Belfast City Council

Assessing Employment Space Requirements across the City – 2015-2030

Ulster
University
Economic
Policy Centre

Andrew Webb and Jordan Buchanan

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Overview

UUEPC ('the centre') have a developed a Local Economic Forecasting model as part of the Local Government sponsorship package, to which Belfast City Council ('the Council') contribute. The Centre produces bi-annual forecasts for each of the eleven Council areas in NI. The forecasts cascade from the Cambridge Business Research team and the Centre's national and NI forecasting models. Details on how that model operates are presented in Appendix 1. The Local Economic Forecasting model includes baseline, Corporation Tax and "upper" scenarios. The upper scenario was developed in order to illustrate the type of economy NI might aspire to. A post-Brexit scenario will be developed during Autumn 2016.

The Council are currently developing a range of ambitious strategies that, if successfully implemented, will achieve the overarching ambition of a 'successful place where people love to live, work and visit and which attracts investment and talent'. Of particular relevance to this research, the Council's emerging Local Development Plan includes a commitment to 'maintain a strong and growing economy through ensuring a range of suitable sites for employment uses are available and able to be developed to meet the future demand for jobs.'

In order to consider how employment space demands might change over the period to 2030, UUEPC have developed an economic modelling system which converts Belfast's employment forecasts into employment space requirements using Employment density guidance published by the Homes and Communities Agency[1].

Caveats

This paper provides a framework for considering how demand for employment space is likely to be affected by forecast employment growth in Belfast. However, there are a number of caveats to be aware of in the use of the outputs provided in this paper.

1) The analysis does not account for changing work patterns or changing trends in employment densities over time. It may be the case that increases in home working or changes to best practice in office design over time change employment densities. It was not feasible within the remit of this research to take a view on how this issue will impact over time and so current employment density guidance is applied consistently throughout.

2) It was beyond the scope of this research to consider current or future supply of employment space in Belfast and whether there is a mismatch. Further detailed research would be required to audit current provision. However, a range of sensitivity analyses are applied to the results to indicate the impact of different levels of current capacity and vacancy rates.

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[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/484133/employment_density_guide_3rd_edition.pdf

Labour Market Context

This element of the report presents the UUEPC baseline forecasts and 'upper scenario' for employment numbers in Belfast. The upper scenario is framed as follows:

- The upper scenario includes the impact of a corporate tax reduction to 12.5% in 2018
- The NI employment rate would rise closer to the current UK employment rate (average over 3 years, assumed to increase from 68% to 71.5%);
- The biggest growth is applied to the higher value added and export potential areas of the economy (ICT, Professional Services and Manufacturing);
- Lower but appropriate levels of growth applied to the wider supporting sectors such as Retail, Hospitality, Construction and Transport; and
- Increased private sector growth should also increase the tax base and therefore the reduction in spending on public sector services would not be as significant.

There are currently 245,000 people employed in Belfast. This is c.38,000 more than in 2001 and, with the exception of two years (2009 and 2012) when 10,000 jobs were lost in the city, figures have been on consistent upward trend. In fact, sine the decline in 2012, Belfast has gained over 14,000 more jobs.

