year's* ratio multiplied by the growth in the ratio regionally according to the ONS (2012-based) projections.

Young population

The total number of children in an area (defined as all people aged 0-15)

The population aged under 16 years is forecast at local authority level using an annual ratio of children to working age people. This ratio is forecast for each year of the forecast period, and calculated as the *previous year's* ratio multiplied by the growth in the ratio regionally according to the ONS (2012-based) projections. The regional forecast for this variable is simply the sum of these local area forecasts.

Elderly population

The total number of elderly people in a given area (defined as all people aged 65+). Note this definition has changed in line with the changes to the definition of working age people (see above)

The local elderly population forecasts are simply the residual of the total population when the young and working age populations are subtracted. The regional forecast for this variable is simply the sum of these local area forecasts.

Migration

The net flow of people moving into and out of an area, whether this be to/from other parts of the region, the UK or the world. A negative number signifies a net outflow of people from an area, a positive number a net inflow.

- Regional migration:

This comes from the Oxford Economics Regional Model, in which forecast net migration of *working age* people into the East of England in any given year is a function of:

- Working age net migration into the UK
- Difference in unemployment rates between the East of England and the UK
- Ratio of the East of England's house prices to those in London
- Ratio of the East of England's average wages to those in London

Total net migration into the region in any given year is forecast as the sum of forecast working age migration, plus a *constant* annual figure for other migrants.

- Local migration:

  Migration data is sourced from ONS's population mid-year estimates 'Components of Change' data. The forecasting methodology is more complex, and not the same as the regional forecasting methodology described above. At local authority level, the number of migrants is the sum of two components: *economic migrants* and *non-economic migrants*.

Note: in the EEFM 2014 update, we have re-estimated the coefficients used in the economic migrant equations to reflect recent trends in migration.

The number of *economic migrants* into each area in any given year equals:

- previous year's population
- **multiplied by** ([0.01 - (0.0016 X previous year's relative unemployment rate differential from the region unemployment rate)] where the unemployment rate has working age population as the denominator)

This formula implies that the number of migrants into a district will equate to 1.0% of last year's population if the difference between local and regional unemployment rate then was zero. Unemployment rates below 3% will result in net in-migration, whereas unemployment rates above 3% will lead to net out-migration. To illustrate with a worked example, in an area with 100,000 people and a 0.1pp positive difference in relative unemployment rate, net migration the following year will be 100,000 X [0.01 - (0.0016 X 0.1)], or 100,000 X [0.01 – 0.00016], or 100,000 X 0.00984, or 984.

So any change in employment or population in the EEFM which affects unemployment - whether the change is externally-sourced or internally generated within the Model - will affect net migration.

Non-economic migrants are set as a constant - unique to every area - for all future years. The constant for a given local authority is selected on the basis that it both reflects the actual population trend for the area over 1991-2013 (from ONS) and implies a local employment rate trend consistent with that for the region as a whole.

Housing variables

Households

The total number of households (as defined in official statistics) in an area

Demand for dwellings

The total number of dwellings (as defined in official statistics) in an area

The initial household data are as presented in the official DCLG series. The initial dwellings data are the stock data presented in the official DCLG series (table 125 provides total dwelling stock, whilst table 615 provides vacant stock, the residual between these series therefore represents occupied dwelling stock). The methodology for forecasting households and dwellings has undergone two key changes from that which was applied when the model was originally developed. When the EEFM was first developed, household numbers were originally forecast by projecting both population (using the methodology described earlier) and the ratio of households to population (from the Chelmer forecasts). From this it projected dwellings (using Chelmer forecasts of the number of dwellings per household, allowing for empty dwellings, second homes, etc.).

However, in the EEFM's Autumn 2008 run, Oxford Economics felt the Chelmer-based projections lacked credibility and the process of forecasting these two variables was modified, which became as follows:

First, we forecast the number of *occupied* dwellings directly from population by projecting the ratio of occupied dwellings to population using the linear trend identified by Oxford Economics for the period 1997 – 2007.

Having calculated occupied dwellings, we use a ratio of total to occupied dwellings (calculated by Oxford Economics from the most recent data available) in order to project *total* dwelling stock. We call this *"demand for dwellings."* It is intended to proxy dwelling stock, but it is not a conventional stock or supply figure. Rather it tries to estimate what stock might be needed to accommodate the projected number of people, using Oxford Economics' occupancy rate assumptions.

Meanwhile, to produce *household forecasts*, we divide the forecast numbers of occupied dwellings by Chelmer estimates of the ratio of occupied dwellings to households. (Note that although there is a separate Chelmer estimate for each local authority, it is a constant, so will not capture possible changes locally over time.)

In the EEFM 2013 update, we made one further adjustment to the forecast for these two variables. In recent years, the occupancy ratio of dwelling stock in the East has stalled its downward trend. This has largely been brought about by the impact of the recession and sluggish economic growth since. We believe that this trend in occupancy rates is due to rising unemployment, falling real incomes and the resulting lower levels of house-building as well as lower rates of mortgage lending. These factors are of course interrelated, but the impact on occupancy rates are clear where young people are staying at home for longer due to the inability to obtain a mortgage. Another factor is the recent influx of migrants who tend to live at higher densities despite the impacts of the recession.

As such, Oxford Economics estimate that occupancy rates are likely to fall at a slower pace for a number of years, before reverting to the pre-recession downward trend over the longer term. We believe that by once the economic recovery is more sustained, unemployment rates will have decreased sufficiently such that banks will be starting to lend at a similar rate to the period prior to the recession and the rate of house-building is likely to pick up again to meet the demand for housing from the local population.

Carbon emissions

Industry, commercial & energy emissions

The amount of CO2 emissions produced by the industrial, commercial & energy sector in an area in any given year

Data for the amount of CO2 emissions produced by the industry, commercial & energy sector is published by the Department of Energy and Climate Change (DECC) by local authority.

Local authority CO2 emissions forecasts within the industry, commercial & energy sectors were produced by first creating UK carbon weights by industrial sector. This was done using sectoral employment and carbon emissions forecasts from the Oxford Economics Industry Model (OEIM) (note that OE UK carbon emissions forecasts are consistent with the DECC projections). By dividing the emissions in a sector by the number of people in employment in that sector, then dividing this by the emissions for the average UK worker (total UK emissions divided by total UK employment), we are able to get weights showing how carbon intensive specific sectors are.

For each local authority, we then calculate a carbon weighted employment figure based on what the employment breakdown in that area is. So a district which employs significantly more of their workforce in the emissions intensive chemicals and processing industries sector would be forecast to have a higher carbon weighted employment figure than a district which had a large agricultural sector.

This carbon weighted figure is then multiplied by the average emissions per UK employee, to give a pre-adjusted industrial & commercial emissions forecast. The pre-adjusted forecast also takes into account emissions from the energy sector. These emissions are forecast from the OEIM, and we have modelled the energy sector as having no employees as such. Otherwise, we could have a problem where a district with a high number of energy sector employees could be a head office and not really emitting much carbon. So we share the energy sector emissions across districts by multiplying UK energy sector emissions by each district's share of total UK employment.

Finally, we adjust our forecasts based on scaling factors capturing the differences between our calculations for 2005-12 and the 2005-12 DECC data.

Domestic emissions

The total number of emissions produced by households in an area in any given year

Data for the amount of CO2 emissions produced by the domestic sector is published by the Department of Energy and Climate Change (DECC) by local authority.

Local authority CO2 emissions forecasts within the domestic sector are assumed to be a function of population (for example, more people means more households and therefore more domestic energy use). We have calculated the UK average level of domestic emissions per person by taking the total UK household emissions and dividing by UK total population from the OEIM. Then we applied this UK domestic emissions per person ratio to the local authority population forecasts in the EEFM to estimate a pre-adjusted domestic emissions forecast by local authority. Then we adjusted the forecasts based on scaling factors capturing the differences between our calculations for 2005-12 and the DECC data during the same years.

Transport emissions

The total number of emissions produced by the transport sector in an area in any given year

Data for the amount of CO2 emissions produced by the transport sector is published by the Department of Energy and Climate Change (DECC) by local authority.

Local authority CO2 emissions forecasts within the transport sector are assumed to be a function of GVA (for example, more output means more transport use and therefore more emissions from transport). We have calculated the UK average level of transport emissions per unit of GDP by taking the total UK transport emissions and dividing by UK total GDP from the OEIM. Then we applied this UK transport emissions per person ratio to the local authority GVA forecasts in the EEFM to estimate a pre-adjusted transport emissions forecast by local authority. Then we adjusted the forecasts based on scaling factors capturing the differences between our calculations for 2005-12 and the DECC data during the same years.

Land use, land use change and forestry (LULUCF) emissions
The total number of emissions produced via land use (e.g. deforestation, emissions from soils, etc.) in an area in any given year

Data for the amount of CO2 emissions produced by the LULUCF sector is published by the Department of Energy and Climate Change (DECC) by local authority.

Local authority CO2 emissions forecasts within the LULUCF sector are assumed to be a function of land area i.e. more land gives more potential for deforestation, emissions from soils, etc. We have taken land area data, measured in hectares, from the UK Standard Area Measurements for 2007, and assumed that these values have not changed over time. Then we took UK LULUCF emissions data from DECC for 2005-12, and DEFRA forecasts for 2010, 2015 and 2020. For the years in between, we assumed a straight line and extrapolated annual data points and beyond 2020 we assumed a continuation of the trend. Then, using data from DECC for 2005-12, we projected the local authority LULUCF emissions by taking the previous year's emissions, and adding the local authority share (calculated by taking each area's share of total UK land area) of the net change in UK LULUCF emissions in each year.

Total emissions
The total number of CO2 emissions produced in an area in any given year

This is calculated as an aggregate of industry, commercial & energy emissions, domestic emissions, transport emissions and LULUCF emissions.

4: Data used

Labour market

Employees in employment

Description: Annual average employee job estimates

Data: 1991 – 1995 Annual Employment Survey (AES)
1995 – 1997 Annual Employment Survey rescaled to ABI
1998 – 2008 Annual Business Inquiry (ABI)
2008 – 2012 Business Register and Employment Survey (BRES)
2013 – ONS Workforce Jobs (WFJ)

Latest data:
Regional and UK data: 2013
Local authority data: 2012

Next release:

Regional data:	BRES 2013 results, available September 2014
	ONS Workforce Jobs Q2 2014, available September 2014
Local authority data:	BRES 2013 results, available September 2014

There are two key sources for the employee jobs data used in the EEFM – ONS Workforce Jobs (WFJ) and the Business Register and Employment Survey (BRES).

- The WFJ series is reported on a quarterly basis, providing estimates of employee jobs by sector (based on the 2007 Standard Industrial Classification – SIC 2007) for the UK and its constituent government office regions, over the period 1981 Q3 to 2014 Q1.
- The BRES is an employment survey which has replaced the Annual Business Inquiry (ABI). Similar to WFJ, BRES data is based upon the SIC 2007, but it is only published for the years 2008-12. Prior to this, ABI data is available for employee jobs data, however this is based on the old industrial classification (SIC 2003). In contrast with WFJ, BRES data are available at a more disaggregated level of detail – i.e. estimates of employee jobs are available at local authority level and more detailed sector definitions. It is worth noting that the BRES is first and foremost a survey and is therefore subject to volatility, particularly when the level of detail becomes more refined (this is discussed in more detail in Chapter 5). The survey is collected in September of each year and not seasonally adjusted.

UK employee jobs data is taken directly from the ONS WFJ series, where annual averages are estimated from the quarterly data.

There are a number of steps in constructing regional employee jobs, due to changes in sectoral classifications across the various sources, and restrictions on data availability over particular periods of time. Initially, we take employee jobs data for each sector directly from the BRES over the years 2008-12. This relates to September figures and is based upon SIC 2007 sectors.

WFJ data of employee jobs by SIC 2007 sector is available between 1981 Q1 and 2014 Q1. Using this, we are able to construct an annual series of employee jobs by sector for each region over the period 1981-2013 (annual averages are estimated by taking the average of the quarterly data for each year). This, in turn,

enables the backcasting of the 2008 BRES data to 1981. Subsequently, the 2012 BRES data is projected forward for 2013 using growth rates for each sector in the WFJ series to provide a more robust estimate of employee jobs growth in that year.

To ensure the regional series is consistent with the UK employee jobs series, an adjustment factor is applied to all sectors, which converts the data to annual average values (seasonally adjusted).

The final step in estimating employee jobs in each region, government supported trainees (GST) is allocated to each sector. This is published by the ONS on a sectoral basis in the WFJ series. As such GST is simply added to the estimate of employee jobs in each region.

Table 4.1 below shows a comparison between the BRES series of September based employee jobs including GST in 2012, with the level of employee jobs used in the EEFM for the East region in the same year. The percentage difference shows the adjustment made which converts the BRES data to an annual average value.

Table 4.1: Employee jobs (incl. GST), WFJ and EEFM, 2012

	BRES, 2012 (000s)	EEFM 2012 (000s)	% difference
A : Agriculture	27.7	26.1	-5.7%
B : Mining & quarrying	1.3	1.3	-2.8%
C : Manufacturing	235.4	225.1	-4.4%
D : Electricity & gas supply	5.5	5.4	-1.1%
E : Water supply, waste & remediation	19.5	19.4	-0.7%
F : Construction	126.0	126.1	0.1%
G : Wholesale	430.8	436.5	1.3%
H : Transportation & storage	119.7	121.0	1.1%
I : Hotels & restaurants	155.9	155.0	-0.6%
J : Information & communications	83.2	83.9	0.9%
K : Finance	64.3	65.1	1.3%
L : Real estate activities	36.6	36.6	0.0%
M : Professional, scientific & technical activities	181.5	182.0	0.3%
N : Administrative & support service activities	230.3	226.6	-1.6%
O : Public administration & defence	99.2	96.1	-3.2%
P : Education	242.4	236.3	-2.5%
Q : Health	282.5	286.7	1.5%
R : Arts & entertainment	56.1	56.1	-0.1%
S : Other service activities	36.0	39.2	8.8%
Total	**2422.6**	**2424.2**	**0.1%**

Source: ONS Workforce Jobs, BRES, Oxford Economics

For employee jobs data at local authority level, the construction of the series follows a similar method to that applied to constructing the regional series. We take employee jobs by sector over the years 2008-12 from the BRES.

Note that for the agriculture sector, the BRES series excludes employees working in farm agriculture (defined as SIC01000). However, these employees were included in the ABI series published up until 2008, and are also included in the regional WFJ series. In the absence of further information, we take the 2008 ratio of employee jobs in the agriculture sector in each local authority to regional agriculture jobs from the ABI, then hold this constant over the years 2009-12 and apply this ratio to agriculture employee jobs according to WFJ to obtain a reasonable estimate of agriculture employee jobs in each local authority over the period 2009-13.

Prior to 2008, published data on employee jobs is only available based on the 2003 sectoral classifications (from the ABI). Using a data matrix published by the ONS which shows the key changes in sectoral definitions between SIC 2003 and SIC 2007, Oxford Economics have conducted a mapping exercise which has allowed for SIC 2003 sectors to be closely aligned with the new SIC 2007 classification. This has enabled further backcasting of data prior to 2008, resulting in a full time series of employee jobs levels

between 1991-2012, which relates to September based figures (since the BRES series used as the starting point is also September based).

To ensure consistency with the employee jobs series elsewhere in the Oxford Economics suite of models, we adjust the local series to represent annual average values. The percent adjustments applied to the BRES data are shown in table 4.2 below for 2012 allowing model users to see the level of adjustment which has been applied. The adjustments shown here are for the East region and are applied across all local authorities in the East. That is to say that the 0.1% adjustment to construction in 2012 has been applied to the number of construction jobs in each local authority in the East with no exceptions.

Note: for the East Midlands areas, the adjustment factors were estimated in the same way, but using East Midlands data as the basis of the calculation, and a similar method was applied for the South East areas.

Table 4.2: Percentage adjustments applied to BRES data in all local authorities in the East

	BRES 2012 (000s)	EEFM adjusted 2012 (000s)	% difference
Agriculture	27.7	26.1	-5.7%
Mining and Quarrying	1.3	1.3	-2.8%
Food Manufacturing	28.8	29.3	1.8%
General Manufacturing	65.5	65.6	0.1%
Chemicals excl. pharmaceuticals	26.5	26.3	-0.8%
Pharmaceuticals	6.1	6.1	0.3%
Metals manufacturing	32.6	32.8	0.6%
Transport equipment, machinery & equipment, etc	42.2	42.4	0.6%
Electronics	22.6	22.5	-0.1%
Utilities	11.1	11.4	2.8%
Waste and remediation	13.8	13.3	-3.7%
Construction	126.0	126.1	0.1%
Wholesale	164.0	163.8	-0.1%
Retail	266.8	272.7	2.2%
Land Transport	113.9	115.5	1.4%
Water and air transport	5.8	5.5	-4.4%
Hotels and restaurants	155.9	155.0	-0.6%
Publishing and broadcasting	17.3	18.5	6.7%
Telecoms	17.1	17.9	4.9%
Computer related activity	48.8	47.5	-2.7%
Finance	64.3	65.1	1.3%
Real Estate	36.6	36.6	0.0%
Professional services	162.7	162.7	0.0%
Research & development	18.8	19.3	2.9%
Business services	132.4	137.2	3.7%
Employment activities	97.9	89.3	-8.7%
Public administration	99.2	96.1	-3.2%
Education	242.4	236.3	-2.5%
Health and care	282.5	286.7	1.5%
Arts and entertainment	56.1	56.1	-0.1%
Other services	36.0	39.2	8.8%
Total	**2422.6**	**2424.2**	**0.1%**

Source: BRES, ONS Workforce Jobs, EEFM

Full-time/part-time split

Description: Annual average full-time and part-time employee job estimates consistent with the employee job estimates above.

Data: 1991 - 1995 Annual Employment Survey (AES)
1995 - 1997 Annual Employment Survey rescaled to ABI
1998 - 2008 Annual Business Inquiry (ABI)
2008 – 2012 Business Register and Employment Survey (BRES)

Latest data:
Regional data: 2012
Local authority data: 2012

Next release:

Regional data:	BRES 2013 results available September 2014
Local authority data:	BRES 2013 results available September 2014

The EEFM draws its data on full-time and part-time employees in employment from the BRES over the years 2008-12, and the ABI in earlier years. These figures relate to September, whereas those in the Oxford Regional Model use annual average figures (from WFJ). The proportion of part-time employees within each sector is applied to the scaled employees estimates described above. This produces estimates of part-time employee jobs, and since the employee jobs which the part times shares are applied to are themselves annual averages, this converts the estimates of part time employee jobs to annual average values. Full-time employee jobs are calculated by subtracting the part-time estimates from the total, and are therefore annual average values.

Self-employment

Description: Annual average self-employment job estimates

Data:	ONS Workforce Jobs (WFJ) Census 2001 and 2011 for local area estimates
Latest data:	Regional - 2013 Local authorities - 2012
Next release:	Regional data: ONS Workforce Jobs Q2 2014, available September 2014 Local authorities: 2013 data available September 2014

Self-employment data at local level is published in the Annual Population Survey. However, due to sampling errors, the data are volatile, and even in cases where moving averages are used to smooth them out, the level of inaccuracy in the series remains a problem. Oxford Economics estimates self-employment at a sectoral level, using regional employee jobs / self-employment ratios, applying them to the local authority employee jobs series, and finally scaling to total self-employment figures from the Census 2001 and 2011 results.

Self-employment data by sector for the UK and its regions is now published by the ONS in its Workforce Jobs series (WFJ) where data is available on a quarterly basis over the period 1996 Q1 until 2014 Q1. Annual average self employment levels are estimated by taking the average of jobs levels in each quarter of each year. Previously this was estimated by Oxford Economics as sectoral level data was not publicly available.

Prior to 1996, Oxford Economics backcast data by applying growth rates in the self employment series which were used previously in the OE Regional Model. Since the previous self employment series was based on SIC 2003 definitions, we apply the growth rates in the sector which is most closely aligned with the new SIC 2007 sector. For example, the professional services and real estate sectors (both SIC 2007 based) are backcast using growth rates in the overall (SIC 2003 based) business services sector.

Self-employment data for local areas in the EEFM is constructed as follows:

1: Using the regional data described above, ratios of self-employment to employees in employment are calculated. These are then applied to local area employees in employment data for all 31 EEFM sectors. This gives an initial estimate of self-employment by sector in local areas.

2: These initial estimates are scaled to the self-employment totals from the 2001 and 2011 Census results. The scaling factor is held constant across all years to produce a time-series estimate of self-employment by sector which is consistent with the Census results.

3: Finally, this self-employment series is scaled again, this time to the regional sector series described above. This converts the data from people-based to jobs-based estimates, and ensures that the EEFM sector data at local level sum to the regional sector data.

Table 4.3 compares self-employment data for 2011 from the Census with the scaled series used in the EEFM.

Table 4.3: Comparison of self-employment data with EEFM data, 2011

	Census data (000s, 2011)	EEFM scaled data (000s, 2011)	Difference 2011
Babergh	7.7	7.2	-5.9%
Basildon	12.3	11.4	-7.4%
Bedford	10.6	10.1	-4.7%
Braintree	11.8	11.2	-5.1%
Breckland	9.3	8.7	-6.5%
Brentwood	6.3	6.0	-3.9%
Broadland	9.4	8.9	-4.9%
Broxbourne	7.4	7.0	-5.4%
Cambridge	8.6	8.3	-3.1%
Castle Point	6.4	6.2	-4.5%
Chelmsford	12.7	12.1	-4.4%
Colchester	12.0	11.6	-3.6%
Dacorum	11.8	11.3	-3.8%
East Cambridgeshire	6.8	6.4	-5.8%
East Hertfordshire	11.6	11.1	-4.3%
Epping Forest	11.8	11.2	-4.9%
Fenland	6.4	6.0	-6.7%
Forest Heath	4.2	3.9	-5.7%
Great Yarmouth	5.8	5.5	-5.1%
Harlow	5.1	4.9	-4.0%
Hertsmere	9.7	9.3	-4.1%
Huntingdonshire	11.7	11.1	-5.0%
Ipswich	7.6	7.3	-4.0%
King's Lynn and West Norfolk	10.6	9.9	-6.9%
Luton	11.7	11.2	-4.2%
Maldon	5.7	5.4	-5.7%
Mid Bedfordshire	10.2	9.7	-4.7%
Mid Suffolk	8.6	8.1	-6.1%
North Hertfordshire	9.8	9.3	-4.7%
North Norfolk	9.4	8.8	-6.3%
Norwich	9.1	8.8	-3.5%
Peterborough	10.3	9.9	-4.2%
Rochford	6.3	6.0	-5.5%
South Bedfordshire	9.4	9.0	-4.8%
South Cambridgeshire	12.0	11.5	-4.4%
South Norfolk	10.2	9.6	-5.8%
Southend-on-Sea	12.3	11.8	-4.0%
St Albans	11.6	11.2	-3.4%
St Edmundsbury	8.0	7.6	-4.6%
Stevenage	5.4	5.2	-4.1%
Suffolk Coastal	10.0	9.4	-5.7%
Tendring	9.3	8.8	-5.8%
Three Rivers	7.5	7.2	-3.9%
Thurrock	9.7	9.2	-5.3%
Uttlesford	8.0	7.6	-5.2%
Watford	7.1	6.8	-3.4%
Waveney	7.3	6.9	-5.5%
Welwyn Hatfield	7.7	7.4	-4.1%
East of England	**434.6**	**413.5**	**-4.9%**

Source: Census, Oxford Economics

Employees in Armed Forces

Description: Annual average estimate of employees in UK regular Armed Forces stationed in the UK

Data: DASA, ONS Workforce Jobs
Latest data: 2012
Next release: 2013

Regional data on employees in UK Armed Forces is taken from the ONS WFJ series. This provides data on a quarterly basis, from which Oxford Economics derive annual averages.