Figure 1: Total Employment in Belfast 2001-2030
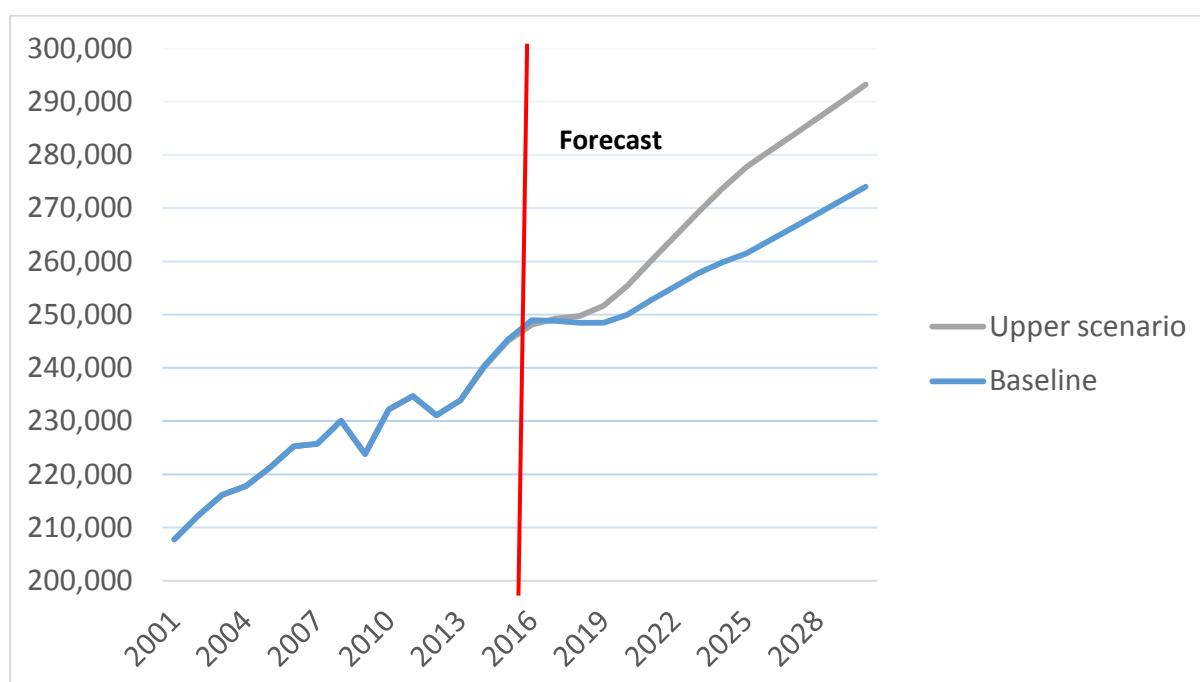
Source: NISRA, UUEPC

The expected path for future employment growth broadly positive. The baseline scenario, UUEPC's estimation of the most likely economic outcomes for the Northern Ireland economy and Belfast over the period to 2030 would result in a period of slight employment declines until 2019 followed by a return to growth from 2020 onwards. Between 2016 and 2030, UUEPC's forecast's suggest that Belfast's employment will be 25,000 higher than current levels. The upper scenario, as defined above, would result in considerably stronger job creation, adding a further 20,000 above the baseline scenario and resulting in total employment of c.293,000.

Labour market: sectoral analysis

The sectoral mix in Belfast is heavily weighted towards the private sector and office/retail type employment. Private sector jobs account for two thirds of total employment, with one third in the public sector. Across all sectors, Health and social work is the largest, accounting for 15% of all Belfast employment. As Belfast is host to three significant hospitals, this concentration of employment is unsurprising. Belfast's other key sectors include the 'city friendly' type sectors such as retail (12%), Administrative and support (10%), other private services (10%) and professional services (7%).

Figure 2: Employment across sectors in Belfast, 2015
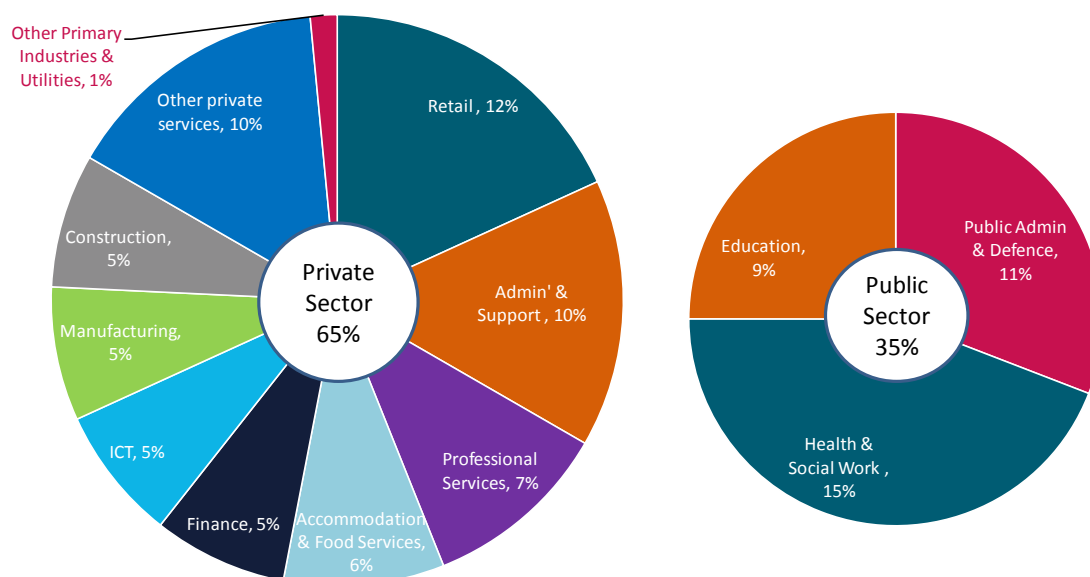
Source: Department for the Economy and UUEPC

The contribution to Belfast's growth from each sector is presented in figure 3 and figure 4. In the baseline scenario, administration services contribute more jobs to 2016-2030 growth than any other, adding just over 5,000 jobs. Professional and Scientific and Information and Communication complete the three, adding 4,877 and 3,318 jobs respectively.

The nature of the upper scenario, including a reduced corporation tax rate is reflected in a slight shift in sectoral drivers of growth. In this scenario information and communication is the sector that contributes the most jobs to the 2016-2030 growth – over 10,000 jobs, a quarter of the total. Professional and Scientific and Administration services make up the rest of the top three, adding 8,206 and 7,092 jobs respectively.

Figure 3: Employment change 2016-2030 (Baseline Scenario)
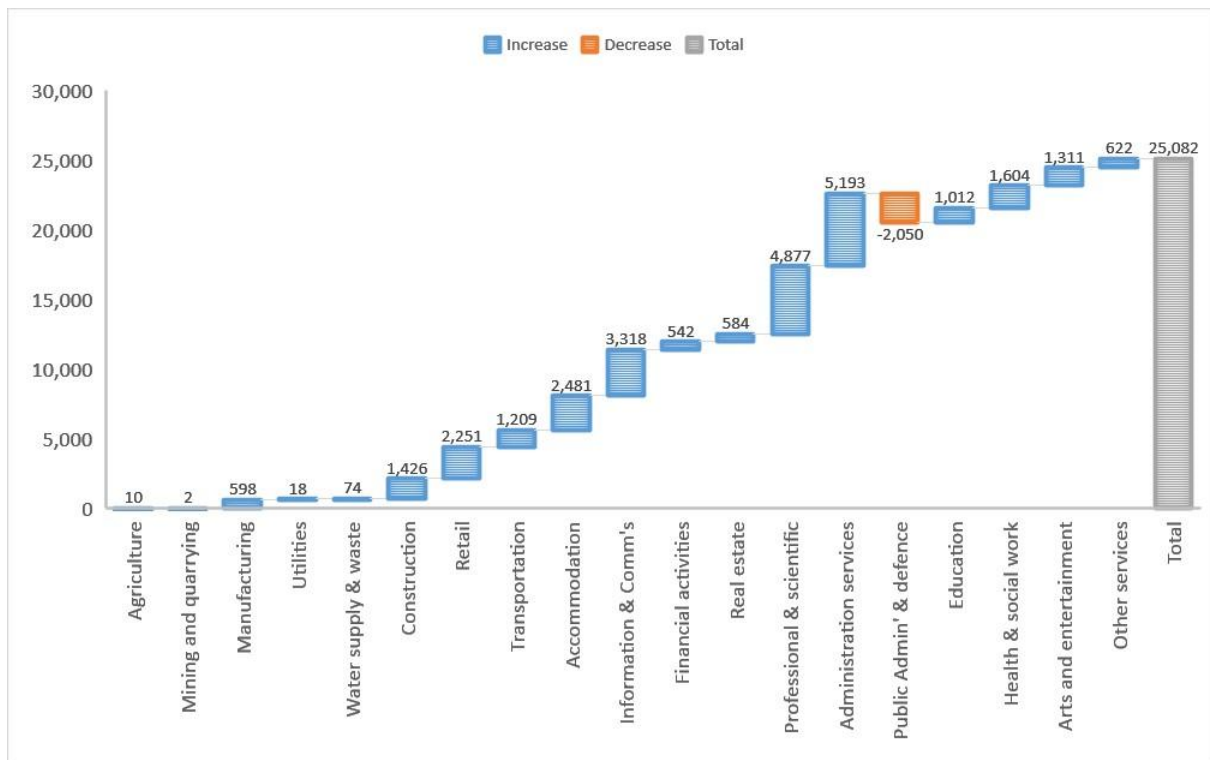
Source: UUEPC