Local authority level data on employees in UK Armed Forces is taken from DASA, which is scaled to ensure that it is consistent with the regional level data from WFJ. The EEFM adds this number to total employment in public administration and defence as a constant in every forecast year. US Armed Forces do not appear in *any* EEFM employment forecasts. UK civilian employees on UK and USAF bases in the region *are* included in both total and sector forecasts - under 'public administration and defence' – as are US civilian employees in certain limited circumstances.

Table 4.4 below shows the local authority level data for the East areas for 2012, and the final data published in the EEFM. The difference in all areas represents the adjustment applied which ensures that the local data is fully consistent with the regional and UK data.

Table 4.4: Comparison of employees in forces data with EEFM data, 2012

	DASA data (000s, 2012)	EEFM scaled data (000s, 2012)	Difference (000s)
Babergh	0.0	0.0	0.0
Basildon	0.0	0.0	0.0
Bedford	0.0	0.0	0.0
Braintree	0.0	0.0	0.0
Breckland	0.5	0.5	0.0
Brentwood	0.0	0.0	0.0
Broadland	0.0	0.0	0.0
Broxbourne	0.0	0.0	0.0
Cambridge	0.0	0.0	0.0
Castle Point	0.0	0.0	0.0
Chelmsford	0.0	0.0	0.0
Colchester	3.2	3.2	0.0
Dacorum	0.0	0.0	0.0
East Cambridgeshire	0.0	0.0	0.0
East Hertfordshire	0.0	0.0	0.0
Epping Forest	0.0	0.0	0.0
Fenland	0.0	0.0	0.0
Forest Heath	0.0	0.0	0.0
Great Yarmouth	0.0	0.0	0.0
Harlow	0.0	0.0	0.0
Hertsmere	0.0	0.0	0.0
Huntingdonshire	0.5	0.4	0.0
Ipswich	0.0	0.0	0.0
King's Lynn and West Norfolk	2.6	2.6	0.0
Luton	0.0	0.0	0.0
Maldon	0.0	0.0	0.0
Mid Bedfordshire	1.5	1.5	0.0
Mid Suffolk	1.5	1.5	0.0
North Hertfordshire	0.0	0.0	0.0
North Norfolk	0.0	0.0	0.0
Norwich	0.0	0.0	0.0
Peterborough	1.3	1.3	0.0
Rochford	0.0	0.0	0.0
South Bedfordshire	0.0	0.0	0.0
South Cambridgeshire	1.4	1.4	0.0
South Norfolk	0.0	0.0	0.0
Southend-on-Sea	0.0	0.0	0.0
St Albans	0.0	0.0	0.0
St Edmundsbury	1.8	1.8	0.0
Stevenage	0.0	0.0	0.0
Suffolk Coastal	0.7	0.6	0.0
Tendring	0.0	0.0	0.0
Three Rivers	1.1	1.1	0.0

Thurrock	0.0	0.0	0.0
Uttlesford	0.8	0.8	0.0
Watford	0.0	0.0	0.0
Waveney	0.0	0.0	0.0
Welwyn Hatfield	0.0	0.0	0.0
East of England	**17.0**	**17.0**	**-0.1**

Source: DASA, ONS Workforce Jobs, Oxford Economics

Unemployment

Description: Annual average claimant count unemployment – seasonally adjusted

Data: Local authorities: Nomis – Claimant count with rates and proportions
Region: Nomis – Claimant count with rates and proportions

Latest data: 2013

Next release: 2014, Spring 2015

Note: annual average values are calculated from the monthly data.

Table 4.5 compares the raw unemployment data with the scaled series used in the EEFM.

Table 4.5: Comparison of unemployment data with EEFM data, 2013

	NOMIS data (000s 2013)	EEFM scaled data (000s, 2013)	Difference (000s)
Babergh	1.08	1.09	0.00
Basildon	4.29	4.31	0.02
Bedford	3.89	3.91	0.02
Braintree	2.29	2.30	0.01
Breckland	2.03	2.04	0.01
Brentwood	0.81	0.82	0.00
Broadland	1.28	1.29	0.01
Broxbourne	1.75	1.75	0.01
Cambridge	1.46	1.46	0.01
Castle Point	1.39	1.40	0.01
Chelmsford	2.50	2.51	0.01
Colchester	2.84	2.85	0.01
Dacorum	1.96	1.97	0.01
East Cambridgeshire	0.98	0.98	0.00
East Hertfordshire	1.48	1.48	0.01
Epping Forest	2.02	2.03	0.01
Fenland	1.86	1.87	0.01
Forest Heath	0.79	0.79	0.00
Great Yarmouth	3.38	3.39	0.01
Harlow	2.27	2.28	0.01
Hertsmere	1.39	1.39	0.01
Huntingdonshire	1.99	2.00	0.01
Ipswich	3.56	3.58	0.02
King's Lynn and West Norfolk	2.63	2.65	0.01
Luton	5.30	5.33	0.02
Maldon	0.81	0.81	0.00
Mid Bedfordshire	1.53	1.54	0.01
Mid Suffolk	0.96	0.96	0.00
North Hertfordshire	1.79	1.80	0.01
North Norfolk	1.35	1.35	0.01
Norwich	4.07	4.09	0.02
Peterborough	5.67	5.69	0.02
Rochford	1.00	1.01	0.00
South Bedfordshire	1.99	1.99	0.01
South Cambridgeshire	1.11	1.11	0.00
South Norfolk	1.39	1.39	0.01
Southend-on-Sea	4.49	4.51	0.02
St Albans	1.33	1.34	0.01
St Edmundsbury	1.43	1.44	0.01
Stevenage	1.99	2.00	0.01
Suffolk Coastal	1.09	1.09	0.00
Tendring	3.11	3.12	0.01
Three Rivers	0.99	1.00	0.00
Thurrock	3.96	3.97	0.02
Uttlesford	0.63	0.63	0.00

Watford	1.65	1.66	0.01
Waveney	2.61	2.62	0.01
Welwyn Hatfield	1.62	1.63	0.01
East of England	**101.78**	**102.21**	**0.43**

Source: Nomis, Oxford Economics

Residence-based employment

Description: Number of people resident in an area who are in employment (irrespective of where they work)

Data: Local authorities: Census of Population (2001 and 2011)
Annual Population Survey (APS)
Region: Census of Population (2001 and 2011)
Annual Population Survey (APS)

Latest data: 2013

Next release: 2014, available July 2015

The residence employment data used in the EEFM is based on Census and APS data. The resident employment rate from the 2001 and 2011 Census is the key variable used. Prior to 2001, data are extrapolated back to 1994 and forward beyond 2012 using smoothed growth rates from the APS. A moving average of the residence employment rate from the APS data is used here, as the data is volatile at local level. Table 4.6 compares, for 2011, the data used in the EEFM with Census data, and the two series are of course identical.

Table 4.6: Comparison of Census residence-based employment with EEFM data, 2011

	Census 2011 (000s)	EEFM 2011 (000s)	Difference (000s)
Babergh	42.3	42.3	0.0
Basildon	83.0	83.0	0.0
Bedford	75.8	75.8	0.0
Braintree	74.2	74.2	0.0
Breckland	61.3	61.3	0.0
Brentwood	36.3	36.3	0.0
Broadland	61.5	61.5	0.0
Broxbourne	46.2	46.2	0.0
Cambridge	59.4	59.4	0.0
Castle Point	41.4	41.4	0.0
Chelmsford	86.5	86.5	0.0
Colchester	85.6	85.6	0.0
Dacorum	73.4	73.4	0.0
East Cambridgeshire	43.9	43.9	0.0
East Hertfordshire	72.2	72.2	0.0
Epping Forest	61.6	61.6	0.0
Fenland	44.5	44.5	0.0
Forest Heath	31.5	31.5	0.0
Great Yarmouth	41.3	41.3	0.0
Harlow	40.4	40.4	0.0
Hertsmere	49.4	49.4	0.0
Huntingdonshire	89.0	89.0	0.0
Ipswich	65.5	65.5	0.0
King's Lynn and West Norfolk	67.3	67.3	0.0
Luton	89.2	89.2	0.0
Maldon	30.3	30.3	0.0
Mid Bedfordshire	70.9	70.9	0.0
Mid Suffolk	48.6	48.6	0.0
North Hertfordshire	65.0	65.0	0.0
North Norfolk	43.2	43.2	0.0
Norwich	62.4	62.4	0.0
Peterborough	88.0	88.0	0.0
Rochford	40.7	40.7	0.0
South Bedfordshire	61.2	61.2	0.0
South Cambridgeshire	79.1	79.1	0.0
South Norfolk	60.3	60.3	0.0
Southend-on-Sea	81.3	81.3	0.0
St Albans	71.4	71.4	0.0
St Edmundsbury	56.5	56.5	0.0
Stevenage	42.7	42.7	0.0

Suffolk Coastal	58.3	58.3	0.0
Tendring	54.9	54.9	0.0
Three Rivers	44.0	44.0	0.0
Thurrock	77.4	77.4	0.0
Uttlesford	40.8	40.8	0.0
Watford	47.6	47.6	0.0
Waveney	49.2	49.2	0.0
Welwyn Hatfield	53.0	53.0	0.0
East of England	**2,849.5**	**2,849.5**	**0.0**

Source: Census, Oxford Economics

The resident employment rate is calculated dividing the residence employment data in Table 4.6 by the population of ages 16-74. This age range is selected to maintain consistency with the Census. Table 4.7 compares, for 2013, the residence employment rates used within EEFM (which is scaled to the Census) with the raw unsmoothed rates from the APS. The differences are substantial, mainly because the APS uses a working age (16-64) population denominator whereas the EEFM, which is Census-based, uses a 16-74 population denominator. (See chapter 5, which explores other differences between the Census and APS/LFS resident employment rates.)

Table 4.7: Comparison of APS residence-based employment rate with EEFM data, 2013

	APS data (%, 2013)	EEFM scaled data (%, 2013)	Difference (pp)
Babergh	77.0	70.3	-6.7
Basildon	75.6	68.7	-6.9
Bedford	77.0	67.5	-9.5
Braintree	73.1	66.6	-6.5
Breckland	70.3	62.5	-7.8
Brentwood	76.3	65.9	-10.4
Broadland	80.6	70.6	-10.0
Broxbourne	77.3	69.9	-7.4
Cambridge	75.8	61.9	-13.9
Castle Point	70.6	62.9	-7.7
Chelmsford	78.7	72.0	-6.7
Colchester	72.3	65.5	-6.8
Dacorum	74.0	68.3	-5.7
East Cambridgeshire	75.3	69.5	-5.8
East Hertfordshire	81.8	75.0	-6.8
Epping Forest	76.7	73.4	-3.3
Fenland	61.0	61.4	0.4
Forest Heath	78.9	72.5	-6.4
Great Yarmouth	71.2	60.6	-10.6
Harlow	67.3	65.6	-1.7
Hertsmere	76.1	69.5	-6.6
Huntingdonshire	79.0	73.7	-5.3
Ipswich	74.6	68.6	-6.0
King's Lynn and West Norfolk	69.2	61.0	-8.2
Luton	65.0	60.3	-4.7
Maldon	71.8	69.2	-2.6
Mid Bedfordshire	75.7	68.9	-6.9
Mid Suffolk	78.9	68.9	-10.0
North Hertfordshire	72.1	68.4	-3.7
North Norfolk	75.3	60.8	-14.5
Norwich	72.1	62.3	-9.8
Peterborough	69.5	66.5	-3.0
Rochford	75.7	66.3	-9.4
South Bedfordshire	71.7	68.5	-3.2
South Cambridgeshire	79.3	72.7	-6.6
South Norfolk	86.4	74.6	-11.8
Southend-on-Sea	71.2	65.0	-6.2
St Albans	77.2	72.0	-5.2
St Edmundsbury	84.0	74.5	-9.5
Stevenage	83.4	74.1	-9.3
Suffolk Coastal	79.7	65.8	-13.9
Tendring	64.3	55.3	-9.0
Three Rivers	67.0	68.5	1.5
Thurrock	70.7	67.9	-2.8
Uttlesford	84.3	75.1	-9.2
Watford	84.3	77.7	-6.6
Waveney	67.6	58.5	-9.1
Welwyn Hatfield	74.2	67.6	-6.6
East of England	**75.5**	**67.6**	**-7.9**

Source: Census, APS, Oxford Economics

Total workplace employment (people)
Description: the number of people who work in an area (irrespective of where they live)

Data: Local authorities: Census of Population
Region: Census of Population

Latest data: 2011

This series is constructed on the basis that all full-time employee jobs are filled by one person only, but that one person could have two or more part-time jobs. For this reason, we apply a ratio of 0.75 people per part-time job to the total part-time jobs estimate. In other words, 100 part-time jobs implies 75 people in employment, with the remaining 25 part-time jobs taken by people with other part-time (or full-time) jobs. (This ratio is the one most consistent with Census results.)

We convert the self-employed jobs series to a people-based series in a similar way. In this case, we assume a jobs / people ratio of 0.93 – that is, 100 self-employment jobs equates to 93 (self-employed) people in employment. (This ratio is generated from Census data.)

Finally, these estimates are scaled for 2011 to ensure they are consistent with the Census.

Table 4.8: Comparison of Census employment data with EEFM data, 2011

	Census employment, (000s, 2011)	EEFM data (000s, 2011)	Difference (%)
Babergh	35.7	35.7	0.0%
Basildon	82.8	82.8	0.0%
Bedford	74.5	74.5	0.0%
Braintree	57.6	57.6	0.0%
Breckland	50.5	50.5	0.0%
Brentwood	33.9	33.9	0.0%
Broadland	47.3	47.3	0.0%
Broxbourne	38.9	38.9	0.0%
Cambridge	94.2	94.2	0.0%
Castle Point	25.4	25.4	0.0%
Chelmsford	82.6	82.6	0.0%
Colchester	83.7	83.7	0.0%
Dacorum	66.2	66.2	0.0%
East Cambridgeshire	31.1	31.1	0.0%
East Hertfordshire	58.2	58.2	0.0%
Epping Forest	47.6	47.6	0.0%
Fenland	38.2	38.2	0.0%
Forest Heath	32.9	32.9	0.0%
Great Yarmouth	40.0	40.0	0.0%
Harlow	39.8	39.8	0.0%
Hertsmere	46.4	46.4	0.0%
Huntingdonshire	77.4	77.4	0.0%
Ipswich	71.6	71.6	0.0%
King's Lynn and West Norfolk	63.5	63.5	0.0%
Luton	90.0	90.0	0.0%
Maldon	23.0	23.0	0.0%
Mid Bedfordshire	50.9	50.9	0.0%
Mid Suffolk	41.7	41.7	0.0%
North Hertfordshire	52.4	52.4	0.0%
North Norfolk	39.6	39.6	0.0%
Norwich	89.2	89.2	0.0%
Peterborough	101.2	101.2	0.0%
Rochford	26.7	26.7	0.0%
South Bedfordshire	47.3	47.3	0.0%
South Cambridgeshire	74.4	74.4	0.0%
South Norfolk	54.4	54.4	0.0%
Southend-on-Sea	72.1	72.1	0.0%
St Albans	61.5	61.5	0.0%
St Edmundsbury	58.4	58.4	0.0%
Stevenage	44.8	44.8	0.0%
Suffolk Coastal	54.4	54.4	0.0%
Tendring	44.3	44.3	0.0%
Three Rivers	35.4	35.4	0.0%
Thurrock	64.2	64.2	0.0%
Uttlesford	40.3	40.3	0.0%

Watford	51.5	51.5	0.0%
Waveney	45.0	45.0	0.0%
Welwyn Hatfield	68.4	68.4	0.0%
East of England	**2,650.8**	**2,650.8**	**0.0%**

Source: Census, Oxford Economics

Commuting

Description: The number of people that travel into, and out of, an area for work

Data: Local authorities: Constructed by Oxford Economics
Region: Constructed by Oxford Economics

Latest data: 2011

Net commuting flows in the EEFM are worked out by subtracting residence employment from total workplace employment (people). The net commuting flows for 2011 match those from the Census, as both the residence employment and the total workplace employment (people) series have already been scaled to the Census. Table 4.9 sets out the data.

Table 4.9: Comparison of net commuting flows from the Census with EEFM data, 2011

	Census net commuting, (000s, 2011)	EEFM data (000s, 2011)	Difference (%)
Babergh	-6.5	-6.5	0.0%
Basildon	-0.2	-0.2	0.0%
Bedford	-1.3	-1.3	0.0%
Braintree	-16.6	-16.6	0.0%
Breckland	-10.8	-10.8	0.0%
Brentwood	-2.4	-2.4	0.0%
Broadland	-14.3	-14.3	0.0%
Broxbourne	-7.4	-7.4	0.0%
Cambridge	34.8	34.8	0.0%
Castle Point	-16.1	-16.1	0.0%
Chelmsford	-3.8	-3.8	0.0%
Colchester	-1.9	-1.9	0.0%
Dacorum	-7.2	-7.2	0.0%
East Cambridgeshire	-12.8	-12.8	0.0%
East Hertfordshire	-14.0	-14.0	0.0%
Epping Forest	-14.0	-14.0	0.0%
Fenland	-6.4	-6.4	0.0%
Forest Heath	1.4	1.4	0.0%
Great Yarmouth	-1.3	-1.3	0.0%
Harlow	-0.6	-0.6	0.0%
Hertsmere	-3.1	-3.1	0.0%
Huntingdonshire	-11.6	-11.6	0.0%
Ipswich	6.1	6.1	0.0%
King's Lynn and West Norfolk	-3.8	-3.8	0.0%
Luton	0.8	0.8	0.0%
Maldon	-7.3	-7.3	0.0%
Mid Bedfordshire	-19.9	-19.9	0.0%
Mid Suffolk	-6.9	-6.9	0.0%
North Hertfordshire	-12.5	-12.5	0.0%
North Norfolk	-3.6	-3.6	0.0%
Norwich	26.8	26.8	0.0%
Peterborough	13.1	13.1	0.0%
Rochford	-14.0	-14.0	0.0%
South Bedfordshire	-14.0	-14.0	0.0%
South Cambridgeshire	-4.7	-4.7	0.0%
South Norfolk	-6.0	-6.0	0.0%
Southend-on-Sea	-9.3	-9.3	0.0%
St Albans	-9.8	-9.8	0.0%
St Edmundsbury	1.9	1.9	0.0%
Stevenage	2.1	2.1	0.0%
Suffolk Coastal	-3.9	-3.9	0.0%
Tendring	-10.5	-10.5	0.0%
Three Rivers	-8.6	-8.6	0.0%
Thurrock	-13.2	-13.2	0.0%
Uttlesford	-0.5	-0.5	0.0%
Watford	3.8	3.8	0.0%
Waveney	-4.2	-4.2	0.0%
Welwyn Hatfield	15.4	15.4	0.0%
East of England	**-198.7**	**-198.7**	**0.0%**

Source: Census, Oxford Economics

Demography

Population – total

Description: total population, all ages

Data: Local authorities: National Statistics, mid year population estimates
Region: National Statistics, mid year population estimates

Latest data: 2013
Next release: 2014, available summer 2015

ONS's population mid-year estimates are used directly in the EEFM so, as Table 4.10 shows, there is no difference between them and EEFM input data for most areas. Some areas have been adjusted to reflect US Air Force personnel.

Table 4.10: Comparison of population data with EEFM data, 2013

	Mid year estimates (000s, 2013)	EEFM data (000s, 2013)	Difference (%)
Babergh	88.3	88.3	0.0%
Basildon	178.4	178.3	0.0%
Bedford	161.4	161.4	0.0%
Braintree	149.1	149.1	0.0%
Breckland	132.6	133.0	0.3%
Brentwood	74.5	74.5	0.0%
Broadland	125.5	125.5	0.0%
Broxbourne	95.0	95.0	0.0%
Cambridge	126.5	126.7	0.1%
Castle Point	88.6	88.6	0.0%
Chelmsford	170.3	170.2	0.0%
Colchester	177.6	177.6	0.0%
Dacorum	148.2	148.2	0.0%
East Cambridgeshire	85.4	85.9	0.6%
East Hertfordshire	141.1	141.1	0.0%
Epping Forest	127.2	127.2	0.0%
Fenland	96.7	96.7	0.0%
Forest Heath	63.3	61.3	-3.2%
Great Yarmouth	97.8	97.8	0.0%
Harlow	83.4	83.4	0.0%
Hertsmere	101.3	101.3	0.0%
Huntingdonshire	172.1	172.0	0.0%
Ipswich	134.7	134.7	0.0%
King's Lynn and West Norfolk	148.8	149.2	0.3%
Luton	208.0	208.0	0.0%
Maldon	62.2	62.2	0.0%
Mid Bedfordshire	141.4	141.4	0.0%
Mid Suffolk	98.0	98.0	0.0%
North Hertfordshire	129.3	129.3	0.0%
North Norfolk	102.0	102.0	0.0%
Norwich	135.9	135.9	0.0%
Peterborough	188.4	188.3	0.0%
Rochford	83.9	83.9	0.0%
South Bedfordshire	123.1	123.1	0.0%
South Cambridgeshire	151.4	151.4	0.0%
South Norfolk	127.6	127.6	0.0%
Southend-on-Sea	175.8	175.8	0.0%
St Albans	143.1	143.1	0.0%
St Edmundsbury	111.3	111.8	0.4%
Stevenage	85.5	85.5	0.0%
Suffolk Coastal	124.4	124.4	0.0%
Tendring	138.7	138.7	0.0%
Three Rivers	89.5	89.5	0.0%
Thurrock	160.8	160.8	0.0%
Uttlesford	82.7	82.7	0.0%
Watford	93.7	93.7	0.0%
Waveney	116.0	115.9	0.0%
Welwyn Hatfield	114.1	114.0	0.0%
East of England	**5,954.2**	**5,953.5**	**0.0%**

Source: ONS, Oxford Economics

Working age population

Description: Prior to the EEFM 2013 update, working age population was defined as all people aged 16-retirement age. However, the ONS no longer publishes this series. Therefore, we have changed the definition of working age population to be defined as all people aged 16-64.

Data: Local authorities: National Statistics, mid year population estimates
Region: National Statistics, mid year population estimates

Latest data: 2013
Next release: 2014, available summer 2015

Similar to total population, working age population defined as all people aged 16-64 is used directly within the EEFM. As such, there are no differences between the published data and that used in the EEFM, with the exception of areas adjusted for US Air Force personnel. This is shown in table 4.11 below.

Table 4.11: Comparison of working age population data with EEFM data, 2013

	Mid year estimates (000s, 2013)	EEFM data (000s, 2013)	Difference (%)
Babergh	51.75	51.73	0.0%
Basildon	112.0	112.0	0.0%
Bedford	101.9	101.9	0.0%
Braintree	92.9	92.8	0.0%
Breckland	78.7	79.1	0.5%
Brentwood	45.9	45.9	0.0%
Broadland	74.6	74.6	0.0%
Broxbourne	59.5	59.5	0.0%
Cambridge	92.1	92.3	0.2%
Castle Point	52.9	52.9	0.0%
Chelmsford	107.7	107.7	0.0%
Colchester	114.7	114.7	0.0%
Dacorum	94.3	94.3	0.0%
East Cambridgeshire	52.6	53.1	0.9%
East Hertfordshire	89.8	89.8	0.0%
Epping Forest	79.2	79.2	0.0%
Fenland	59.0	59.0	0.0%
Forest Heath	40.6	38.5	-5.0%
Great Yarmouth	58.6	58.6	0.0%
Harlow	52.8	52.8	0.0%
Hertsmere	63.1	63.1	0.0%
Huntingdonshire	108.9	108.9	0.0%
Ipswich	87.2	87.1	0.0%
King's Lynn and West Norfolk	87.2	87.6	0.6%
Luton	134.7	134.7	0.0%
Maldon	37.6	37.6	0.0%
Mid Bedfordshire	90.3	90.3	0.0%
Mid Suffolk	58.9	58.9	0.0%
North Hertfordshire	80.9	80.9	0.0%
North Norfolk	56.4	56.4	0.0%
Norwich	93.0	92.9	0.0%
Peterborough	120.8	120.7	0.0%
Rochford	50.8	50.8	0.0%
South Bedfordshire	78.6	78.6	0.0%
South Cambridgeshire	94.1	94.1	0.0%
South Norfolk	75.2	75.1	0.0%
Southend-on-Sea	109.5	109.5	0.0%
St Albans	88.6	88.5	0.0%
St Edmundsbury	68.0	68.5	0.7%
Stevenage	55.3	55.3	0.0%
Suffolk Coastal	71.7	71.7	0.0%
Tendring	76.4	76.4	0.0%
Three Rivers	55.7	55.7	0.0%
Thurrock	103.8	103.8	0.0%
Uttlesford	50.8	50.8	0.0%
Watford	61.9	61.9	0.0%
Waveney	66.6	66.6	0.0%
Welwyn Hatfield	75.1	75.0	0.0%
East of England	**3,712.5**	**3,711.8**	**0.0%**

Source: ONS, Oxford Economics

Young population

Description: population aged 0-15

Data:	Local authorities:	National Statistics, mid year population estimates
	Region:	National Statistics, mid year population estimates

Latest data: 2013

Next release: 2014, available summer 2015

Notes: In the Spring 2010 run, the EEFM definition of working age was changed to exclude 15 year-olds.

Young population for the East region in the Model is estimated as the residual between total population, working age population and elderly population. As such, data for young population used in the Model matches up directly with the published source.

Note: the reason that we estimate young population as a residual rather than use the data directly is to allow for the forecasting of these variables, and also to ensure that the identities still hold true (i.e. that total population will be equal to the sum of young, working age and elderly population).

Elderly population

Description: Prior to the EEFM 2013 update, elderly population data was defined as male population aged 65+ plus female population aged retirement age+. However since the EEFM 2013 update, the definition of working age population was changed since ONS no longer publishes the number of people aged 16 to retirement age. Therefore, elderly population is defined as all people aged 65+.

Data:	Local authorities:	National Statistics, mid year population estimates
	Region:	National Statistics, mid year population estimates

Latest data: 2013

Next release: 2014, available summer 2015

Similar to the young and working age population, the elderly population is used directly from the published source. Therefore there are no differences between the final EEFM estimates and the published data.

Net migration and other changes

Description: net migration flows to/from an area, including other changes (e.g. boundary adjustments, prisoner movements, boarding school pupils, etc.)

Data:	Local authorities:	National Statistics, components of change
	Region:	National Statistics, components of change

Latest data: 2013

Next release: 2014, available summer 2015

The net migration figures used in the EEFM are based initially on ONS population mid-year estimates 'components of change' data, specifically the category 'net migration and other changes.' But these are then

scaled upwards to the regional net migration data for the East of England used in the Oxford Regional Model, which are sourced from *Population Trends* and differ slightly from the 'components of change' data due to minor methodological differences. Table 4.12 shows that the difference regionally between the 'components of change' series and the data actually used in the EEFM is only 1,480 migrants in 2013. (The scaling process allocates these to local authorities in accordance with their share of the region's total population.)

Table 4.12: Comparison of 'net migration and other changes' data with EEFM data, 2013

	Net migration and other changes (000s, 2013)	EEFM data (000s, 2013)	Difference (000s)
Babergh	0.50	0.52	0.02
Basildon	1.00	1.04	0.04
Bedford	1.40	1.44	0.04
Braintree	0.40	0.43	0.03
Breckland	0.70	1.13	0.43
Brentwood	0.30	0.32	0.02
Broadland	0.60	0.63	0.03
Broxbourne	0.00	0.02	0.02
Cambridge	0.80	1.03	0.23
Castle Point	0.50	0.52	0.02
Chelmsford	0.40	0.44	0.04
Colchester	0.80	0.84	0.04
Dacorum	0.90	0.93	0.03
East Cambridgeshire	-0.20	0.32	0.52
East Hertfordshire	1.20	1.23	0.03
Epping Forest	0.60	0.63	0.03
Fenland	0.60	0.62	0.02
Forest Heath	2.00	0.01	-1.99
Great Yarmouth	0.30	0.32	0.02
Harlow	0.00	0.02	0.02
Hertsmere	0.20	0.22	0.02
Huntingdonshire	0.30	0.34	0.04
Ipswich	-0.60	-0.57	0.03
King's Lynn and West Norfolk	0.10	0.63	0.53
Luton	0.10	0.15	0.05
Maldon	0.30	0.31	0.01
Mid Bedfordshire	1.76	1.80	0.03
Mid Suffolk	0.40	0.42	0.02
North Hertfordshire	0.50	0.53	0.03
North Norfolk	0.90	0.92	0.02
Norwich	0.80	0.83	0.03
Peterborough	0.20	0.24	0.04
Rochford	0.10	0.12	0.02
South Bedfordshire	1.54	1.56	0.03
South Cambridgeshire	-0.30	-0.26	0.04
South Norfolk	1.50	1.53	0.03
Southend-on-Sea	0.50	0.54	0.04
St Albans	0.40	0.43	0.03
St Edmundsbury	-0.50	0.03	0.53
Stevenage	0.20	0.22	0.02
Suffolk Coastal	0.50	0.53	0.03
Tendring	1.20	1.23	0.03
Three Rivers	0.50	0.52	0.02
Thurrock	0.10	0.14	0.04
Uttlesford	1.20	1.22	0.02
Watford	1.20	1.22	0.02
Waveney	0.50	0.53	0.03
Welwyn Hatfield	1.60	1.63	0.03
East of England	**28.00**	**29.48**	**1.48**

Source: ONS, Oxford Economics

Natural increase

Description: the numbers of births minus deaths

Data: Local authorities: National Statistics, components of change
Region: National Statistics, components of change

Latest data: 2013

Next release: 2014, available summer 2015

The natural increase data used in the EEFM is the residual of the total population in the current year (see above) once total population in the previous year and net migration over the year have both been subtracted. This formula implies that since the net migration data in the EEFM is *higher* than ONS's "components of change" estimate of net migration (Table 4.12 above), the natural increase data in the EEFM should be *lower* than the "components of change" figure. Table 4.13 shows that this is indeed the case, although the size of the difference is not exactly the same.

Table 4.13: Comparison of natural increase data with EEFM data, 2013

	Natural increase, (000s, 2013)	EEFM data (000s, 2013)	Difference (000s)
Babergh	-0.10	-0.15	-0.05
Basildon	0.90	0.85	-0.05
Bedford	0.70	0.74	0.04
Braintree	0.40	0.29	-0.11
Breckland	0.00	0.00	0.00
Brentwood	0.10	0.12	0.02
Broadland	-0.30	-0.35	-0.05
Broxbourne	0.50	0.47	-0.03
Cambridge	0.50	0.49	-0.01
Castle Point	-0.20	-0.17	0.03
Chelmsford	0.50	0.48	-0.02
Colchester	0.90	0.78	-0.12
Dacorum	0.60	0.53	-0.07
East Cambridgeshire	0.50	0.48	-0.02
East Hertfordshire	0.50	0.38	-0.12
Epping Forest	0.40	0.46	0.06
Fenland	0.20	0.11	-0.09
Forest Heath	0.50	0.51	0.01
Great Yarmouth	-0.10	-0.10	0.00
Harlow	0.70	0.68	-0.02
Hertsmere	0.40	0.34	-0.06
Huntingdonshire	0.70	0.69	-0.01
Ipswich	0.80	0.79	-0.01
King's Lynn and West Norfolk	0.00	-0.01	-0.01
Luton	2.00	2.00	0.00
Maldon	0.00	-0.07	-0.07
Mid Bedfordshire	0.70	0.64	-0.06
Mid Suffolk	0.00	-0.06	-0.06
North Hertfordshire	0.40	0.36	-0.04
North Norfolk	-0.60	-0.67	-0.07
Norwich	0.80	0.80	0.00
Peterborough	1.80	1.76	-0.04
Rochford	0.00	-0.08	-0.08
South Bedfordshire	0.60	0.56	-0.05
South Cambridgeshire	0.70	0.63	-0.07
South Norfolk	0.10	0.06	-0.04
Southend-on-Sea	0.50	0.42	-0.08
St Albans	0.80	0.76	-0.04
St Edmundsbury	0.20	0.18	-0.02
Stevenage	0.50	0.46	-0.04
Suffolk Coastal	-0.40	-0.45	-0.05
Tendring	-0.80	-0.80	0.00
Three Rivers	0.20	0.17	-0.03
Thurrock	1.20	1.18	-0.02
Uttlesford	0.30	0.21	-0.09
Watford	0.80	0.78	-0.02
Waveney	-0.20	-0.24	-0.04
Welwyn Hatfield	0.50	0.39	-0.11
East of England	**19.20**	**17.39**	**-1.81**

Source: ONS, Oxford Economics

Output

GVA

Description: Gross Value Added in real 2010 prices
(Note: GVA data were rebased in the EEFM 2014 run of the Model so that the figures presented in the EEFM were consistent with the Blue Book.)

Data: Local authorities: Constructed by Oxford Economics, Regional Accounts
Region: National Statistics, Regional Accounts

Latest data: Regional data: 2012 totals and sector data
Local authority data: 2011 totals and sector data

Next release: Regional data: 2013 totals and sector data available December 2014
Local authority data: 2012 totals and sector data available December 2014

Regional GVA data by 19 sectors is taken from "Regional Accounts." (These are scaled to match the UK National Accounts, as published in the "Blue Book." Volume indices by sector are taken from the Blue Book to convert the GVA data into real 2010 prices.)

Local authority GVA forecasts are obtained by multiplying forecast regional GVA per job (productivity) in a sector (which comes from the Regional Model) by forecast total workplace employment (jobs) in that sector (from the EEFM) for each local authority. As described earlier, these are then subject to wage differential adjustments and scaling to the NUTS 3 level data published in Regional Accounts. Scaling operations rarely achieve total precision, but as Table 4.14 shows, the differences between the Regional Accounts NUTS 3 data and those used in the EEFM are very small. (Note: the data are presented for 2010 which, as it is the base year, is the only year in which nominal and real GVA will be equal.)

Table 4.14: Comparison of GVA data with EEFM data, 2010 (£m)

	Regional Accounts GVA (£m, 2010)	EEFM GVA (£m, 2010)	Difference (%)
Peterborough	4,242	4,253	0.2%
Cambridgeshire CC	13,788	13,742	-0.3%
Norfolk	14,030	14,066	0.3%
Suffolk	12,820	12,845	0.2%
Luton	4,109	4,093	-0.4%
Bedfordshire CC	6,868	6,876	0.1%
Hertfordshire	26,512	26,474	-0.1%
Southend-on-Sea	2,670	2,672	0.1%
Thurrock	2,470	2,477	0.3%
Essex CC	24,642	24,659	0.1%

Source: Regional Accounts, Oxford Economics

Housing

Demand for dwellings

Description: Stock of dwellings.

Data: Local authorities: DCLG – dwelling stock estimates

Latest data: 2013
Next release: 2014, data due in 2015

The source of data for dwelling stock changed in the EEFM 2013 update. Previously, we took data from the Housing Strategy Statistical Appendix, however this no longer includes estimates of private dwelling stock. Therefore, based on recommendations by DCLG, dwelling stock data are sourced from table 125 which provides estimates of total dwelling stock, and table 615 which provides estimates of vacant dwelling stock. The difference between these two series is therefore occupied dwelling stock.

DCLG data on the stock of dwellings by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.15. The forecast variable "demand for dwellings" seeks to accommodate forecast new households *using Oxford Economics occupancy rate assumptions*.

Table 4.15: Comparison of DCLG dwelling stock data with EEFM data, 2013

	DCLG data (000s, 2013)	EEFM data (000s, 2013)	Difference (%)
Babergh	39.5	39.5	0.0%
Basildon	75.3	75.3	0.0%
Bedford	68.9	68.9	0.0%
Braintree	63.2	63.2	0.0%
Breckland	58.1	58.1	0.0%
Brentwood	32.4	32.4	0.0%
Broadland	55.3	55.3	0.0%
Broxbourne	39.6	39.6	0.0%
Cambridge	49.1	49.1	0.0%
Castle Point	37.9	37.9	0.0%
Chelmsford	71.7	71.7	0.0%
Colchester	76.2	76.2	0.0%
Dacorum	62.6	62.6	0.0%
East Cambridgeshire	36.4	36.4	0.0%
East Hertfordshire	59.4	59.4	0.0%
Epping Forest	54.8	54.8	0.0%
Fenland	42.6	42.6	0.0%
Forest Heath	28.2	28.2	0.0%
Great Yarmouth	44.7	44.7	0.0%
Harlow	36.3	36.3	0.0%
Hertsmere	41.5	41.5	0.0%
Huntingdonshire	72.7	72.7	0.0%
Ipswich	59.7	59.7	0.0%
King's Lynn and West Norfolk	74.9	74.9	0.0%
Luton	76.7	76.7	0.0%
Maldon	27.4	27.4	0.0%
Mid Bedfordshire	58.1	58.1	0.0%
Mid Suffolk	42.6	42.6	0.0%
North Hertfordshire	55.7	55.7	0.0%
North Norfolk	53.8	53.8	0.0%
Norwich	64.0	64.0	0.0%
Peterborough	78.3	78.3	0.0%
Rochford	34.6	34.6	0.0%
South Bedfordshire	52.8	52.8	0.0%
South Cambridgeshire	63.0	63.0	0.0%
South Norfolk	56.0	56.0	0.0%
Southend-on-Sea	79.2	79.2	0.0%
St Albans	58.6	58.6	0.0%
St Edmundsbury	47.5	47.5	0.0%
Stevenage	35.8	35.8	0.0%
Suffolk Coastal	58.9	58.9	0.0%
Tendring	67.4	67.4	0.0%
Three Rivers	36.5	36.5	0.0%
Thurrock	64.5	64.5	0.0%
Uttlesford	33.9	33.9	0.0%
Watford	38.4	38.4	0.0%
Waveney	54.9	54.9	0.0%
Welwyn Hatfield	46.0	46.0	0.0%
East of England	**2,565.6**	**2,565.6**	**0.0%**

Source: DCLG, Oxford Economics

House prices

Description: House prices

Data: Local authorities: DCLG – Land Registry house prices, table 585
Region: DCLG – Mix-adjusted house prices, table 593

Latest data: 2013
Next release: 2014, available 2015

Data on house prices by local authority is taken from DCLG and incorporated into the EEFM, so of course the two series match exactly, as shown in Table 4.16. There is scope to do simple house price forecasts in the EEFM on the basis of these, though this has so far not been used.

Table 4.16: Comparison of DCLG house prices data with EEFM data, 2013

	DCLG data (£000s, 2013)	EEFM data (£000s, 2013)	Difference (%)
Babergh	242.0	242.0	0.0%
Basildon	226.8	226.8	0.0%
Bedford	218.0	218.0	0.0%
Braintree	223.8	223.8	0.0%
Breckland	180.7	180.7	0.0%
Brentwood	346.8	346.8	0.0%
Broadland	199.8	199.8	0.0%
Broxbourne	253.9	253.9	0.0%
Cambridge	333.5	333.5	0.0%
Castle Point	214.2	214.2	0.0%
Chelmsford	270.3	270.3	0.0%
Colchester	211.4	211.4	0.0%
Dacorum	325.9	325.9	0.0%
East Cambridgeshire	214.5	214.5	0.0%
East Hertfordshire	317.0	317.0	0.0%
Epping Forest	359.5	359.5	0.0%
Fenland	151.6	151.6	0.0%
Forest Heath	180.1	180.1	0.0%
Great Yarmouth	155.2	155.2	0.0%
Harlow	196.3	196.3	0.0%
Hertsmere	393.9	393.9	0.0%
Huntingdonshire	210.9	210.9	0.0%
Ipswich	164.1	164.1	0.0%
King's Lynn and West Norfolk	180.2	180.2	0.0%
Luton	167.6	167.6	0.0%
Maldon	243.3	243.3	0.0%
Mid Bedfordshire	248.9	248.9	0.0%
Mid Suffolk	210.8	210.8	0.0%
North Hertfordshire	273.8	273.8	0.0%
North Norfolk	206.0	206.0	0.0%
Norwich	175.6	175.6	0.0%
Peterborough	161.1	161.1	0.0%
Rochford	242.8	242.8	0.0%
South Bedfordshire	216.6	216.6	0.0%
South Cambridgeshire	289.9	289.9	0.0%
South Norfolk	210.5	210.5	0.0%
Southend-on-Sea	221.1	221.1	0.0%
St Albans	439.6	439.6	0.0%
St Edmundsbury	218.0	218.0	0.0%
Stevenage	194.6	194.6	0.0%
Suffolk Coastal	250.4	250.4	0.0%
Tendring	176.7	176.7	0.0%
Three Rivers	415.1	415.1	0.0%
Thurrock	187.0	187.0	0.0%
Uttlesford	341.7	341.7	0.0%
Watford	268.0	268.0	0.0%
Waveney	180.4	180.4	0.0%
Welwyn Hatfield	315.3	315.3	0.0%
East of England	**242.5**	**242.5**	**0.0%**

Source: DCLG, Oxford Economics

Number of households

Description: Households

Data: Estimated by Oxford Economics

Latest data: 2013
Next release: 2014, data due in 2015

Table 4.17 shows the difference between the most recent DCLG household estimates by local authority, and the household data used in EEFM. At regional level, the series only differ by 0.1%, although the differences can be somewhat greater for individual local authorities.

Table 4.17: Comparison of DCLG household estimates with EEFM data, 2013

	DCLG data (000s, 2013)	EEFM data (000s, 2013)	Difference (%)
Babergh	38.1	38.2	0.2%
Basildon	74.1	73.6	-0.6%
Bedford	65.7	67.0	2.0%
Braintree	62.7	61.6	-1.9%
Breckland	56.1	56.0	-0.2%
Brentwood	31.3	31.4	0.1%
Broadland	54.2	53.8	-0.8%
Broxbourne	38.2	38.5	0.6%
Cambridge	45.9	48.2	5.0%
Castle Point	37.0	37.3	0.9%
Chelmsford	71.0	70.2	-1.0%
Colchester	74.4	74.3	-0.1%
Dacorum	61.0	61.4	0.7%
East Cambridgeshire	36.5	35.5	-2.7%
East Hertfordshire	58.3	58.1	-0.4%
Epping Forest	53.2	53.5	0.7%
Fenland	42.1	41.3	-2.0%
Forest Heath	26.1	26.7	2.5%
Great Yarmouth	43.1	42.8	-0.6%
Harlow	35.3	35.6	0.9%
Hertsmere	40.9	40.6	-0.9%
Huntingdonshire	71.1	70.5	-0.9%
Ipswich	58.5	57.6	-1.6%
King's Lynn and West Norfolk	64.3	69.1	7.4%
Luton	76.5	75.3	-1.6%
Maldon	26.3	26.3	0.0%
Mid Bedfordshire	58.3	56.5	-3.1%
Mid Suffolk	41.6	41.0	-1.3%
North Hertfordshire	54.8	54.5	-0.6%
North Norfolk	47.0	48.4	2.9%
Norwich	61.6	61.3	-0.5%
Peterborough	76.4	74.9	-1.9%
Rochford	34.2	33.8	-1.2%
South Bedfordshire	49.9	51.5	3.1%
South Cambridgeshire	62.6	61.4	-1.9%
South Norfolk	54.2	53.9	-0.5%
Southend-on-Sea	75.9	76.1	0.2%
St Albans	57.3	57.4	0.3%
St Edmundsbury	46.7	45.7	-2.0%
Stevenage	35.4	35.3	-0.2%
Suffolk Coastal	55.1	54.8	-0.4%
Tendring	64.0	64.0	-0.1%
Three Rivers	36.3	35.8	-1.5%
Thurrock	64.4	63.5	-1.3%
Uttlesford	32.5	32.7	0.8%
Watford	37.2	37.4	0.6%
Waveney	51.7	51.6	-0.2%
Welwyn Hatfield	45.6	45.0	-1.2%
East of England	**2,484.6**	**2,480.9**	**-0.1%**

Source: DCLG, Oxford Economics

Carbon emissions

Industry, commercial & energy emissions

Description: CO2 emissions from the industry, commercial & energy sectors

Data: Local authorities: DECC – Full local CO2 emissions estimates

Latest data: 2012
Next release: 2013, data due in 2015

DECC data on the CO2 emissions from the industry, commercial & energy sectors by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.18.