Figure 4: Employment change 2016-2030 (Upper Scenario)
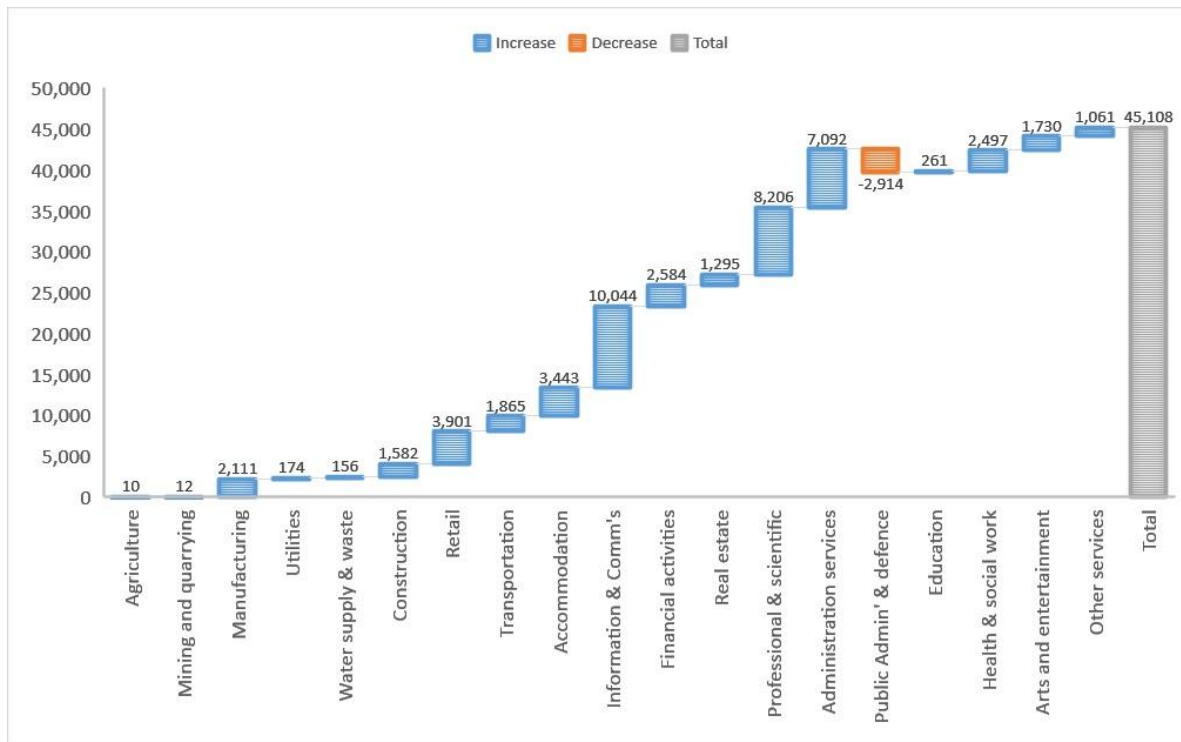
Source: UUPEC

The following section assesses how these employment growth statistics impact on employment space demand.