Table 4.18: Comparison of DECC CO2 industry, commercial & energy emissions with EEFM data, 2012

	DECC data (k tonnes 2012)	EEFM data (k tonnes, 2012)	Difference (%)
Babergh	209.4	209.4	0.0%
Basildon	374.2	374.2	0.0%
Bedford	329.1	329.1	0.0%
Braintree	286.3	286.3	0.0%
Breckland	287.1	287.1	0.0%
Brentwood	128.8	128.8	0.0%
Broadland	392.3	392.3	0.0%
Broxbourne	182.7	182.7	0.0%
Cambridge	436.8	436.8	0.0%
Castle Point	76.3	76.3	0.0%
Chelmsford	348.1	348.1	0.0%
Colchester	310.3	310.3	0.0%
Dacorum	238.1	238.1	0.0%
East Cambridgeshire	193.8	193.8	0.0%
East Hertfordshire	260.9	260.9	0.0%
Epping Forest	212.8	212.8	0.0%
Fenland	459.2	459.2	0.0%
Forest Heath	193.4	193.4	0.0%
Great Yarmouth	154.3	154.3	0.0%
Harlow	286.1	286.1	0.0%
Hertsmere	220.5	220.5	0.0%
Huntingdonshire	453.6	453.6	0.0%
Ipswich	227.2	227.2	0.0%
King's Lynn and West Norfolk	1,033.8	1,033.8	0.0%
Luton	337.0	337.0	0.0%
Maldon	116.1	116.1	0.0%
Mid Bedfordshire	230.9	230.9	0.0%
Mid Suffolk	237.6	237.6	0.0%
North Hertfordshire	265.6	265.6	0.0%
North Norfolk	256.6	256.6	0.0%
Norwich	344.2	344.2	0.0%
Peterborough	467.9	467.9	0.0%
Rochford	107.7	107.7	0.0%
South Bedfordshire	208.3	208.3	0.0%
South Cambridgeshire	475.7	475.7	0.0%
South Norfolk	294.9	294.9	0.0%
Southend-on-Sea	247.5	247.5	0.0%
St Albans	202.8	202.8	0.0%
St Edmundsbury	835.2	835.2	0.0%
Stevenage	222.6	222.6	0.0%
Suffolk Coastal	256.8	256.8	0.0%
Tendring	206.5	206.5	0.0%
Three Rivers	129.5	129.5	0.0%
Thurrock	612.2	612.2	0.0%
Uttlesford	188.2	188.2	0.0%
Watford	232.0	232.0	0.0%
Waveney	288.1	288.1	0.0%
Welwyn Hatfield	315.8	315.8	0.0%
East of England	**14,374.7**	**14,374.7**	**0.0%**

Source: DECC, Oxford Economics

Domestic emissions

Description: CO2 emissions from the domestic sector

Data: Local authorities: DECC – Full local CO2 emissions estimates

Latest data: 2012
Next release: 2013, data due in 2015

DECC data on the CO2 emissions from the domestic sector by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.19.

Table 4.19: Comparison of DECC CO2 domestic emissions with EEFM data, 2012

	DECC data (k tonnes, 2012)	EEFM data (k tonnes, 2012)	Difference (%)
Babergh	212.8	212.8	0.0%
Basildon	372.0	372.0	0.0%
Bedford	344.1	344.1	0.0%
Braintree	325.8	325.8	0.0%
Breckland	303.6	303.6	0.0%
Brentwood	191.5	191.5	0.0%
Broadland	290.2	290.2	0.0%
Broxbourne	201.0	201.0	0.0%
Cambridge	231.4	231.4	0.0%
Castle Point	206.2	206.2	0.0%
Chelmsford	382.0	382.0	0.0%
Colchester	374.9	374.9	0.0%
Dacorum	333.3	333.3	0.0%
East Cambridgeshire	193.9	193.9	0.0%
East Hertfordshire	333.6	333.6	0.0%
Epping Forest	320.6	320.6	0.0%
Fenland	220.1	220.1	0.0%
Forest Heath	143.8	143.8	0.0%
Great Yarmouth	210.2	210.2	0.0%
Harlow	161.8	161.8	0.0%
Hertsmere	242.1	242.1	0.0%
Huntingdonshire	377.5	377.5	0.0%
Ipswich	259.2	259.2	0.0%
King's Lynn and West Norfolk	377.7	377.7	0.0%
Luton	378.1	378.1	0.0%
Maldon	152.2	152.2	0.0%
Mid Bedfordshire	300.5	300.5	0.0%
Mid Suffolk	230.3	230.3	0.0%
North Hertfordshire	291.6	291.6	0.0%
North Norfolk	277.5	277.5	0.0%
Norwich	261.2	261.2	0.0%
Peterborough	370.2	370.2	0.0%
Rochford	193.7	193.7	0.0%
South Bedfordshire	274.4	274.4	0.0%
South Cambridgeshire	352.1	352.1	0.0%
South Norfolk	302.2	302.2	0.0%
Southend-on-Sea	397.6	397.6	0.0%
St Albans	339.9	339.9	0.0%
St Edmundsbury	238.8	238.8	0.0%
Stevenage	162.2	162.2	0.0%
Suffolk Coastal	306.7	306.7	0.0%
Tendring	325.6	325.6	0.0%
Three Rivers	222.0	222.0	0.0%
Thurrock	311.5	311.5	0.0%
Uttlesford	202.7	202.7	0.0%
Watford	188.4	188.4	0.0%
Waveney	257.3	257.3	0.0%
Welwyn Hatfield	239.5	239.5	0.0%
East of England	**13,185.7**	**13,185.7**	**0.0%**

Source: DECC, Oxford Economics

Transport emissions

Description: CO2 emissions from the transport sector

Data: Local authorities: DECC – Full local CO2 emissions estimates

Latest data: 2012
Next release: 2013, data due in 2015

DECC data on the CO2 emissions from the transport sector by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.20.

Table 4.20: Comparison of DECC CO2 transport emissions with EEFM data, 2012

	DECC data (k tonnes, 2012)	EEFM data (k tonnes, 2012)	Difference (%)
Babergh	229.8	229.8	0.0%
Basildon	275.4	275.4	0.0%
Bedford	313.5	313.5	0.0%
Braintree	342.9	342.9	0.0%
Breckland	380.8	380.8	0.0%
Brentwood	264.9	264.9	0.0%
Broadland	238.5	238.5	0.0%
Broxbourne	118.1	118.1	0.0%
Cambridge	107.3	107.3	0.0%
Castle Point	105.6	105.6	0.0%
Chelmsford	367.4	367.4	0.0%
Colchester	338.2	338.2	0.0%
Dacorum	266.9	266.9	0.0%
East Cambridgeshire	258.2	258.2	0.0%
East Hertfordshire	271.6	271.6	0.0%
Epping Forest	592.7	592.7	0.0%
Fenland	188.6	188.6	0.0%
Forest Heath	183.5	183.5	0.0%
Great Yarmouth	137.2	137.2	0.0%
Harlow	97.3	97.3	0.0%
Hertsmere	363.9	363.9	0.0%
Huntingdonshire	709.5	709.5	0.0%
Ipswich	113.4	113.4	0.0%
King's Lynn and West Norfolk	397.3	397.3	0.0%
Luton	206.1	206.1	0.0%
Maldon	78.5	78.5	0.0%
Mid Bedfordshire	410.9	410.9	0.0%
Mid Suffolk	273.9	273.9	0.0%
North Hertfordshire	278.2	278.2	0.0%
North Norfolk	221.4	221.4	0.0%
Norwich	139.4	139.4	0.0%
Peterborough	411.3	411.3	0.0%
Rochford	98.4	98.4	0.0%
South Bedfordshire	319.5	319.5	0.0%
South Cambridgeshire	586.6	586.6	0.0%
South Norfolk	396.2	396.2	0.0%
Southend-on-Sea	162.0	162.0	0.0%
St Albans	486.8	486.8	0.0%
St Edmundsbury	252.5	252.5	0.0%
Stevenage	128.5	128.5	0.0%
Suffolk Coastal	260.6	260.6	0.0%
Tendring	234.9	234.9	0.0%
Three Rivers	321.3	321.3	0.0%
Thurrock	410.8	410.8	0.0%
Uttlesford	463.6	463.6	0.0%
Watford	96.8	96.8	0.0%
Waveney	152.5	152.5	0.0%
Welwyn Hatfield	268.9	268.9	0.0%
East of England	**13,321.8**	**13,321.8**	**0.0%**

Source: DECC, Oxford Economics

LULUCF emissions

Description: CO2 emissions from the land use, land use change and forestry (LULUCF) sector

Data: Local authorities: DECC – Full local CO2 emissions estimates

Latest data: 2012
Next release: 2013, data due in 2015

DECC data on the CO2 emissions from the LULUCF sector by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.21.

Table 4.21: Comparison of DECC CO2 LULUCF emissions with EEFM data, 2012

	DECC data (k tonnes, 2012)	EEFM data (k tonnes, 2012)	Difference (%)
Babergh	5.9	5.9	0.0%
Basildon	1.7	1.7	0.0%
Bedford	5.6	5.6	0.0%
Braintree	5.8	5.8	0.0%
Breckland	-169.9	-169.9	0.0%
Brentwood	2.5	2.5	0.0%
Broadland	8.1	8.1	0.0%
Broxbourne	0.8	0.8	0.0%
Cambridge	0.3	0.3	0.0%
Castle Point	0.7	0.7	0.0%
Chelmsford	4.2	4.2	0.0%
Colchester	4.1	4.1	0.0%
Dacorum	2.3	2.3	0.0%
East Cambridgeshire	142.2	142.2	0.0%
East Hertfordshire	5.8	5.8	0.0%
Epping Forest	4.4	4.4	0.0%
Fenland	142.3	142.3	0.0%
Forest Heath	-7.4	-7.4	0.0%
Great Yarmouth	3.3	3.3	0.0%
Harlow	0.3	0.3	0.0%
Hertsmere	2.2	2.2	0.0%
Huntingdonshire	117.4	117.4	0.0%
Ipswich	0.1	0.1	0.0%
King's Lynn and West Norfolk	70.2	70.2	0.0%
Luton	0.7	0.7	0.0%
Maldon	5.7	5.7	0.0%
Mid Bedfordshire	7.2	7.2	0.0%
Mid Suffolk	-1.8	-1.8	0.0%
North Hertfordshire	5.0	5.0	0.0%
North Norfolk	12.3	12.3	0.0%
Norwich	0.7	0.7	0.0%
Peterborough	0.9	0.9	0.0%
Rochford	3.3	3.3	0.0%
South Bedfordshire	2.4	2.4	0.0%
South Cambridgeshire	21.4	21.4	0.0%
South Norfolk	10.4	10.4	0.0%
Southend-on-Sea	0.8	0.8	0.0%
St Albans	3.3	3.3	0.0%
St Edmundsbury	-32.3	-32.3	0.0%
Stevenage	0.3	0.3	0.0%
Suffolk Coastal	-102.7	-102.7	0.0%
Tendring	5.2	5.2	0.0%
Three Rivers	1.7	1.7	0.0%
Thurrock	3.0	3.0	0.0%
Uttlesford	5.9	5.9	0.0%
Watford	0.4	0.4	0.0%
Waveney	2.8	2.8	0.0%
Welwyn Hatfield	2.0	2.0	0.0%
East of England	**311.7**	**311.7**	**0.0%**

Source: DECC, Oxford Economics

Total emissions

Description: Total CO2 emissions

Data: Local authorities: DECC – Full local CO2 emissions estimates

Latest data: 2012
Next release: 2013, data due in 2015

DECC data on the total CO2 emissions by local authority is used directly in the EEFM, so the two series match exactly, as shown in Table 4.22.

Table 4.22: Comparison of DECC total CO2 emissions with EEFM data, 2012

	DECC data (k tonnes, 2012)	EEFM data (k tonnes, 2012)	Difference (%)
Babergh	657.8	657.8	0.0%
Basildon	1,023.3	1,023.3	0.0%
Bedford	992.3	992.3	0.0%
Braintree	960.8	960.8	0.0%
Breckland	801.5	801.5	0.0%
Brentwood	587.6	587.6	0.0%
Broadland	929.1	929.1	0.0%
Broxbourne	502.6	502.6	0.0%
Cambridge	775.8	775.8	0.0%
Castle Point	388.8	388.8	0.0%
Chelmsford	1,101.6	1,101.6	0.0%
Colchester	1,027.5	1,027.5	0.0%
Dacorum	840.6	840.6	0.0%
East Cambridgeshire	788.2	788.2	0.0%
East Hertfordshire	872.0	872.0	0.0%
Epping Forest	1,130.5	1,130.5	0.0%
Fenland	1,010.2	1,010.2	0.0%
Forest Heath	513.2	513.2	0.0%
Great Yarmouth	505.0	505.0	0.0%
Harlow	545.5	545.5	0.0%
Hertsmere	828.7	828.7	0.0%
Huntingdonshire	1,658.1	1,658.1	0.0%
Ipswich	599.9	599.9	0.0%
King's Lynn and West Norfolk	1,879.0	1,879.0	0.0%
Luton	922.0	922.0	0.0%
Maldon	352.6	352.6	0.0%
Mid Bedfordshire	949.5	949.5	0.0%
Mid Suffolk	740.0	740.0	0.0%
North Hertfordshire	840.4	840.4	0.0%
North Norfolk	767.7	767.7	0.0%
Norwich	745.5	745.5	0.0%
Peterborough	1,250.3	1,250.3	0.0%
Rochford	403.1	403.1	0.0%
South Bedfordshire	804.7	804.7	0.0%
South Cambridgeshire	1,435.7	1,435.7	0.0%
South Norfolk	1,003.7	1,003.7	0.0%
Southend-on-Sea	807.9	807.9	0.0%
St Albans	1,032.7	1,032.7	0.0%
St Edmundsbury	1,294.2	1,294.2	0.0%
Stevenage	513.6	513.6	0.0%
Suffolk Coastal	721.4	721.4	0.0%
Tendring	772.2	772.2	0.0%
Three Rivers	674.4	674.4	0.0%
Thurrock	1,337.6	1,337.6	0.0%
Uttlesford	860.4	860.4	0.0%
Watford	517.7	517.7	0.0%
Waveney	700.9	700.9	0.0%
Welwyn Hatfield	826.1	826.1	0.0%
East of England	**41,193.9**	**41,193.9**	**0.0%**

Source: DECC, Oxford Economics

5: Outliers and data validity

Oxford Economics adheres to the principle of incorporating published data unchanged into the EEFM as the crucial starting point upon which local economic data are founded. Data is then adjusted to be consistent with key regional and national series which offer more timely information around recent economic trends (see section 4 for further detail). This process allows Model users to reference key variables at the published source, however as data are adjusted this means that users cannot reference data directly, although the broad levels will remain consistent with the published source. Tables published in section 4 are provided to give a sense of the level of adjustment made to the published data.

However, in some cases the data can be anomalous - so-called "outliers." This could be because of errors in measuring or recording it. Or perhaps the data is "true" but reflects an unusual circumstance and so does not accurately represent the local situation or local trends. Because of the smaller numbers of observations, data-reporting errors or unusual "outlier" values can be a particular problem at more detailed levels of analysis - for example, when looking at individual sectors in individual local authorities.

This section explores these issues in respect of the BRES (note: prior to 2008, ABI data is used and subject to similar levels of volatility), and outlines Oxford Economics' approach to BRES data outliers. In summary, this is to keep them unchanged within the EEFM spreadsheets, but to adjust them when making forecasts such that the first year of a forecast would incorporate a correction for an outlier value in the BRES data in a previous year.

BRES outliers

The latest published BRES data is for 2012 and was released in September 2013. Since BRES data is collected by survey whereby individuals / firms complete the questionnaires, there can sometimes be significant discontinuities in the sector data at local level from year to year. Such discontinuities may - or may not - reflect real events. Consider the effects on the data series of an incomplete return from a firm - or an error interpreting or recording it - in one year preceded (or followed) by a complete or correct return in the previous (or subsequent) year. Any recorded change in employees associated with this would be fictitious, and any trend extrapolated from it into the future would be misleading. But equally, a dramatic change could reflect the opening, expansion, contraction or closure of a major business in an area (with potential longer-term effects on other local businesses).

If a discontinuity occurred in say 2008, but was corrected in 2009, producing a "spike" in the time-series data, it can essentially be ignored as it will not affect the forecasting process. Equally, if it were confirmed the following year, it would suggest a 'real' change in the local economy has indeed taken place. In the meantime, local authorities' input is vital to identify whether discontinuities in the data reflect 'real' events or not.

Focussing on the 2 digit SIC 2007 sectors for employee jobs at local authority level, we identified discontinuities showing **more than a 10% change in number of employees in a single year where this change involved more than 1,000 employees**. These outliers were sent to appropriate local authority representatives for their reaction and input.

Oxford Economics' response to this consultation was as follows: where we were satisfied that a discontinuity genuinely reflected the opening or closure of a firm, or major expansion or contraction, we accepted the change as the correct starting point for the EEFM forecasts. But if we were given evidence by the steering group that there was an error in the BRES data or that an outlier gave a misleading picture of the local

situation in some way, we corrected for the discontinuity in the first year of the forecast. (In the absence of any information about a discontinuity, we accepted it, in line with our working principle outlined above.)

In addition, Oxford Economics made further adjustments to LQs in 2013 where data 'spikes' occurred in 2012 which fell outside of the criteria used in the validation exercise, and were deemed implausible.

Table 5.1 sets out those local authorities and sectors where adjustments were made to 2012 BRES data, showing the size and direction of the correction. Areas formatted in italics are those which were identified in the data validation process carried out with local authorities, and areas formatted in non-italics are those which Oxford Economics identified that were not identified under the criteria used in the validation exercise.

Table 5.1: Adjustments to 2012 BRES data used in setting forecasts

Local authority	Sector	Correction
Mid Bedfordshire	Construction	Down by approximately 3,000 employee jobs
Luton	Real estate	Up by approximately 500 employee jobs
Luton	Employment activities	Up by approximately 1,600 employee jobs
Huntingdonshire	Transport manufacturing	Up by approximately 300 employee jobs
Huntingdonshire	Land Transport	Down by approximately 100 employee jobs
Colchester	Publishing and broadcasting	Down by approximately 700 employee jobs
Maldon	Land Transport	Down by approximately 300 employee jobs
Maldon	Health and care	Down by approximately 900 employee jobs
Thurrock	Chemicals manufacturing	Up by approximately 600 employee jobs
Dacorum	Food manufacturing	Down by approximately 200 employee jobs
East Hertfordshire	Professional services	Down by approximately 1,400 employee jobs
Hertsmere	Wholesale	Down by approximately 1,200 employee jobs
Watford	Real estate	Down by approximately 300 employee jobs
Welwyn Hatfield	Construction	Down by approximately 1,600 employee jobs
Breckland	Real estate	Up by approximately 200 employee jobs
Norwich	Waste and remediation	Down by approximately 200 employee jobs
St Edmundsbury	Business services	Down by approximately 4,500 employee jobs
Ashford	Construction	Up by approximately 1,200 employee jobs
Ashford	Land transport	Up by approximately 1,300 employee jobs
Canterbury	Health and care	Up by approximately 1,300 employee jobs
Dartford	Business services	Down by approximately 3,200 employee jobs

Note: The amount of jobs by which a sector has been adjusted does not necessarily reflect the size of the observed anomaly in the BRES data, as the 2013 adjusted value also includes an element of the trend employee growth that would have occurred if the correction had not been made

Census vs APS / LFS employment rates

EEFM uses resident employment rates which are anchored to the 2001 Census and since the EEFM 2013 update 2011 Census data has been incorporated on resident employment rates, with the denominator defined as population aged 16-74. The main annual source of resident employment data is the Labour Force Survey / Annual Population Survey, and this is used to calculate annual changes in employment rates.

However, in both 2001 and 2011, there are significant differences between these two data sources. Table 5.2 shows, for all authorities, the 2011 resident employment rates from the Census and the APS / LFS. Percentage point differences are shown in the third column. Note that, for consistency, the denominator in both cases is all people aged 16-64.

No clear reason for these differences has been found. There does not appear to be a consistent pattern to them. Cambridge shows the biggest positive difference, with an APS / LFS employment rate 11.6 percentage points higher than the Census rate. In the 2001 Census the difference is around 13.6 percentage points. It is possible that the difference is related to University students, who are normally counted at their term-time address in the Census but may not have been present on Census day due to their shorter terms, and who are also exempt from taking up employment during term-time but may take up employment during the rest of the year. A similar pattern is evident in Norwich which also has a substantial student population, where the APS / LFS employment rate is 8.1 percentage points higher. However when we compared the APS / LFS with the Census in 2001, there was little difference between the two measures. Maldon shows the largest

negative difference, where the APS / LFS 2011 resident employment rate is 12.1 percentage points lower than the Census estimate.

In the Model, resident employment rates are estimated as equal to the Census rates in 2001 and 2011 (with the 16-74 population as denominator), but increased every year in line with the growth in the LFS/APS employment rate (with the working-age population as denominator). This methodology was chosen to satisfy the request by the Model Steering Group that the EEFM's underlying data be consistent with the Census whenever possible. So although these discrepancies between the Census and LFS/APS employment rates are acknowledged here, they are not adjusted for in the EEFM.

Table 5.2: Census vs LFS employment rates

	Census 2011	LFS / APS 2011	Difference (pp)
Babergh	79.8	73.0	-6.8
Basildon	74.5	72.2	-2.3
Bedford	75.0	75.8	0.8
Braintree	79.1	77.2	-1.9
Breckland	77.0	75.0	-2.0
Brentwood	78.5	81.5	3.0
Broadland	81.2	77.9	-3.3
Broxbourne	77.6	78.7	1.1
Cambridge	65.8	72.1	6.3
Castle Point	76.9	72.7	-4.2
Chelmsford	79.4	74.7	-4.7
Colchester	74.9	74.9	0.0
Dacorum	78.7	76.6	-2.1
East Cambridgeshire	82.4	78.1	-4.3
East Hertfordshire	81.0	74.6	-6.4
Epping Forest	77.9	67.7	-10.2
Fenland	75.2	63.6	-11.6
Forest Heath	80.7	78.3	-2.4
Great Yarmouth	69.4	67.5	-1.9
Harlow	76.5	72.0	-4.5
Hertsmere	77.7	75.9	-1.8
Huntingdonshire	80.9	75.0	-5.9
Ipswich	74.6	73.3	-1.3
King's Lynn and West Norfolk	75.6	74.6	-1.0
Luton	67.2	64.9	-2.3
Maldon	79.0	64.8	-14.2
Mid Bedfordshire	80.1	77.6	-2.5
Mid Suffolk	81.4	79.7	-1.7
North Hertfordshire	80.4	75.5	-4.9
North Norfolk	75.0	74.4	-0.6
Norwich	68.6	72.1	3.5
Peterborough	73.3	70.5	-2.8
Rochford	78.9	76.8	-2.1
South Bedfordshire	79.5	76.9	-2.6
South Cambridgeshire	83.1	82.9	-0.2
South Norfolk	80.1	75.3	-4.8
Southend-on-Sea	73.9	69.7	-4.2
St Albans	80.1	78.9	-1.2
St Edmundsbury	80.8	76.8	-4.0
Stevenage	77.5	72.7	-4.8
Suffolk Coastal	79.0	81.9	2.9
Tendring	70.3	66.0	-4.3
Three Rivers	79.3	68.5	-10.8
Thurrock	74.7	70.1	-4.6
Uttlesford	81.1	79.1	-2.0
Watford	78.4	77.6	-0.8
Waveney	72.6	71.5	-1.1
Welwyn Hatfield	72.0	68.0	-4.0
East of England	**76.6**	**73.9**	**-2.7**

Note: The denominator used for the Census is all people aged 16-64. This is to ensure consistency with the LFS / APS

Data checking and validity procedures

A vital foundation of any economic modelling and forecasting work is ensuring that data is correctly sourced and accurately fed into the model. Oxford Economics has a policy of meticulously summing checking variables and carrying out visual checks throughout the process of updating the EEFM to ensure that the data is fully internally consistent.

Data is entered electronically from original official sources and is checked automatically to make sure identities are maintained. It is also checked visually to assess whether trends look plausible and magnitudes are correct.

There are a number of key identities in the EEFM which must hold for the Model to be fully realised, and we have a spreadsheet within it designed specifically to check that this is the case. These identities are:

- Employee jobs by sector = total employee jobs
- Self-employed jobs by sector = total self-employed jobs
- Employment by sector = total employment
- All indicators in each local authority = Eastern totals (note that this does not apply to house prices, productivity, and unemployment / resident employment rates)
- Total employment = employee jobs + self employed jobs + HM Armed Forces
- Total population = working age population + young population + elderly population
- Change in population = net migration + natural increase
- People-based employment = net commuting + resident-based employment
- Labour force = employment + unemployment

There are two principal methods that we apply to our models to ensure variables add up correctly over the forecast period:

1. **Scaling:** it is often the case that model input or output variables which are theoretically identical actually have different values. This is usually due to errors or incompleteness in the underlying data or methodological differences in gathering them. Scaling is the process by which two such variables are made equal by raising one to the value of the other, and the procedure can either be multiplicative or additive. Additive scaling takes the difference between the variables and adds it pro rata to the components of the lower of the two (for example, to local authority values when the total of these is less than a regional value to which it should theoretically be equal). Multiplicative scaling takes the ratio of the "target" total to the actual total, and multiplies each component of the actual total by that ratio. In this way, the actual total is shifted upwards (or downwards) to meet a target total which it should theoretically equal.

2. **Residual:** this procedure is used when the value of one component (or a small number of them) can be approximately deduced from the known values of other components and a known total. For example, estimating full time jobs as the residual between total jobs and part time jobs.

6: Performance monitoring

The following section outlines changes to key indicators since EEFM 2013 run, and includes comparison tables of each of the Model runs.

What's changed

Since the last EEFM update was in 2013, new data has been released for every variable in the model. Table 6.1 summarises the changes to the key data assumed for 2012 and 2013 (some arise from new data releases, some from updated estimates/forecasts, others from a mixture of the two). The largest change since the last update of the model is the incorporation of the Census 2011 commuting matrix.

Table 6.1: Changes to East of England data between the EEFM 2013 and EEFM 2014 runs

	EEFM 2013		EEFM 2014		Differences	
	2012	**2013**	**2012**	**2013**	**2012**	**2013**
Population (000s)	5920	5979	5907	5954	-14	-25
Employment (000s)	2864	2850	2868	2944	4	94
Resident employment (000s)	2792	2780	2878	2903	87	124
Resident employment rate (%)	65.2	64.4	67.4	67.6	2.2	3.1
Unemployment (000s)	115.2	114.5	115.2	102.2	0.0	-12.3
GVA (% growth)	-0.5	0.5	0.0	2.2	0.5	1.7
Dwellings (000s)	2550	2575	2550	2566	0	-9
Households (000s)	2466	2490	2466	2481	0	-9

Source: ONS, BRES, APS, Claimant Count (Nomis), Regional Accounts, DCLG
Note: GVA and resident employment rate differences are percentage point changes. All other differences are in thousands

In these EEFM 2014 forecasts, the level of **total employment** (the sum of employee jobs and self-employment jobs) in the East of England in 2012 is higher by 4,000 jobs than the equivalent figure in the EEFM 2013 forecasts. The 2013 level of employment in the East according to ONS Workforce Jobs is higher by an estimated 94,000 jobs compared to the estimate in the EEFM 2013 update.

Table 6.2: Changes to East of England sectoral data between the EEFM 2013 and EEFM 2014 runs (000s)

	EEFM 2013		EEFM 2014		Differences	
	2012	**2013**	**2012**	**2013**	**2012**	**2013**
Agriculture	39.2	36.6	37.0	35.4	-2.2	-1.2
Mining and Quarrying	1.4	1.4	1.9	1.7	0.4	0.3
Food Manufacturing	33.0	33.0	30.5	30.4	-2.5	-2.6
General Manufacturing	71.9	71.5	77.2	78.1	5.3	6.6
Chemicals	35.9	35.5	27.8	27.4	-8.1	-8.2
Pharma	7.2	7.2	6.4	6.4	-0.8	-0.8
Metals	29.1	28.9	34.8	34.4	5.8	5.6
Transport	45.4	45.1	44.0	43.5	-1.4	-1.6
Electronics	26.3	26.1	23.4	23.2	-2.9	-2.9
Utilities	14.7	12.5	12.6	13.6	-2.1	1.1
Waste and remediation	10.1	10.4	15.3	16.1	5.2	5.7
Construction	206.3	200.7	218.2	222.3	11.9	21.6
Wholesale	192.6	191.7	179.0	181.1	-13.7	-10.6
Retail	315.4	314.2	292.8	294.9	-22.6	-19.3
Land Transport	143.2	140.5	140.7	137.6	-2.6	-2.9
Water and air transport	5.9	6.0	5.8	5.7	0.0	-0.3
Hotels and restaurants	151.9	154.7	167.7	170.4	15.8	15.7
Publishing and broadcasting	25.0	25.6	24.2	26.0	-0.8	0.3
Telecoms	17.8	18.1	18.5	20.2	0.7	2.1
Computer related activity	57.8	59.3	55.8	60.8	-2.1	1.5
Finance	76.4	76.9	77.5	74.7	1.1	-2.1
Real Estate	41.3	41.9	42.1	44.8	0.7	2.8
Professional services	191.6	199.1	216.0	232.6	24.3	33.5
R+D	20.2	21.9	21.3	23.2	1.1	1.3
Business services	161.7	162.1	173.0	184.5	11.3	22.5
Employment activities	82.9	80.9	91.4	100.8	8.5	19.9
Public Administration incl land forces	111.3	109.9	116.3	114.8	5.1	4.8
Education	267.6	263.8	259.5	260.0	-8.2	-3.8
Health and care	314.4	307.5	320.6	337.4	6.2	29.8
Arts and entertainment	82.0	82.2	70.9	71.9	-11.1	-10.2
Other services	84.6	84.4	65.9	69.5	-18.8	-14.9
Total	**2864.4**	**2849.7**	**2868.1**	**2943.5**	**3.7**	**93.8**

Source: Oxford Economics, ONS Workforce Jobs

The largest of the downward revisions in 2012 between the EEFM 2013 and EEFM 2014 results occurred in retail, other services, wholesale and arts & entertainment. The largest upward revisions to 2012 data were in professional services, hotels and restaurants, construction and business services. Total jobs are 3,700 higher in the EEFM 2014 than in the 2013 model release.

Total jobs have been revised up by 93,800 jobs in 2013 in the EEFM2014. On a sectoral basis, the largest upward revisions occurred in professional services, health and care, business services and construction. The largest downward revisions were evident in retail, other services, wholesale and arts & entertainment (consistent with the downgrades to 2012 data).

In the EEFM 2014 run, the latest data available for **resident employment** was for 2013 from the APS. In 2012, resident employment levels are estimated to have been higher by around 87,000 jobs. In 2013, resident employment is 124,000 higher.

Claimant unemployment data for all of 2013 is now available for the East. This shows that unemployment is 12,300 claimants fewer than estimated in the EEFM 2013 run. The 2012 estimate of unemployment is unchanged since we had all 12 months of data available for 2012 at the time of the EEFM 2013 update.

GVA data in the EEFM 2014 run has been rebased from 2009 prices to 2010 prices, preserving consistency with the Blue Book. In addition, new regional data (2012) has been released since the EEFM 2013 run, with the growth rate revised up by 0.5pp.

Monitoring the forecasts

This section compares five-year forecasts across all of the EEFM runs. Each review table contains an 'outturn' column for 2008-13.

Population

Table 6.3 shows population growth over 2008-2013 in the Autumn 2007, Autumn 2008, Spring 2009, Autumn 2009, Spring 2010, Autumn 2010, EEFM 2012, EEFM 2013 and EEFM 2014 runs. Overall, we estimate an additional 245,100 people in the East over 2008-13. This outturn is almost 25,000 lower than anticipated in the EEFM 2013. The spread of the forecast change varies across districts, but is guided by the direction of change arising from the 2011 Census population figure published for each district. Peterborough enjoyed the highest upward revision of 5,600 people whilst Norwich suffered the biggest reduction.

Table 6.3: Comparison of projected population growth 2008-2013 (000s)

	Aut 07 2008-13	Aut 08 2008-13	Spr 09 2008-13	Aut 09 2008-13	Spr 10 2008-13	Aut 10 2008-13	EEFM 2012 2008-13	EEFM 2013 2008-13	EEFM 2014 2008-13	Outturn 2008-13
Babergh	2.3	4.2	4.0	3.4	3.1	2.7	0.5	1.6	1.0	1.0
Basildon	3.8	6.2	4.3	4.1	3.7	4.1	5.4	5.2	5.9	5.9
Bedford	7.3	7.8	6.7	5.5	5.8	4.9	8.0	6.5	7.2	7.2
Braintree	8.0	6.3	5.0	4.8	4.7	4.0	5.4	6.7	5.2	5.2
Breckland	5.5	6.4	5.9	4.8	4.9	5.0	6.6	4.6	4.0	4.0
Brentwood	3.9	2.6	1.1	1.8	1.7	3.1	5.2	2.9	2.5	2.5
Broadland	3.5	9.0	8.1	8.7	8.6	7.8	4.3	2.8	2.1	2.1
Broxbourne	1.8	3.8	2.6	2.9	3.2	3.3	2.2	4.0	3.3	3.3
Cambridge	5.6	14.0	12.3	11.2	10.3	12.3	15.2	9.7	10.5	10.5
Castle Point	1.9	2.4	1.3	1.0	0.8	0.6	2.0	0.9	0.5	0.5
Chelmsford	4.6	8.5	7.0	8.0	7.4	9.2	10.2	6.4	5.2	5.2
Colchester	6.0	9.2	8.8	8.6	6.7	8.7	15.9	10.1	9.7	9.7
Dacorum	4.3	5.4	4.3	5.9	5.8	6.7	6.1	6.8	7.4	7.4
East Cambridgeshire	4.6	5.2	4.4	4.0	3.1	4.9	7.4	6.4	4.9	4.9
East Hertfordshire	6.9	5.3	4.0	7.2	8.2	8.4	7.9	6.4	6.2	6.2
Epping Forest	3.4	4.4	2.3	2.9	2.9	3.4	3.2	3.0	3.8	3.8
Fenland	3.7	4.5	3.7	2.8	2.4	1.9	3.3	4.5	3.1	3.1
Forest Heath	1.6	3.6	3.4	3.2	3.2	4.4	6.6	4.0	3.7	3.7
Great Yarmouth	2.0	1.0	0.3	0.3	-0.3	0.0	1.5	3.2	1.9	1.9
Harlow	2.8	1.7	1.0	0.9	0.9	0.9	3.2	4.0	3.4	3.4
Hertsmere	2.9	4.8	2.8	3.5	3.5	3.6	5.5	4.9	3.6	3.6
Huntingdonshire	4.4	10.8	9.2	9.8	9.6	8.7	6.3	6.9	5.7	5.7
Ipswich	4.1	4.7	4.2	3.3	3.1	4.1	6.8	9.7	7.3	7.3
King's Lynn and West Norfolk	1.8	5.6	4.8	5.6	5.1	4.8	4.0	5.3	3.7	3.7
Luton	4.5	3.2	1.9	3.3	4.0	5.8	14.2	15.6	15.9	15.9
Maldon	1.7	2.2	1.9	2.3	2.3	3.2	2.2	0.9	0.5	0.5
Mid Bedfordshire	8.2	7.5	6.8	6.5	6.7	5.9	8.8	6.2	7.5	7.5
Mid Suffolk	4.2	3.3	3.4	5.3	4.7	5.0	5.7	4.9	3.4	3.4
North Hertfordshire	5.4	9.3	4.6	4.9	4.4	5.0	6.4	6.1	4.9	4.9
North Norfolk	4.0	1.7	1.3	0.8	0.6	0.0	2.0	2.2	1.1	1.1
Norwich	3.8	8.0	7.1	7.7	6.5	9.1	14.8	7.0	7.8	7.8
Peterborough	5.7	4.3	2.5	2.1	2.3	2.7	6.8	12.4	12.3	12.3
Rochford	1.6	2.9	2.3	3.2	3.0	2.5	2.9	1.5	0.8	0.8
South Bedfordshire	4.0	8.1	5.4	5.2	4.9	4.6	3.6	6.0	8.0	8.0
South Cambridgeshire	9.0	9.9	8.6	11.8	11.0	12.7	12.7	9.9	7.8	7.8
South Norfolk	4.2	7.2	6.5	7.2	6.9	7.8	10.4	9.7	8.8	8.8
Southend-on-Sea	0.7	8.0	5.9	5.3	5.0	4.1	3.6	8.4	7.6	7.6
St Albans	5.8	6.8	5.9	8.9	8.1	10.0	9.2	7.9	7.0	7.0
St Edmundsbury	3.1	6.3	5.8	5.5	5.6	5.5	4.3	6.7	4.3	4.3
Stevenage	5.4	1.8	0.8	2.0	1.8	1.5	2.4	3.8	3.8	3.8
Suffolk Coastal	0.3	7.3	5.9	6.7	5.6	4.6	5.1	3.7	0.5	0.5
Tendring	4.2	6.3	5.0	3.6	2.6	2.1	4.8	-0.8	-1.7	-1.7
Three Rivers	1.6	3.3	2.7	3.7	3.5	3.7	4.5	3.0	3.3	3.3
Thurrock	9.4	7.9	6.6	5.7	5.4	6.4	10.0	8.5	7.2	7.2
Uttlesford	3.6	2.5	2.2	2.5	2.6	3.1	5.8	6.2	7.2	7.2
Watford	3.3	3.6	0.6	1.7	1.3	2.4	6.0	8.0	8.9	8.9
Waveney	3.2	0.3	0.7	-0.4	-0.6	-0.6	-1.1	0.0	-0.4	-0.4
Welwyn Hatfield	4.1	5.3	5.2	4.4	4.1	4.5	8.5	6.1	6.6	6.6
East	**197.4**	**264.7**	**210.7**	**223.9**	**210.2**	**228.9**	**296.4**	**270.2**	**245.1**	245.1

Source: Oxford Economics

Employment

Table 6.4 shows five-year data/forecasts for jobs growth over 2008-13 in the Autumn 2007, Autumn 2008, Spring 2009, Autumn 2009, Spring 2010, Autumn 2010, EEFM 2012, EEFM 2013 and EEFM 2014 runs. Between the Autumn 2007 and Spring 2009 runs, the jobs growth forecast had gradually reduced, echoing the downward revisions being made by Oxford Economics to its UK forecasts as more information about the developing recession became available. However, by the time of the Autumn 2009 run, the employment data was showing that the impact of the recession on the labour market was mild in comparison with previous recessions, perhaps reflecting changes in the structure of the economy since then. Consequently, the Autumn 2009, Spring 2010 and Autumn 2010 EEFM runs all showed an improved position on 2008-13 jobs change relative to the previous forecasts, particularly as new published data had constantly been subject to upward revisions for the East. In the EEFM 2012 update, revisions to published data by the ONS resulted in a downward revision to the medium term outlook of jobs growth. This also reflected ongoing problems in the Eurozone and the continued impact of spending cuts. In the EEFM 2013 update, a contraction in jobs levels over the period 2008-13 was forecast of around 28,900 jobs. This is due to persistent problems in the Eurozone which appeared to be stalling the export led recovery. In the 2014 update, we have incorporated 2013 data at the regional level, which suggests a much faster labour market recovery than previously expected. Over the 2008-13 period, the number of jobs in the East of England are estimated to have risen by 77,000.

The areas estimated to have witnessed the largest gains during this 2008-13 period include South Norfolk, Hertsmere, Broxbourne, Basildon and Watford. The areas with the weakest job gains during this period include Norwich, Ipswich, Harlow and Bedford. The pace of recovery in each area ultimately depends on its sector mix, and in areas with more industry and manufacturing the recovery is likely to be weaker, with more positive outlooks in areas with a bigger professional services sector.

Over the 2008-13 period, the largest upward revisions to employment gains between the EEFM 2013 update and EEFM 2014 release are evident in Peterborough, Basildon and Hertsmere. Conversely, Welwyn Hatfield, South Cambridgeshire and Chelmsford have experienced the largest downgrades.

GVA

Table 6.5 shows five-year data/forecasts for GVA growth over 2008-13 in the Autumn 2007, Autumn 2008, Spring 2009, Autumn 2009, Spring 2010, Autumn 2010, EEFM 2012, EEFM 2013 and EEFM 2014 runs. As with employment, the five-year estimates became more negative as the recession gathered pace. In the EEFM 2014 run, we estimate that GVA growth contracted by 0.3% per annum over the period 2008-13.

Table 6.4: Comparison of employment growth between EEFM updates, 2008-2013 (000s)

	Aut 07 2008-13	Aut 08 2008-13	Spr 09 2008-13	Aut 09 2008-13	Spr 10 2008-13	Aut 10 2008-13	EEFM 2012 2008-13	EEFM 2013 2008-13	EEFM 2014 2008-13	Outturn 2008-13
Babergh	1.6	1.7	0.0	0.2	-0.1	0.6	-0.9	-1.3	0.4	-
Basildon	1.0	0.7	-4.1	-1.4	-1.9	-1.2	-5.5	-2.8	5.0	-
Bedford	3.1	1.6	-2.2	-2.0	-0.1	0.1	-3.9	-6.2	-1.5	-
Braintree	5.6	1.2	-2.9	-2.1	-0.8	-0.5	-3.5	-0.6	0.4	-
Breckland	3.2	2.8	0.4	-0.3	0.1	1.3	-0.5	0.0	1.5	-
Brentwood	3.3	1.2	-2.3	-1.4	-0.7	1.3	-3.0	1.2	4.6	-
Broadland	1.9	2.2	-1.1	-0.8	0.5	1.4	8.8	2.3	2.5	-
Broxbourne	0.7	0.9	-1.6	-1.6	-0.5	-0.6	-0.3	3.8	5.5	-
Cambridge	3.9	10.6	8.0	10.1	6.9	8.9	2.4	-0.4	4.3	-
Castle Point	1.2	0.5	-1.1	-0.8	-0.3	-0.3	0.2	-0.5	3.1	-
Chelmsford	4.4	3.5	-0.7	0.9	0.6	2.5	6.7	6.4	4.3	-
Colchester	4.1	3.0	-1.0	1.3	1.2	2.6	6.4	2.9	3.7	-
Dacorum	4.7	1.1	-2.9	-0.5	0.0	1.6	-0.9	-3.9	2.2	-
East Cambridgeshire	3.1	1.2	-0.6	0.2	0.6	2.2	2.9	3.1	2.6	-
East Hertfordshire	4.9	-0.6	-3.4	-1.9	-0.4	0.9	-4.0	-1.3	-1.1	-
Epping Forest	3.4	0.6	-2.5	-2.6	-0.3	1.1	4.4	1.2	3.1	-
Fenland	2.3	1.4	-0.1	0.0	2.2	2.9	1.6	0.4	-0.8	-
Forest Heath	0.6	1.3	-0.3	0.0	0.5	1.3	2.2	0.7	0.9	-
Great Yarmouth	2.4	-1.1	-2.7	-1.8	-1.2	-0.8	0.7	-0.5	2.0	-
Harlow	0.4	0.4	-2.4	-1.4	-4.6	-4.6	-4.0	-6.7	-2.3	-
Hertsmere	4.1	3.8	0.4	1.6	1.8	3.0	-3.2	-1.4	5.7	-
Huntingdonshire	2.2	2.3	-2.0	-1.0	-1.1	-0.3	-2.3	-5.6	-0.3	-
Ipswich	0.7	1.6	-1.0	-1.1	-0.4	0.2	-0.9	-5.0	-4.2	-
King's Lynn and West Norfolk	0.9	0.7	-2.3	-0.1	-0.5	1.1	-1.6	-1.7	2.7	-
Luton	2.6	0.7	-3.7	-2.9	2.9	3.5	2.6	-3.5	-1.4	-
Maldon	0.8	0.7	-0.3	0.3	1.1	1.6	-0.2	-1.0	0.5	-
Mid Bedfordshire	6.6	2.0	-0.7	0.3	0.9	1.6	7.0	-1.1	1.5	-
Mid Suffolk	1.6	0.2	-1.6	1.1	0.9	2.3	1.7	0.7	1.5	-
North Hertfordshire	4.4	3.4	-0.6	-1.1	-1.2	-0.3	-1.4	-2.8	1.3	-
North Norfolk	2.4	-0.7	-2.0	-1.0	-0.3	0.1	0.9	1.3	0.7	-
Norwich	2.0	0.8	-4.2	-3.1	-4.2	-3.5	-6.9	-9.1	-6.8	-
Peterborough	4.0	-1.4	-6.4	-6.3	-0.3	0.5	-2.4	-10.1	-1.2	-
Rochford	1.9	0.3	-0.9	-0.3	-0.2	0.0	-0.1	0.4	3.0	-
South Bedfordshire	2.5	2.2	-2.0	-1.4	-0.9	-0.6	1.1	-0.8	4.5	-
South Cambridgeshire	5.5	2.5	-2.2	3.0	1.0	3.3	5.5	3.6	0.5	-
South Norfolk	2.5	2.9	0.3	2.0	2.9	4.8	7.8	6.0	7.7	-
Southend-on-Sea	1.3	2.3	-2.5	-1.3	-3.0	-3.0	-6.4	-4.0	0.3	-
St Albans	5.2	3.2	-0.9	1.8	-4.9	-3.9	-1.1	-3.1	-1.3	-
St Edmundsbury	1.9	2.5	-0.3	-0.1	0.8	1.3	5.9	5.7	4.6	-
Stevenage	4.4	2.6	-0.8	1.2	1.6	1.9	2.9	2.7	3.2	-
Suffolk Coastal	1.7	2.4	-0.9	0.1	1.9	3.2	0.7	0.6	1.5	-
Tendring	2.1	1.0	-1.4	-0.7	-0.2	0.0	-0.1	-0.8	2.2	-
Three Rivers	1.2	0.9	-0.8	0.3	0.5	1.4	-2.5	-2.7	0.6	-
Thurrock	3.4	2.6	-0.2	-0.3	0.9	-0.5	4.5	2.4	1.1	-
Uttlesford	3.2	0.1	-0.9	-0.4	0.1	0.7	0.4	0.1	2.0	-
Watford	1.6	0.5	-4.1	-3.0	-1.0	0.9	1.2	-1.2	4.8	-
Waveney	1.6	-1.7	-2.5	-2.0	-1.1	-1.0	-1.4	-3.2	-1.4	-
Welwyn Hatfield	5.0	1.2	-1.9	-1.3	0.4	1.7	4.2	7.0	3.4	-
East	**133.2**	**73.7**	**-69.7**	**-21.9**	**0.1**	**41.1**	**25.8**	**-28.9**	**77.0**	-

Source: Oxford Economics

Table 6.5: Comparison of GVA growth per annum between EEFM updates, 2008-2013 (avg%pa)

	Aut 07 2008-13	Aut 08 2008-13	Spr 09 2008-13	Aut 09 2008-13	Spr 10 2008-13	Aut 10 2008-13	EEFM 2012 2008-13	EEFM 2013 2008-13	EEFM 2014 2008-13	Outturn 2008-13
Babergh	-0.9	3.0	1.2	1.4	0.9	1.1	-0.7	-1.2	-0.9	-
Basildon	-0.2	2.9	1.2	1.6	0.9	1.2	-1.6	-1.0	-0.2	-
Bedford	0.3	2.4	0.8	0.8	1.1	1.3	-0.3	-0.9	0.3	-
Braintree	0.1	2.6	0.7	1.0	0.6	0.9	-0.3	0.8	0.1	-
Breckland	0.5	2.9	1.5	1.5	1.4	1.8	0.0	1.0	0.5	-
Brentwood	1.0	3.4	1.2	1.4	1.0	1.9	-2.7	0.6	1.0	-
Broadland	2.0	3.1	0.8	1.5	1.7	1.9	4.6	3.1	2.0	-
Broxbourne	1.5	2.8	0.8	0.9	1.1	1.2	1.6	2.0	1.5	-
Cambridge	-0.5	4.3	3.4	3.4	3.4	3.7	-0.6	-1.3	-0.5	-
Castle Point	2.2	2.5	0.5	0.8	1.6	1.8	0.5	-0.3	2.2	-
Chelmsford	0.0	3.1	1.7	1.9	0.8	1.3	1.5	1.8	0.0	-
Colchester	-1.0	3.2	1.4	1.9	1.1	1.5	1.9	1.1	-1.0	-
Dacorum	-0.8	2.7	0.7	1.1	0.5	1.1	0.5	-1.7	-0.8	-
East Cambridgeshire	0.7	3.0	0.7	1.4	1.3	2.1	2.8	2.5	0.7	-
East Hertfordshire	-1.2	2.4	0.6	1.0	1.4	1.7	-0.1	-0.4	-1.2	-
Epping Forest	0.7	2.1	0.4	0.3	0.8	1.4	0.3	0.2	0.7	-
Fenland	0.3	2.9	1.5	1.5	2.3	2.6	2.2	1.9	0.3	-
Forest Heath	-0.3	2.7	1.5	1.5	0.9	1.5	1.6	0.8	-0.3	-
Great Yarmouth	1.3	1.8	0.5	0.7	0.7	1.1	1.0	0.1	1.3	-
Harlow	-5.2	2.7	1.0	1.2	-1.7	-1.5	-4.6	-6.7	-5.2	-
Hertsmere	0.8	4.0	1.8	2.1	2.5	3.0	0.9	-0.3	0.8	-
Huntingdonshire	0.1	2.7	1.0	1.3	1.1	1.4	0.9	-0.5	0.1	-
Ipswich	-2.1	2.8	1.6	1.5	1.1	1.3	-0.7	-1.5	-2.1	-
King's Lynn and West Norfolk	1.2	2.3	0.9	1.5	0.7	1.0	0.9	0.9	1.2	-
Luton	-2.1	2.7	1.1	1.0	2.0	2.2	0.0	-2.1	-2.1	-
Maldon	1.6	2.7	1.6	1.7	1.8	2.2	1.8	1.1	1.6	-
Mid Bedfordshire	-0.3	2.8	1.2	1.5	0.8	1.1	3.6	-0.9	-0.3	-
Mid Suffolk	-1.9	2.1	0.5	1.8	1.6	2.2	0.3	-1.1	-1.9	-
North Hertfordshire	2.8	3.5	1.6	1.4	0.9	1.3	2.6	1.2	2.8	-
North Norfolk	0.5	1.7	0.2	0.9	1.0	1.1	0.7	1.9	0.5	-
Norwich	-3.7	2.9	1.4	1.7	0.4	0.7	-2.6	-3.3	-3.7	-
Peterborough	-1.0	2.3	0.8	0.9	1.3	1.4	0.3	-1.8	-1.0	-
Rochford	-0.1	2.6	1.4	1.6	0.2	0.4	-1.8	-1.3	-0.1	-
South Bedfordshire	3.1	3.1	0.7	0.8	-0.8	-0.5	0.5	0.7	3.1	-
South Cambridgeshire	0.3	3.3	1.3	2.4	1.3	2.1	1.8	1.6	0.3	-
South Norfolk	2.7	3.0	1.4	2.1	2.8	3.2	3.6	3.4	2.7	-
Southend-on-Sea	-1.0	2.7	0.7	1.1	0.2	0.4	-1.6	-1.4	-1.0	-
St Albans	-1.3	3.5	1.8	2.2	1.3	1.6	0.1	-0.7	-1.3	-
St Edmundsbury	1.9	2.7	1.1	1.4	2.0	2.2	4.3	3.6	1.9	-
Stevenage	1.8	4.0	2.2	2.4	2.1	2.5	2.2	2.7	1.8	-
Suffolk Coastal	-0.8	3.1	0.9	0.8	1.4	1.9	-0.2	-0.5	-0.8	-
Tendring	0.5	2.3	0.8	0.9	0.8	1.1	-0.3	-0.5	0.5	-
Three Rivers	-2.4	2.9	1.6	2.1	1.3	1.8	-1.1	-2.7	-2.4	-
Thurrock	-1.6	2.9	1.5	1.1	1.0	1.0	-0.3	-1.2	-1.6	-
Uttlesford	1.2	2.6	1.5	1.2	1.5	1.9	-0.3	0.0	1.2	-
Watford	-0.8	2.9	0.2	0.6	1.9	2.6	-2.0	-2.4	-0.8	-
Waveney	-1.2	1.5	0.4	0.7	0.9	1.1	0.4	-1.1	-1.2	-
Welwyn Hatfield	-0.6	2.9	1.3	1.2	1.1	1.6	-0.2	1.1	-0.6	-
Eastern	**-0.3**	**2.9**	**1.2**	**1.4**	**1.2**	**1.6**	**0.4**	**-0.2**	**-0.3**	-

Source: Oxford Economics

Monitoring the long-term forecasts

This section includes tables which compare long term change to population, employment and GVA forecasts across each of the model releases. This follows on from requests from the Model Steering Group. However, the long term outlook is based on a complexity of assumptions with each model run, each of which has been outlined in the report which accompanies each model release. As such, these tables are not accompanied by a recap of the assumptions as this information can be found by looking at previous reports.

Table 6.6: Comparison of population growth between EEFM updates, 2011-2031 (000s)

	Aut 08 2011-31 (000s)	Spr 09 2011-31 (000s)	Aut 09 2011-31 (000s)	Spr 10 2011-31 (000s)	Aut 10 2011-31 (000s)	EEFM 2012 2011-31 (000s)	EEFM 2013 2011-31 (000s)	EEFM 2014 2011-31 (000s)
Babergh	14.8	11.8	12.9	12.8	13.8	7.5	5.8	8.4
Basildon	20.3	12.7	14.1	14.0	13.6	19.2	21.8	27.9
Bedford	31.4	21.8	23.8	22.4	16.5	25.7	23.7	24.9
Braintree	20.7	14.9	15.3	14.6	12.7	21.3	27.0	26.0
Breckland	18.5	13.4	17.0	18.2	16.5	25.6	21.3	18.3
Brentwood	13.2	6.2	5.2	4.8	6.5	7.9	7.4	9.0
Broadland	32.1	30.7	31.1	31.0	30.4	15.3	10.4	7.8
Broxbourne	15.4	10.5	12.1	12.8	13.4	11.0	16.2	14.2
Cambridge	59.0	57.7	33.9	32.0	37.2	27.0	28.0	28.5
Castle Point	7.4	2.9	3.5	2.2	2.3	10.0	6.1	2.5
Chelmsford	27.3	21.8	23.9	22.0	25.2	34.0	24.9	21.8
Colchester	29.2	21.5	22.5	18.4	15.7	30.5	39.6	37.1
Dacorum	25.1	20.9	19.9	18.7	19.0	15.6	18.3	13.1
East Cambridgeshire	24.4	24.6	21.4	16.3	23.0	28.0	28.3	23.0
East Hertfordshire	29.6	28.4	31.7	31.7	31.8	25.0	26.6	26.4
Epping Forest	16.4	11.4	13.9	11.7	13.0	13.1	11.5	13.4
Fenland	11.4	7.4	11.0	11.8	10.0	21.3	23.9	13.3
Forest Heath	12.0	5.8	5.9	6.6	6.4	13.7	11.8	9.2
Great Yarmouth	12.4	6.4	7.5	7.0	6.4	12.5	14.1	12.8
Harlow	12.7	6.6	7.7	6.7	3.7	12.8	14.0	9.6
Hertsmere	21.1	11.7	11.5	10.6	12.2	13.1	18.0	17.2
Huntingdonshire	40.5	33.5	30.9	27.7	27.0	23.2	27.3	22.6
Ipswich	22.4	16.0	16.9	15.3	13.0	25.4	29.6	29.0
King's Lynn and West Norfolk	15.2	10.5	25.4	30.3	27.8	22.5	24.6	22.3
Luton	8.4	-6.6	9.8	17.3	12.9	37.8	34.5	34.1
Maldon	10.2	7.8	8.4	7.9	8.6	8.7	5.4	5.9
Mid Bedfordshire	37.1	34.8	29.8	29.9	31.8	40.6	30.1	29.1
Mid Suffolk	10.9	7.9	18.5	17.2	19.4	21.3	21.0	18.2
North Hertfordshire	42.8	16.3	16.1	16.0	17.8	22.2	25.7	20.7
North Norfolk	4.0	1.9	2.2	3.2	3.3	12.3	10.4	7.0
Norwich	28.0	17.0	17.9	19.7	15.2	31.9	24.8	23.8
Peterborough	17.1	11.5	14.9	12.7	10.7	32.6	34.7	42.2
Rochford	6.0	2.2	6.2	4.7	4.7	11.0	9.4	9.2
South Bedfordshire	32.4	14.3	16.2	19.0	18.2	17.1	17.7	17.5
South Cambridgeshire	47.2	46.9	39.9	39.5	48.9	43.0	43.6	38.3
South Norfolk	28.9	26.9	29.2	29.5	30.9	31.7	36.5	29.4
Southend-on-Sea	25.3	14.7	16.3	17.0	14.8	9.4	17.5	17.5
St Albans	34.8	30.3	23.9	23.3	28.5	25.3	23.2	22.8
St Edmundsbury	24.4	20.8	20.7	19.1	18.7	13.8	23.0	21.3
Stevenage	13.1	9.1	10.2	10.7	10.3	10.0	8.2	13.5
Suffolk Coastal	25.8	18.9	20.5	19.1	20.0	26.0	25.6	17.0
Tendring	32.8	20.4	20.4	19.7	12.5	28.0	11.8	11.8
Three Rivers	14.4	10.7	9.2	8.5	11.9	10.8	9.7	8.9
Thurrock	33.1	22.5	25.9	23.0	21.1	39.7	34.8	32.2
Uttlesford	9.0	12.4	11.3	9.5	11.2	9.4	13.2	13.8
Watford	19.3	6.9	5.1	4.1	8.4	12.6	17.3	19.5
Waveney	4.4	5.2	5.9	6.1	4.2	8.3	5.5	8.9
Welwyn Hatfield	28.5	24.0	17.5	19.2	23.1	25.9	24.3	27.2
Eastern	**1070.4**	**786.1**	**815.3**	**796.0**	**803.9**	**990.7**	**988.4**	**928.4**

Source: Oxford Economics

Table 6.7: Comparison of employment growth between EEFM updates, 2011-2031 (000s)

	Aut 08 2011-31 (000s)	Spr 09 2011-31 (000s)	Aut 09 2011-31 (000s)	Spr 10 2011-31 (000s)	Aut 10 2011-31 (000s)	EEFM 2012 2011-31 (000s)	EEFM 2013 2011-31 (000s)	EEFM 2014 2011-31 (000s)
Babergh	13.3	9.3	9.7	9.6	9.7	5.1	2.5	5.3
Basildon	14.6	9.5	11.4	4.1	4.2	-0.3	5.9	17.1
Bedford	18.6	10.6	11.2	8.4	2.8	9.3	3.8	9.4
Braintree	10.9	5.1	5.9	4.9	2.7	7.0	8.6	13.5
Breckland	14.0	11.5	6.9	6.3	4.5	4.3	4.0	6.4
Brentwood	12.8	3.9	3.7	1.2	2.8	3.5	7.0	12.3
Broadland	9.8	9.6	10.0	10.5	7.4	8.3	1.7	0.8
Broxbourne	10.2	5.6	6.2	2.9	2.5	3.7	6.4	11.3
Cambridge	57.5	53.6	40.3	32.7	35.9	22.1	20.3	24.2
Castle Point	5.9	3.1	3.5	1.3	0.6	2.0	0.1	4.8
Chelmsford	22.4	18.6	21.3	14.2	13.6	35.9	21.6	21.3
Colchester	15.7	11.7	14.1	12.9	8.7	18.1	14.1	13.4
Dacorum	23.3	15.6	16.5	12.9	11.0	10.5	7.8	9.4
East Cambridgeshire	13.2	11.6	11.0	7.7	8.2	7.7	9.4	8.2
East Hertfordshire	11.1	11.9	13.6	8.1	6.8	9.6	12.3	9.5
Epping Forest	9.4	7.5	9.1	4.2	3.2	11.2	8.5	9.7
Fenland	6.0	5.8	5.9	7.5	5.4	4.9	8.4	7.3
Forest Heath	9.1	4.0	3.9	3.8	3.2	3.3	3.4	3.1
Great Yarmouth	5.5	3.0	3.5	0.7	-1.1	4.0	4.1	5.4
Harlow	13.0	0.1	0.3	0.0	-2.2	3.9	4.2	7.5
Hertsmere	31.0	18.7	19.8	15.3	15.7	7.0	8.3	19.5
Huntingdonshire	19.3	11.7	10.8	6.3	3.4	5.0	4.5	10.0
Ipswich	17.3	12.9	12.8	8.0	4.6	12.7	11.4	12.4
King's Lynn and West Norfolk	1.9	1.1	11.6	16.2	12.7	3.6	2.0	8.4
Luton	14.4	5.0	9.5	22.2	17.7	16.1	9.3	11.3
Maldon	6.1	4.1	4.4	2.5	2.5	4.0	2.4	4.7
Mid Bedfordshire	16.6	15.9	14.4	11.2	10.3	13.2	9.0	13.1
Mid Suffolk	3.0	0.5	11.1	9.8	9.1	4.4	4.4	5.7
North Hertfordshire	26.7	10.5	5.5	5.3	4.4	5.5	4.3	7.0
North Norfolk	1.0	1.1	1.1	2.5	0.9	2.4	2.1	1.0
Norwich	14.3	11.3	11.9	12.5	8.7	16.5	17.1	16.5
Peterborough	9.2	10.9	11.7	6.2	3.7	17.6	11.0	32.0
Rochford	2.2	1.5	2.5	1.7	1.0	3.4	1.4	5.2
South Bedfordshire	19.3	5.0	5.7	3.9	3.1	4.8	6.0	13.7
South Cambridgeshire	29.0	21.3	21.2	25.2	27.6	24.8	16.2	19.3
South Norfolk	19.8	15.7	17.9	15.2	12.8	9.3	12.2	15.4
Southend-on-Sea	16.4	10.3	10.8	6.4	3.3	3.8	7.3	12.6
St Albans	27.7	18.1	17.1	16.7	16.9	16.8	18.2	18.1
St Edmundsbury	16.5	12.8	12.6	8.8	6.6	5.5	4.5	4.8
Stevenage	17.7	10.1	11.4	11.5	10.7	3.5	5.0	4.4
Suffolk Coastal	12.9	11.0	11.7	9.6	8.6	6.1	9.5	9.4
Tendring	10.4	5.5	5.1	4.7	1.0	5.6	3.6	5.8
Three Rivers	7.2	4.4	4.3	3.6	3.9	4.7	5.3	9.9
Thurrock	19.5	13.3	13.6	9.9	6.7	29.7	19.2	19.8
Uttlesford	4.2	8.9	8.0	5.6	4.2	3.9	6.4	7.0
Watford	23.5	10.6	10.7	3.2	6.2	21.9	16.0	24.0
Waveney	-1.2	2.2	2.3	2.7	0.5	0.4	0.4	3.2
Welwyn Hatfield	17.0	9.7	7.1	13.1	13.6	19.6	22.7	17.0
Eastern	**699.3**	**475.7**	**494.5**	**413.5**	**350.2**	**445.8**	**393.7**	**531.1**

Source: Oxford Economics

Table 6.8: Comparison of GVA growth per annum between EEFM updates, 2011-2031 (% pa)

	Aut 08 2011-31 (% pa)	Spr 09 2011-31 (% pa)	Aut 09 2011-31 (% pa)	Spr 10 2011-31 (% pa)	Aut 10 2011-31 (% pa)	EEFM 2012 2011-31 (% pa)	EEFM 2013 2011-31 (% pa)	EEFM 2014 2011-31 (% pa)
Babergh	2.9	2.8	2.7	2.9	3.0	2.7	2.3	2.3
Basildon	2.8	3.0	2.9	2.2	2.2	1.9	2.4	2.7
Bedford	2.5	2.5	2.3	2.2	2.0	2.4	2.1	2.2
Braintree	2.5	2.6	2.4	2.0	2.0	2.4	2.6	2.5
Breckland	2.6	2.9	2.4	2.2	2.2	2.2	2.3	2.2
Brentwood	3.3	3.1	2.6	2.1	2.2	2.4	2.9	3.1
Broadland	2.7	2.8	2.8	2.6	2.6	2.8	2.1	1.8
Broxbourne	2.7	2.8	2.5	2.1	2.2	2.4	2.6	2.6
Cambridge	3.9	4.6	3.6	3.3	3.2	2.8	2.9	2.9
Castle Point	2.7	2.7	2.4	1.8	1.9	2.0	1.8	2.5
Chelmsford	2.9	3.2	3.0	2.3	2.3	3.2	2.9	2.3
Colchester	2.8	2.7	2.5	2.3	2.2	2.7	2.7	2.0
Dacorum	3.0	3.0	2.6	2.5	2.5	2.7	2.6	2.2
East Cambridgeshire	3.4	3.4	3.3	2.8	3.1	3.0	3.1	2.5
East Hertfordshire	2.5	2.8	2.5	2.4	2.4	2.6	2.7	2.2
Epping Forest	2.2	2.5	2.3	1.9	2.0	2.7	2.7	2.5
Fenland	2.5	2.8	2.5	2.5	2.4	2.5	2.9	2.5
Forest Heath	2.8	2.8	2.3	2.3	2.3	2.5	2.6	2.2
Great Yarmouth	2.5	2.6	2.2	1.8	1.7	2.1	2.1	2.3
Harlow	3.0	2.6	2.4	1.9	1.7	2.2	2.3	2.4
Hertsmere	4.0	3.7	3.5	3.2	3.3	2.7	2.5	2.7
Huntingdonshire	2.7	2.7	2.5	2.0	2.0	2.2	2.2	2.2
Ipswich	2.8	2.9	2.8	2.3	2.1	2.6	2.6	2.3
King's Lynn and West Norfolk	2.0	2.3	2.7	2.8	2.7	2.0	2.0	2.1
Luton	2.4	2.5	2.4	2.9	2.8	2.7	2.3	1.7
Maldon	2.6	2.9	2.5	2.1	2.2	2.7	2.4	2.5
Mid Bedfordshire	2.9	3.2	2.8	2.7	2.7	2.8	2.4	2.5
Mid Suffolk	2.0	1.9	2.9	2.8	2.9	2.3	2.2	1.9
North Hertfordshire	3.5	3.1	2.5	2.3	2.4	2.5	2.3	2.3
North Norfolk	1.8	1.9	1.8	1.9	1.9	2.1	2.2	1.6
Norwich	2.5	2.9	2.8	2.5	2.4	2.7	2.8	2.3
Peterborough	2.2	2.9	2.8	2.4	2.2	2.7	2.5	3.1
Rochford	2.4	2.9	2.5	2.0	2.1	2.4	2.0	2.4
South Bedfordshire	3.2	2.6	2.3	2.0	2.0	2.4	2.8	3.3
South Cambridgeshire	3.4	3.6	3.4	3.5	3.5	3.2	3.0	2.9
South Norfolk	3.2	3.2	3.1	2.9	2.8	2.5	2.9	2.7
Southend-on-Sea	2.7	2.8	2.5	2.2	2.0	2.0	2.3	2.4
St Albans	3.4	3.6	3.1	3.0	2.9	2.9	3.1	2.6
St Edmundsbury	2.7	2.8	2.6	2.4	2.3	2.3	2.3	1.8
Stevenage	3.6	3.7	3.4	3.0	2.9	2.2	2.6	2.1
Suffolk Coastal	2.7	2.5	2.4	2.4	2.4	2.4	2.5	2.3
Tendring	2.6	2.4	2.1	1.9	1.9	2.2	2.1	2.1
Three Rivers	2.7	3.0	2.7	2.3	2.4	2.6	2.5	2.3
Thurrock	2.9	3.0	2.7	2.3	2.3	3.9	3.1	2.9
Uttlesford	2.3	3.2	2.8	2.4	2.4	2.3	2.5	2.4
Watford	3.4	3.1	2.8	2.2	2.4	3.3	3.1	3.4
Waveney	1.8	2.3	2.0	2.0	2.0	1.9	1.8	1.7
Welwyn Hatfield	2.9	2.9	2.4	2.7	2.8	3.0	3.1	2.3
Eastern	2.8	3.0	2.7	2.5	2.5	2.6	2.6	2.4

Source: Oxford Economics

7: Employment land use methodology

This chapter outlines our methodology for calculating employment land use forecasts under the 2014 update of the East of England Forecasting Model (EEFM).

Key outputs

The summary outputs under the employment land module for EEFM 2014 for the East of England and each district include:

- Industrial floorspace (B1c/B2), thousands m²
- Warehouse floorspace (B8), thousands m²
- Office floorspace (B1a/b), thousands m²

Detailed outputs including the variables above split by sector are available on the website.

Measure of employment

The employment forecasts used in the calculation to estimate employment land requirements are:

- Jobs-based
- Workplace-based
- Full-time equivalents (estimated as the number of full-time employed, plus 75% of the number of part-time employed)

Employment densities

The employment densities used within the EEFM are based on the Employment Densities Guide, published in 2010[1], which provides guidelines on employment densities by use class. The guide presents densities on a range of different floorspace measures: gross external area (GEA), gross internal area (GIA) or net internal area (NIA). Therefore, it has been necessary to convert all employment densities to the same measure – GIA.

[1] Employment Densities Guide, Homes & Communities Agency, 2010

Table 7.1: Employment densities by use, 2010 guide

Use	Use class	Use Type	Area per FTE (m²)	Floor Area Basis	Comment on potential variation
Industrial	B2	General	36	GIA	Range of 18 -60m²
Industrial	B1 (c)	Light Industry (Business Park)	47	NIA	
Warehouse & Distribution	B8	General	70	GEA	Range of 25 -115 m²
Warehouse & Distribution	B8	Large Scale and High Bay Warehousing	80	GEA	
Office	B1 (a)	General Office	12	NIA	
Office	B1 (a)	Call Centres	8	NIA	
Office	B1 (a)	IT/ Data Centres	47	NIA	
Office	B1 (a)	Business Park	10	NIA	
Office	B1 (a)	Serviced Office	10	NIA	

The following employment densities have been adopted for Industry and Warehousing, based on the general use types. The GEA for warehousing has been converted to GIA by using the CLG's Regional Spatial Strategy and Local Development Framework Core Output Indicators – Update 2/2008 guidance[2] which assumes a 3.75% difference.

For office use, the HCA guidance states that the GIA is typically 15-20% higher than net internal space. Using this figure this provides an employment density range for general office of 13.8 m² - 14.4 m².

Table 7.2: Employment densities – industry, warehousing and office (GIA)

Use	Use type	Density: Area per FTE (m²)	Notes:
Industry	B1c/B2	36	Uses General Industry
Warehousing	B8	67	Uses General Warehousing
Offices	B1	14 (based on the average of the range 13.8- 14.4)	Uses General Office

For detailed office uses the same process has been followed for call centres, business parks and serviced office whilst office headquarters are assumed to follow the general employment land density. As the guidance does not provide densities for R&D, science parks and small businesses uses these are assumed to follow the original densities from the 2001 guide. An alternative could be to use the B1c density, given the

[2] https://www.gov.uk/government/publications/employment-densities-guide

earlier employment land density guide showed densities for these uses similar to light industry. However, this would result in an overall density of around 60m², which seems very high when compared to the 2001 densities and is very close to the warehousing density.

Overall the following employment densities for detailed office use are used.

Table 7.3: Employment densities detailed office use

Use	Sub-use	Density: Area per FTE (m²)	Notes:
Office	*B1b use split:*		
	Science park & Small business units	32	Based on 2001 density guide
	High tech R&D	29	
	B1a split:		
	General Office	14	Based on NIA densities adjusted to GIA (average range of 15-20%)
	Serviced business centre & Business park	13	
	Call centre	10	

Allocating employment sectors to use classes

In order to forecast employment land it is necessary to convert the employment sector forecasts into office, warehousing and industrial uses. As the model provides employment sector forecasts by 31 sectors in total (comprising one or several 2 digit SIC codes) we have allocated each sector across the use classes in differing proportions. This analysis has been largely based on reviewing each SIC code in detail and judging the overall proportion that could be expected to be in industry, warehousing or office uses based on our knowledge of the East of England's economy. This is not an exact science as the classification of economic activities does not always lend itself to a straightforward allocation.

The EEFM sectors are mapped to use classes in differing proportions, as outlined in Table 7.4. Those sectors marked with a * need careful consideration given the nature of the activities undertaken, namely:

- **Waste and remediation -** we have allocated 97% of these activities to industry use to capture waste treatment activities (based on the 2012 employee share in BRES by detailed SIC codes).

- **Construction -** we have not included construction in B-use, however, we are aware that often this is classified as industry use.

- **Wholesale trade and repair of motor vehicles and motorcycles -** we have allocated 75% of this sector to warehousing based on the share of wholesale warehousing activities in the 2012 BRES numbers. The remaining 25% associated with the repair of motor vehicles has been allocated to industry.

- **Land transport** - we have allocated 39% of this sector to warehousing based on the share of warehousing and support activities for transportation in the 2012 employee BRES numbers.

- **Professional services** - we have allocated 96% of this sector to offices. We have excluded veterinary activities based on the share of employees in the 2012 BRES numbers.

- **Business services** - we have allocated 93% of this sector to offices. We have excluded travel agency, tour operator and other reservation services based on the share of employees in the 2012 BRES numbers.

- **Employment activities -** given that this sector includes temporary workers that may work in any industry we have allocated employment based on the weighted shares of all the other sectors' allocations to industry, warehousing and offices.

- **Publishing & broadcasting activities** - we have allocated all publishing activity to industry. For motion picture, video and television programme production, sound recording and music publishing activities which captures the production side of film and TV we have assigned 80% to warehousing given the large scale production sets often required and 20% to office use. For programming and broadcasting activities which incorporates broadcasting activities which are most likely to be studio based we have assigned 80% of these activities to office use and 20% to warehousing use. The proportions are then scaled depending on the relative employment shares in the 2012 BRES data.

- **Telecoms** - we have allocated 80% of telecoms to warehousing and the remaining 20% to offices.

- **Public administration** - we have allocated 61% of this sector to offices to take account of the share of general public administration activities; regulation of the activities of providing health care, education, cultural services and other social services, excluding social security; regulation of and contribution to more efficient operation of businesses; and foreign affairs. We have excluded defence activities; justice and judicial activities; public order and safety activities; fire service activities; and compulsory social security activities. The shares are based on the 2012 BRES data.

We would appreciate feedback on these sectors or any others, bearing in mind that a simple calculation is applied across the East of England. Densities and allocations are static across the decades in the spreadsheets, as we have made no assumptions about the impacts of changing working practices. We have applied assumptions across the whole region, rather than reflecting any local circumstances. An interactive version of the spreadsheets is available so that users can apply their own assumptions to reflect any specific local circumstances. Please see the Cambridgeshire Insight website for more information.

Table 7.4: Allocation of employment sectors by use class, SIC 07

SIC code	SIC description	Industry	Warehousing	Offices
		B1c/B2	B8	B1
01-03	Agriculture			
05-09	Mining and Quarrying			
10-12	Food Manufacturing	100%		
13-18, 31-33	General Manufacturing	100%		
19-23 excl. 21	Chemicals excl. pharmaceuticals	100%		
21	Pharmaceuticals	100%		
24-25	Metals manufacturing	100%		
28-30	Transport equipment, machinery & equipment	100%		
26-27	Electronics	100%		
35-37	Utilities			
38-39*	Waste and remediation	97%		
41-43*	Construction			
45-46*	Wholesale	25%	75%	
47	Retail			
49,52-53*	Land Transport		39%	
50-51	Water and air transport			
55-56	Hotels and restaurants			
58-60*	Publishing and broadcasting	66%	23%	11%
61*	Telecoms		80%	20%
62-63	Computer related activity			100%
64-66	Finance			100%
68	Real Estate			100%
69-75 excl 72*	Professional services			96%
72	Research & development			100%
77-82 excl 78*	Business services			93%
78*	Employment activities	12%	8%	22%
84*	Public administration			61%
85	Education			
86-88	Health and care			
90-93	Arts and entertainment			
94-99	Other services			

Detailed office uses

The sectors with some element of office use have also been assigned into the more detailed breakdown of office uses as shown in Table 7.5 below. Again, we would appreciate any feedback on these allocations.

Table 7.5: Allocation of office employment sectors by detailed office use classes, SIC 07

SIC code	SIC description	Offices	Split by:				
			B1b	B1b	B1a	B1a	B1a
		B1	Science Park& Small business units	Tech/ R&D	General Office	Serviced Business Centre & Business Park	Call Centre
58-60	Publishing and broadcasting	11%	0%	0%	11%	0%	0%
61	Telecoms	20%	0%	0%	20%	0%	0%
62-63	Computer related activity	100%	0%	0%	30%	60%	10%
64-66	Finance	100%	0%	0%	100%	0%	0%
68	Real Estate	100%	0%	0%	90%	10%	0%
69-75 excl 72	Professional services	96%	7%	7%	79%	2%	1%
72	Research & development	100%	20%	60%	10%	10%	0%
77-82 excl 78	Business services	93%	71%	1%	9%	4%	9%
78	Employment activities	22%	5%	1%	13%	2%	1%
84	Public administration	61%	0%	0%	61%	0%	0%

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Data Guide

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Data Guide

UK Regional Planning Service
September 2015

Contents

Executive summary

This document outlines the current variable coverage in the September 2015 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

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	√	√	√
Claimant Count	xls	xls	Upon request
Claimant Count rate	xls	xls	Upon request
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

2 Historical End-points

Figure 1.2: Last historic data point

Variable	UK	Region	County & Local Authority
Gross Value Added	2015q2	2013q4	2013q4
GVA by sectors	2015q2	2013q4	2013q4
Labour market variables	2015q1	2015q1	All 2013q4 except ILO 2015q1
Income	2015q1	2015q1	2013q4
Consumer spending	2015q1	2013q4	2013q4

The historical end-point represents the last period in time 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 end-point are Experian Economics' estimates.

We have not used any regional data published after August 1st 2015 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) mid-year estimates to 1997-2014 (revised 2013). The ONS 2012-based sub-national population projections by single-year age band have been spliced onto the 2014 mid-year estimates and constrained to the 2012 national projections.

UK forecast

This forecast is consistent with an Experian Economics' July 2015 macroeconomic forecast which includes the headline national account number for 2015q2. We explore this further in section 4.

Geographic boundaries

As communicated in previous data guides, we publish data on post-2009 local authority boundaries.

With the ONS gradually phasing out the publication of data on the pre-2009 local authority boundaries, it had 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:
North East	Chester-le-Street, Derwentside, Durham, Easington, Sedgefield, Teesdale, Wear Valley	County Durham
	Alnwick, Berwick-upon-Tweed, Blyth Valley, Castle Morpeth, Tynedale, Wansbeck	Northumberland
North West	Congleton, Crewe & Nantwich, Macclesfield	Cheshire East

	Chester, Ellesmere Port & Neston, Vale Royal	Cheshire West & Chester
West Midlands	Bridgnorth, North Shropshire, Oswestry, Shrewsbury & Atcham, South Shropshire	Shropshire
East of England:	Mid Bedfordshire, South Bedfordshire	Central Bedfordshire
South West	Caradon, Carrick, Kerrier North Cornwall, Penwith, Restormel	Cornwall
	Kennet, North Wiltshire, Salisbury, West Wiltshire	Wiltshire

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.

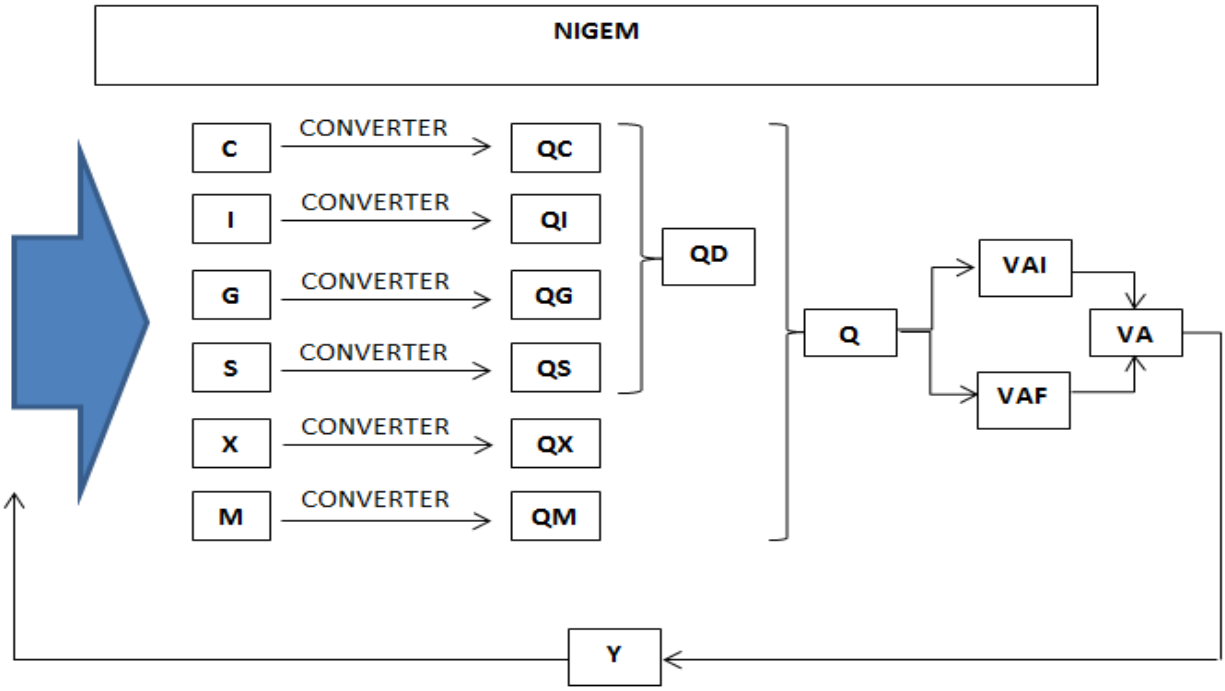
To produce the UK forecast we use a heavily customised version of the National Institute of Social & Economic Research's (NISER) model called NIGEM to provide our core macroeconomic forecast.

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 constraints 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. 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 2015 RPS uses the 2014 BRES, which provides data up to 2013. A new BRES will be published at the end of 2015 and will provide data up to 2014. 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.

GVA measured on the income basis is published in the regional accounts at an annual frequency in current prices. Total GVA lags the latest complete year by 12 months while the industry detail lags by a further year. (i.e. the regional accounts published in December 2014 contained GVA by region up to and including 2013 with industry detail up to and including 2012). With the exception of manufacturing, the industry detail is only at the section level. Beginning with the December 2013 Regional Accounts

[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.

(which were first incorporated in the March 2014 RPS), manufacturing GVA is available at the sub-section level. To construct the Chain Volume Measure data we follow these steps:

- the data is disaggregated and made quarterly using workforce jobs data;
- the data is deflated at the industry level using the UK deflators for the industries;
- the data is aggregated to produce a regional total – this implicitly creates a regional deflator by taking into account the different weightings of industries within a region.

In the Regional Accounts, the ONS has published experimental alternate GVA accounts on the production basis; these accounts include an estimate of chain volume measure (CVM) GVA for the regions. We have not incorporated these data for the reasons given in the FAQs (Appendix D.)

Income is published in the regional accounts on an annual basis with a full breakdown of income sources and deductions. 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 constitutes 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.

Population projections are obtained from the ONS (2012 projections) and spliced onto the 2014 mid-year estimates, constrained to the latest national 2012 projections. The revision back to 2002 due to the 2011 census were taken into account in the December 2014 RPS. This September 2015 RPS includes small revision to 2013 estimates, mainly due to the reallocation of Foreign Armed Forces as well as the new 2014 mid-year estimates.

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 started to increase from 60 in April 2012 and will reach 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.

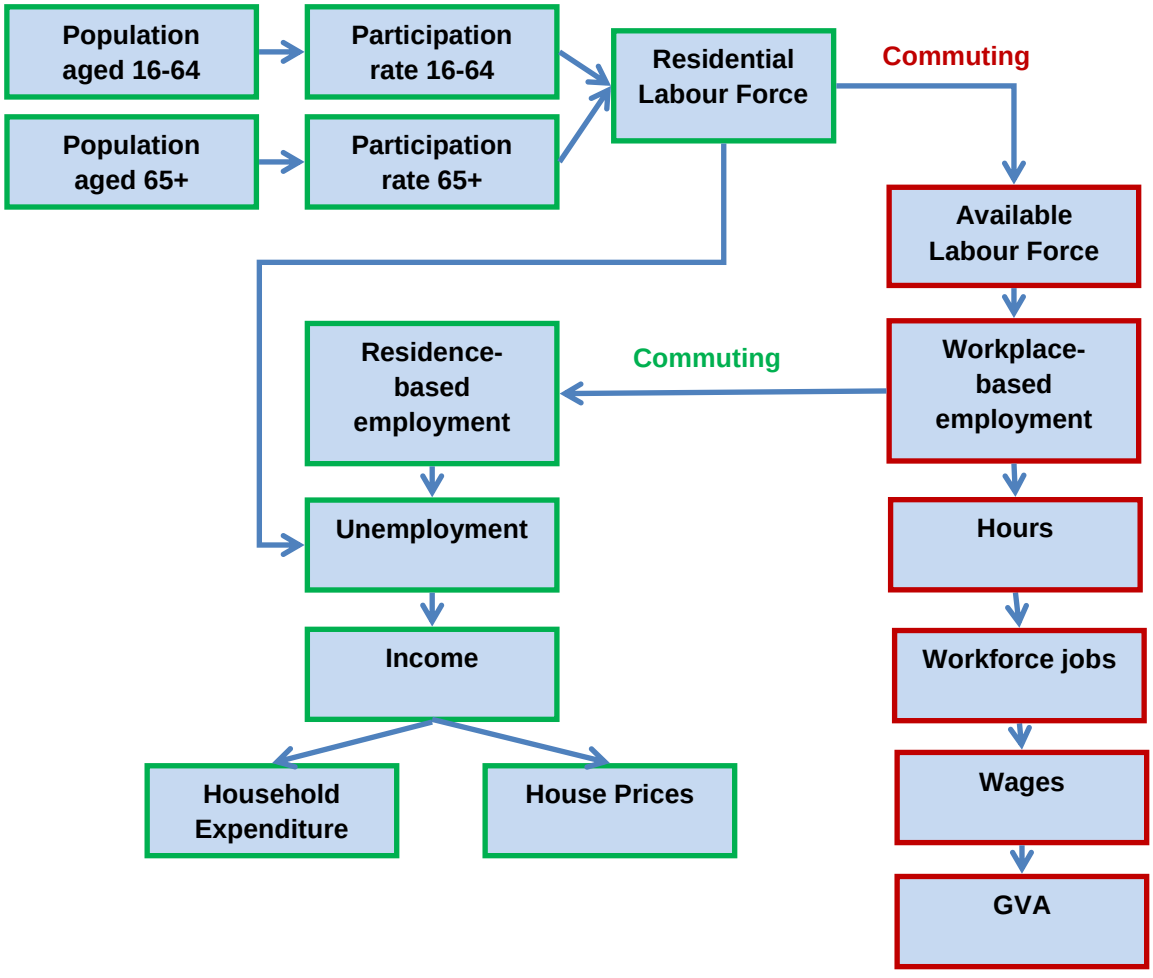
- The move from 66 to 67 is scheduled from April 2026 until April 2028 for both men and women.

In the 2013 Autumn statement it was announced 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.

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 particular 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 survey, the figures over time for a particular local area industry combination can be volatile[3]. 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 ILO data for residence and workplace-based employment and unemployment data on both the ILO[4] and claimant count basis. These data is obtained directly from NOMIS.

Regional accounts data is provided at sub-regional level for both GVA and income as it is at the regional level. The same methods are used at the local level as at the regional level to process these data. However, sub-regional data is only published for NUTS2 and NUTS3. Since not all local authorities constitute a NUTS3, it is necessary to disaggregate these data to local level. Further, the data provided at NUTS3 are less comprehensive than those provided at NUTS2[5]. We make use of this NUTS2 data by constraining our disaggregated NUTS3 estimates to their parent NUTS2. We then disaggregate these constrained NUTS3 data to local data[3].

In the case of GVA, the data provided at NUTS2 is at the section level with sub-sectional data for manufacturing. For NUTS3, several sections are aggregated. In particular, there is less detail in the service sectors. Disaggregation (of industrial data and from NUTS3 to local data) takes place using workforce jobs data at the industry level.

In the case of Income, the data provided at NUTS2 has the same level of detail as at the regional level. For NUTS3, the ONS has previously only released data at the primary and secondary level. They have now produced the full breakdown of income which we have included in our September 2015 RPS.

[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.
[3] The volatility represents sampling variability rather than actual volatility in the population data.
[4] 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.
[5] NUTS2 is provided at the same level of detail as NUTS1 (i.e. regional) level.

Disaggregation from NUTS3 to local level takes place using employee jobs, self-employed jobs, unemployment or population.

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.

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 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.
- 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[2] 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

[1] Separately for employee jobs, self-employee jobs, government trainee jobs and Her Majesty's Forces.
[2] i.e. all industries and job types aggregated.

    - 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 of that demand satisfied if there is insufficient available labour supply to meet those needs. Jobs 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.

4 Key changes since June 2015 RPS

4.1 UK forecast

The September 2015 RPS forecast is consistent with the July 2015 UK macro forecast.

The second estimate of GDP released at the end of August confirmed that growth had picked up to 0.7% q-o-q in 2015q2, from 0.4% in 2015q1. The details revealed a more balanced picture than in most recent quarters, with solid growth in consumer spending and business investment, alongside a rebound in exports. Consumer spending remained a key engine of growth in q2, expanding by a healthy 0.7%, following a rise of 0.9% in 2015q1. Strong confidence, recovering household incomes, low borrowing costs and very subdued inflation should continue to buoy spending for the rest of this year.

The June 2015 RPS was consistent with the May 2015 UK macro forecast. The main change to our forecast is a slight downgrade in our participation rate. Based on our analysis of LFS economic activity rates by 5-year age bands, we forecast that the overall UK participation rate will fall to just below 62% by 2035. For more details please see Appendix E.

The labour force consequently reaches almost 37 million people by the end of the forecast. Although many more people aged 65 and over will be working over the next 20 years, the majority will be working reduced hours.

Given these changes to the labour market we now forecast long-term annual GDP growth to settle at a rate of 2.3%, slightly below its recent historic average. We have also revised down our longer-term consumer spending profile; we now expect consumer spending growth to average 2.1% a year beyond 2019.

September RPS forecast. Previous forecast (May 2015 macro = June RPS) in brackets.

UK	2014	2015	2016	2017	2018-2025	2026-2035
GDP growth	3.0% (2.8%)	2.6% (2.4%)	2.2% (2.3%)	2.3% (2.3%)	2.4% (2.4%)	2.3% (2.4%)
Workforce Jobs growth	3.3% (3.3%)	1.4% (1.5%)	0.0% (1%)	0.7% (0.7%)	0.5% (0.7%)	0.6% (0.7%)
Unemployment rate	6.2% (6.2%)	5.4% (5.5%)	5.2% (5.2%)	5.1% (5.1%)	5.1% (5%)	5.2% (5.1%)
Real Income growth	0.8% (0.6%)	3.4% (3.4%)	1.9% (2.2%)	2.2% (2.3%)	2.2% (2.3%)	2.4% (2.6%)
Spending Volumes growth	2.5% (2.5%)	2.7% (2.6%)	2.2% (2.3%)	2.3% (2.1%)	2.2% (2.3%)	2.1% (2.3%)
House price growth	10.0% (10%)	5.0% (4%)	3.4% (3%)	3.3% (2.8%)	3.1% (2.6%)	3.9% (3.5%)

July UK Outlook

The following was the outlook in July, consistent with the regional forecast. Our UK macro view is updated monthly and can be found on our website http://economics.experian.co.uk.

The third estimate of GDP for the first quarter of 2015 showed that the economy grew by 0.4% q-o-q in real terms, an upward revision of 0.1 percentage points from the previous estimate.

Despite the loss of momentum in the first quarter of this year, consumer spending seems set to sustain GDP growth at a healthy pace, 2.5%, in 2015 as a whole. Spending is buoyed by zero inflation and the steady increase in wage growth which reached 2.8% excluding bonuses in the year to March-May. The two-year run of very positive developments in the labour market was interrupted with the publication of figures for March-May. Unemployment rose slightly while the number of self-employed people fell by 55,000, driving the change in employment into negative territory. Nevertheless, the underlying strength of the labour market is still intact and will continue to strengthen household budgets.

With the first rise in interest rates expected to be in late 2015 or early 2016, a significant impact on exposed households and on consumer demand will not be felt until 2017 or even 2018.

The strong economic performance of the past two years means that the UK economy has recovered ground lost during the great recession and its aftermath more quickly than seemed likely a few years ago. But the repercussions of the recession and the ongoing travails of the eurozone are set to hamper economic progress for a few years yet.

Key risks

The eurozone's problems still cast a cloud over future performance. The fundamentally unresolved Greek crisis poses a downside risk to European and UK growth prospects.

Export weakness is a continuing source of concern. Net trade is likely to remain a drag on UK growth prospects with weak overseas demand and a strong pound dampening the outlook for UK exports. There is an upside risk to the forecast if a eurozone recovery boosts exports.

The recovery looks reasonably secure but there are pitfalls ahead, notably the need to extend fiscal restraint. The impact of tighter monetary policy from early 2016 at a time of fiscal restraint could constrain growth.

Uncertainty regarding the UK's future in the EU could depress investment, especially from foreign investors.

4.2 Regional Forecast

Given revisions at the UK level to which our regional data is constrained, changes to the history can be traced back to the following new data (June 2015 RPS endpoint in brackets):

- Population: Mid-Year estimates revised 2013, new 2014.
- 2011 Census Commuting data (previously used the 2011 Annual Population Survey estimates)
- Regional Workforce Jobs 2015q1 (previously 2014q4)
- ILO data for 2015q1 (previously 2014q4)

The mean revision to 2013 population MYE was +0.01%. The change was due to the reallocation of Foreign Armed Forces in England and at the regional level this made very little difference with East of England and South East revised up the most, by 0.02%, and Yorkshire & Humber down by 0.01%.

The 2014 mid-year population estimate for the UK was 0.1% higher than the projection for the year (56k people). The East of England saw the biggest under-estimation in the original projections with the 2014 MYE out-turn 0.23% higher and while Yorkshire & Humber out-turn was 0.09% lower.

The Census 2011 commuting data is from a much larger sample than the Annual Population of the same year that was used previously. The main differences between the two at the regional level are; slightly more commuting in general with Greater London attracting more commuters who live in the East of England and the South East and relying less on its own resident population. Other differences are minor.

As noted in section 4.1, we changed our participation rate assumptions at the UK level. There was a subsequent downgrade to our long-term growth rate in most variables and most regions have seen a downgrade as a result. One notable exception is our house price forecast which has been upgraded, partly as a result of a higher population level following the release of the 2014 mid-year estimates.

September 2015 RPS forecast. Previous forecast (June 2015 RPS) in brackets.

Regional forecast 2016-35 ave. growth	SW	SE	GL	ET	EM	WM	NW	NE	YH	SC	WA	NI
GDP growth	2.2% (2.4%)	2.5% (2.6%)	2.8% (2.8%)	2.4% (2.5%)	2.2% (2.3%)	2.1% (2.2%)	2.1% (2.2%)	1.9% (2.1%)	2.1% (2.2%)	1.9% (2.1%)	1.9% (2.1%)	1.9% (2.1%)
Workforce Jobs growth	0.6% (0.7%)	0.7% (0.8%)	0.9% (0.9%)	0.7% (0.8%)	0.5% (0.6%)	0.5% (0.6%)	0.4% (0.5%)	0.4% (0.5%)	0.5% (0.6%)	0.3% (0.4%)	0.4% (0.5%)	0.4% (0.5%)
Unemployment rate	4.2% (4.1%)	3.8% (3.8%)	6.8% (6.6%)	4.3% (4.4%)	4.6% (4.6%)	6.1% (6.1%)	4.9% (4.9%)	6.6% (6.4%)	5.4% (5.2%)	5.0% (4.8%)	5.5% (5.5%)	5.8% (5.7%)
Real income growth	2.4% (2.5%)	2.5% (2.6%)	2.4% (2.4%)	2.5% (2.6%)	2.2% (2.3%)	2.2% (2.4%)	2.1% (2.3%)	1.9% (2.1%)	2.1% (2.3%)	2.0% (2.1%)	2.1% (2.3%)	2.1% (2.3%)
Spending volumes growth	2.2% (2.4%)	2.4% (2.5%)	2.7% (2.8%)	2.2% (2.4%)	2.0% (2.2%)	2.0% (2.1%)	2.0% (2.1%)	1.7% (1.8%)	1.9% (2.1%)	1.9% (2%)	1.8% (2%)	1.9% (2.1%)
House price growth	3.4% (3.1%)	4.0% (3.7%)	4.0% (3.7%)	3.8% (3.5%)	3.2% (2.8%)	3.2% (2.9%)	3.1% (2.8%)	2.7% (2.4%)	2.9% (2.5%)	3.4% (3%)	3.1% (2.7%)	2.9% (2.5%)

4.3 Local Forecast

Given revisions at the regional and UK level to which our local data is constrained, changes to the history can be traced back to the following new data (June 2015 RPS endpoint in brackets):

- Population: Mid-Year estimates revised 2013, new 2014.
- 2011 Census Commuting data (previously used the 2011 Annual Population Survey estimates)
- Regional Workforce Jobs 2015q1 (previously 2014q4)
- ILO data for 2015q1 (previously 2014q4)

The revisions to 2013 mid-year estimates was mainly attributable to the reallocation of Foreign Armed Forces. Forest Heath is home to two large US air bases and saw by far the largest revision, down 2.9% on the original 2013 MYE. The next biggest downgrade was South Northamptonshire as -0.2%. The biggest upgrades were to East Cambridgeshire (0.5%) and St. Edmundsbury (0.4%). The mean revision was just 0.01%.

The 2014 MYE compared to the previous projections saw a mean upgrade of 0.12%. Isles of Scilly was the biggest upgrade (2.8%) while the City of London saw an out-turn 2.6% higher than anticpated. Other notable upgrades in the top 10 (in % terms) were Exeter (1.5%), Cambridge (1.5%), Tower Hamlets (1.5%), Westminster (1.4%) and Oxford (1.4%). The biggest downgrades were to Forest Heath (-2.4%), Richmondshire (-2.1%), Merton (-1.1%), Ealing (-1.1%), Harrogate (-0.8%).

We have re-visited the relationship between local workforce jobs and workplace-based employment. The local workforce jobs (which make use of BRES shares) have been 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.

The 2011 Census is drawn from a much larger sample than the previously used 2011 APS. If you have a request about a particular local authority then please contact us but in general there is slightly more intra-regional commuting highlighted in the Census.

As mentioned in section 3, our model makes use of commuting, participation rates whose starting points will be different due to new population estimates, the relationship between workforce jobs and workplace-based employment, and residence-based employment and workplace-based employment so changes will impact upon our forecasts.

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.

5 A note from the ONS on volatility

A change in methodology behind 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 yard-stick 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 Regio 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.	
Machinery & 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-2009 boundaries (347+33 London boroughs)

A full lookup in excel form can be found here

Appendix D…FAQ's

- Why does Experian's history for variable x differ from another source / raw survey data?
    - There are several possible reasons.
    - 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.
    - 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.
    - 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*?
    - The ABI/BRES are surveys taken from a particular year; they are not updated.
    - ABI/BRES is a source for ONS' workforce jobs but it is not the only source.
    - Experian's workforce job history is designed to be consistent with the latest available ONS workforce jobs estimates (which may represent additional data or improved methodology.)
    - 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?
    - We always use the latest available data at the cut-off date for history.
    - 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.)
    - New Expenditure data is available from the ONS at the UK level twice a quarter.
    - New LFS Employment data is available from the ONS once a quarter.
    - New Workforce Jobs data is available from the ONS once a quarter.
    - New BRES is published once a year (normally in December.)
    - 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.)
    - Population projections are published once every two years.
    - New mid-year population estimates are published annually.
    - New LCFS is published annually.
- How do revisions to historical data affect your history and forecasts?
    - As explained above, we always take into account the latest historical data.
    - The monthly UK macro forecast is updated after each ONS revision of GDP for a quarter.
    - The RPS is based on a particular UK macro forecast and includes the latest available regional and local data.
    - 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?
    - All our models are econometric models.
    - An econometric model is a model estimated on historical data.

    - The coefficients (i.e. interactions) in the model embed historical relationships between variables and historical growth rates in a variable.
    - 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?
    - 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.

    - 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.
    - 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.

    - We are able to make appropriate adjustments to the forecast to take into account certain large projects.
    - 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).
    - 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.
    - 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?
    - This is discussed in detail in the methodology section above for the regions and the locals.
    - It is important to remember that employment is forecast on both a residence and workplace basis.
    - Residence based employment depends on local population (labour supply) growth but also on demand for work throughout the region and across the regional boundary.
    - Workplace based employment depends on labour supply throughout the region and across the regional boundary.
- What is working age?
    - The definition of working age used based on the state pension age.
    - 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.
    - 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?
    - 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.

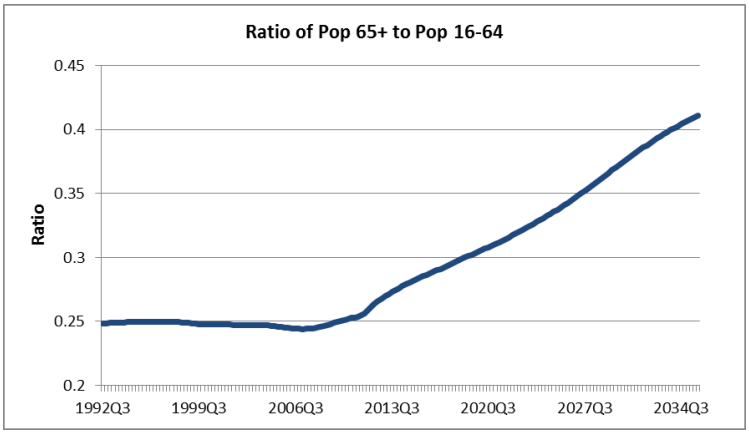
Appendix E…Activity Rates & the Ageing Population

In 2035, there will be more than 17 million people in the UK aged over 65; this contrasts with around 12m in 2015. Moreover, they will make up nearly a quarter of the entire population compared with around 18% in 2015. This change in the age-composition of the population will have a significant economic impact. Older workers will make an increasing proportion of the potential labour force. In this note, we consider the impact of different labour force participation rates for older workers and explain the participation assumptions we will use in our UK suite of models beginning with June 2015.

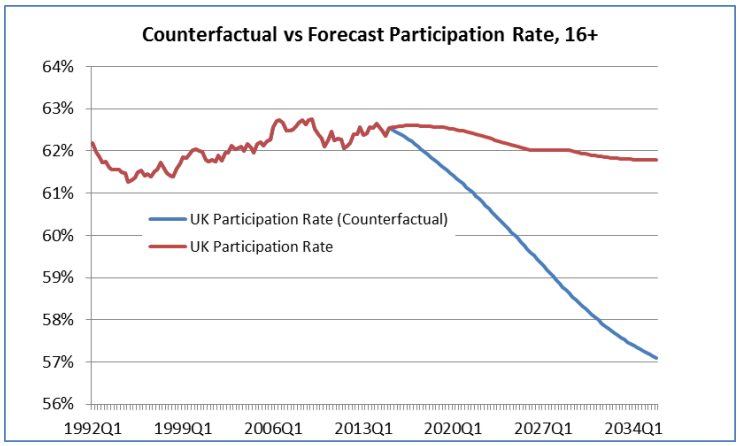
It will be convenient at this point to set out some key definitions:

- Participation Rates / Activity Rates: the proportion of the population either in employment or searching for employment
- Working Age Population: the population above the age of 15 but below the current state retirement age for their gender.
- Subnational Population Projections: population projections set out by the Office of National Statistics using 2012 mid-year population estimates.
- Labour Force Survey: survey of the employment patterns of the UK population. It provides official measures of employment and unemployment.

Over the last few years, the ageing of the population has begun to markedly change the demographic profile of the UK. According to the 2012 Subnational Population Projections, the proportion of the population aged 16 and over that was older than 65 remained at around 20% between 1997 and 2010. However, baby boomers entering retirement has caused this ratio to increase rapidly from 2011. Longer life expectancy will sustain the rising proportion, projected to reach 29% by 2035.

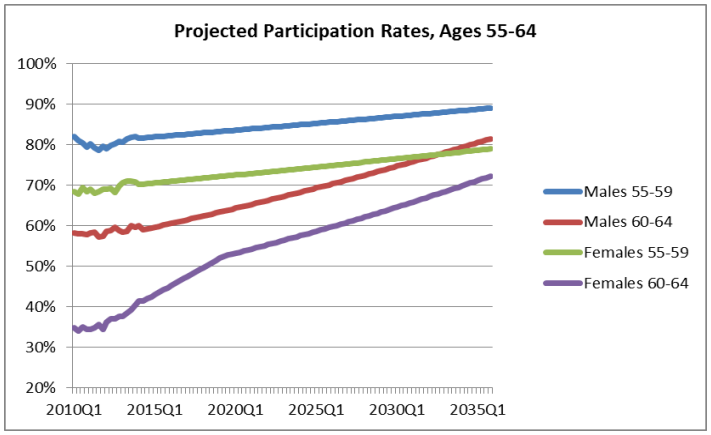


The impact of the ageing population can be seen in the participation rate chart below. The counterfactual (the blue line) is based on the assumption that older people will have the same participation rate in the future as they have in 2015. The overall participation rate for the population aged 16+ falls dramatically as older people – who have lower participation rates – make up an increasing part of the population. Such a scenario would lead to very slow labour force growth, growing at an annual average rate of only 0.19%. This would seriously limit the economic growth potential of the UK.

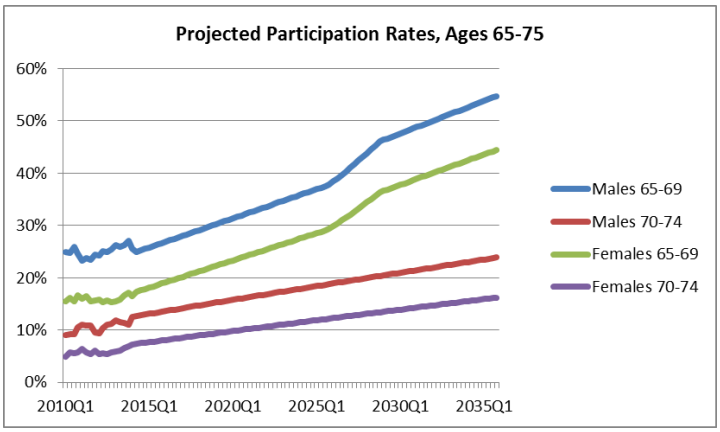


Based on our analysis of LFS economic activity rates by 5-year age bands below, we instead forecast that the overall UK participation rate will fall to just below 62%. The labour force is 8% larger than in the counterfactual scenario by the end of the forecast, reaching almost 37 million people.

We expect to see increasing participation rates across all older bands for both men and women. As the UK economy becomes increasingly service-oriented, older people are inclined to continue working. Improving health standards also mean that people are able to participate in the labour force for longer and need to build up enough savings ahead of longer retirements. The option to receive pensions as a lump sum may even leave people needing to return to the labour force at a later stage should they fail to adequately manage their finances.

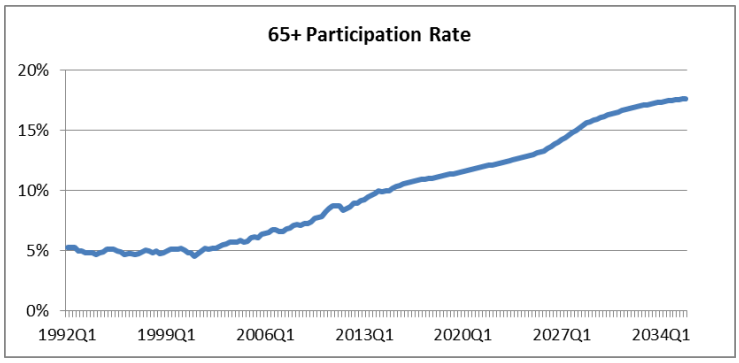


Policy changes have also begun to influence participation rates. The default retirement age has already been phased out and the State Pension Age (SPA) is gradually being increased. The SPA for women began to increase from 60 to 65 in 2010. An increase in the female participation rate for those aged 60-65 can be seen in the historical LFS data from around 2011. We have forecast that the rate will grow such that the gender gap in this age band approaches the corresponding gap for the 55-59 age band. The female participation rate also grows because cohorts displace one another over time and women born in later generations have had a higher propensity to work. As the SPA for both genders reaches 67 by 2028 and health standards improve, we see fewer people leaving the labour force between the ages of 60-64. The impact of the SPA policy changes can also be seen on the 65-69 age band.

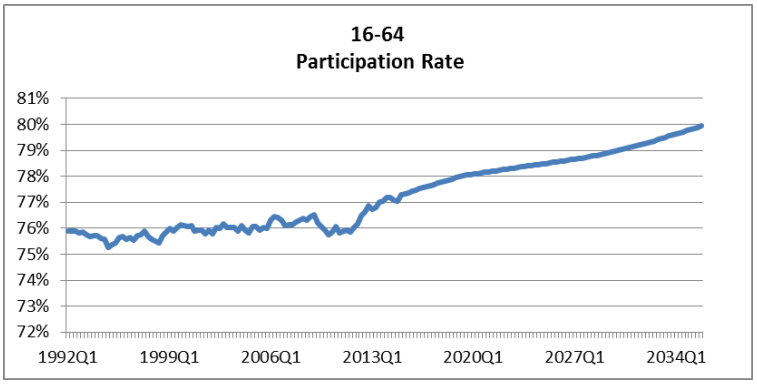


Our participation rates grow such that, by the end of the forecast, the rate for each age band by gender approaches that of the age band below at the beginning of the forecast.

There is ageing within the 65-plus population group. For example, there will be 6 times as many people over 100 by 2035 and the population older than 90 will more than double. We forecast that the overall 65-plus participation rate will increase to 18% by 2035, with growth rates fluctuating mainly due to policy changes and population growth across age bands.

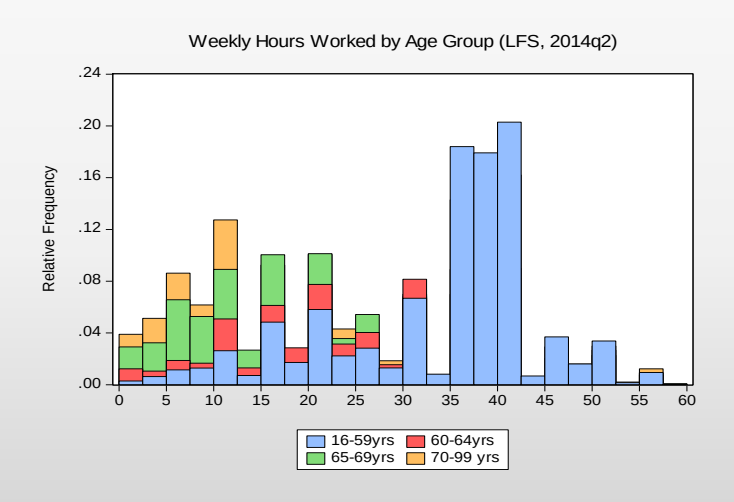


The increase in the activity rate of those aged 16 to 64 is due largely to the growing participation rate of those aged 55-59 and 60-64. It also accounts for policies designed to encourage more people to take part in the labour force.



We can apply this analysis to the regional and local level as well. The impact on our regional forecasts is that Greater London is the only area with a rising participation rate between 2015 and 2035. Greater London has the youngest population of the UK regions. By 2035 only 23% of the population in London will be 65 or over, while all other regions will see this proportion rise to above 40%.

Although many more people aged 65 and over will be working over the next 20 years, the majority will be working reduced hours. The relative distribution of hours worked by age, taken from the Labour Force Survey for 2014Q2, shows that most people younger than 65 work at least 35 hours per week. When we separate the age bands of those aged 65 and over, we see that people work fewer hours the older they get. We would expect the distribution for the 65-plus population to shift towards slightly longer hours over time.



We will be implementing these revised projections in our July 2015 UK macro forecast and in our September 2015 Regional and Local Forecasts.

Appendix F…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.

Experian Group Limited is listed on the London Stock Exchange (EXPN) and is a constituent of the FTSE 100 index. It has corporate headquarters in Dublin, Ireland, and operational headquarters in Costa Mesa, California and Nottingham, UK. Experian employs around 15,500 people in 36 countries worldwide, supporting clients in more than 65 countries. Annual sales are in excess of $3.8 billion (£1.9 billion/€2.8 billion).

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Appendix F Abbreviations and Glossary of terms used

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ABI – The Association of British Insurers collects extensive data from across the insurance industry including property data. ABI data has been used in this study.

BRES – The Business Register and Employment Survey is the official source of employee and employment estimates by detailed geography and industry, which have been used in this study.

EEFM – The East of England Forecasting Model (EEFM) was developed by Oxford Economics to project economic, demographic and housing trends in a consistent fashion. It covers a wide range of variables, and is designed to be flexible so that alternative scenarios can be run. The EEFM provides forecasts for the East of England region and sub-regions (counties, unitary and district authorities), including the South East Midlands Local Enterprise Partnership area (East of England Local Government Association, 2013).

FEMA – The Functional Economic Market Area (FEMA) is a key economic market that broadly corresponds to sub-regions or city regions, rather than administrative boundaries, as flows often overlap local authority boundaries. There is no universal approach to defining FEMAs, and they are often developed using census commuting data, and supplementing this with data from other key markets: such as housing markets; supply chains in industry and commerce; and service markets for consumers. The 2010 CLG Report 'Functional Economic Market Areas – and Economic Note' provides further information on FEMAs.

GDP – Gross Domestic Product is the monetary value of all the finished goods and services produced within a country's borders in a specific time period, usually calculated on an annual basis.

Nomis – This is a service provided by the Office for National Statistics, which provides access to the most detailed and up-to-date UK labour market statistics, which have been used in this study.

MKC – Milton Keynes Council is the Local Authority for Milton Keynes which has commissioned this study, together with Milton Keynes Development Partnership.

MKDP – Milton Keynes Development Partnership is an independent legal entity wholly owned by Milton Keynes Council to facilitate Milton Keynes' continued growth and economic success. It does this by promoting the development of its land assets in line with the Council's Corporate Plan and Economic Development Strategy.

ONS –The Office for National Statistics is the UK's largest independent producer of official statistics and is the recognised national statistical institute for the UK, which conducts the Census for England. It is responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels. ONS data has been used in this study.

NPPF - The National Planning Policy Framework sets out the government's planning policies for England and how they are expected to be applied. It provides guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications (CLG, 2012).

NPPG – The National Planning Practice Guidance helps to put the strategic vision set out in the NPPF into practice. It contains practical information for local authorities such as what the policies in development plans should and should not include.

SEMLEP – The South East Midlands Local Enterprise Partnership is collaboration between local authority and private sector partners, committed to delivering the strategic infrastructure and skills projects that are essential for economic growth, new jobs and new homes, in the South East Midlands.

VOA – The Valuation Office Agency is an executive agency, sponsored by HM Revenue and Customs. It provides the government with valuations and property advice, and produces statistics, which have been used in this study.

Appendix G
References

Appendix G – References

- Milton Keynes Annual Monitoring Report 2011/2012
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