Employment Space Demand

The approach UUEPC have taken to converting employment by sector into square metre requirements is:

- The Employment Density Guidance from the Home and Communities Agency provides a range of SQ M guides by business use class and sub sector (table 1). UUEPC have applied a mid-point for each use class.
- UUEPC calculated a matrix of use class by sector. For example, the manufacturing sector is classified as 30% R&D space, 50% light industrial and 20% 'industrial and manufacturing' space. The use class by sector matrix is presented in appendix 2
- For each sector, employment from 2016 to 2030 is applied to the use class by sector matrix to calculate sq m demand by year.

Table 1: Employment Densities

Use class	Sub category	Sub sector	Density (Sq metres)
A1	Retail	High Street	15-20
		Foodstore	15-20
		Retail Warehouse	90
A2	Finance and professional services		16
A3	Restaurants & Cafes		15-20
B1A	General Offices	Corporate	13
		Prof services	12
		Public sector	12
		TMT (Tech, media & telecoms)	11
		Finance and insurance	10
	Call centres		8
B1B	R&D Space		40-60
B1C	Light Industrial		47
B2	Industrial and manufacturing		36
B8	Storage and distribution	National distribution centre	95
		Regional distribution centre	77
		Final mile distribution centre	70
B Mixed Class	Small Business Workspace	Incubator	30-60
		Maker spaces	15-40
		Studio	20-40
		Co-working	10-15
		Managed workspace	12-47
B8 /SUI Generis	Data centres	Wholesale	200-950
		Wholesale dark site	440-1400
		Co-location facility	180-540
C1	Hotels	Limited service/budget	1 per 5 beds
		Mid-scale	1 per 3 beds
		Upscale	1 per 2 beds
		Luxury	1 per 1 bed
D2	Fitness centres	Budget	100
		Mid Market	65
		Family	65
	Cinema		200
	Visitor and cultural attractions		30-300
	Amusement and entertainment centres		70

Source: Home and Communities Agency

The results of the employment space demand are presented below. In the base scenario, UUEPC estimates suggest that Belfast will require a total of 675,000 sqm by 2030. In the upper scenario, over 1.1m sqm is forecast to be required. To place this in context, on the first 6 months of 2016, CBRE report that 21,375 sqm of office space has been taken up in Belfast. Focussing on the upper scenario, the largest requirement will be in use class B1A, General offices. This class will require an estimated one third of the total requirement. Small business space, hotels and Storage/distribution are also estimated to require over 100,000 sqm each.

Table 2: Demand for employment space, 2016-2030

Use Class	Sub Category	Base Scenario Sqm	Average Sqm per annum	Upper Scenario Sqm	Average Sqm per annum
A1	Retail	39,000	3,000	68,000	5,000
A2	Finance & Professional Services	20,000	1,000	50,000	4,000
A3	Restaurants & Cafes	15,000	1,000	23,000	2,000
B1A	General Offices	209,000	15,000	376,000	27,000
B1B	R&D Space	27,000	2,000	60,000	4,000
B1C	Light Industrial	25,000	2,000	66,000	5,000
B2	Industrial & Manufacturing	5,000	-	19,000	1,000
B8	Storage & Distribution	76,000	5,000	116,000	8,000
B Mixed Class	Small Business Workspace	106,000	8,000	187,000	13,000
C1	Hotels	124,000	9,000	172,000	12,000
D2	Fitness Centres/Leisure/Cultural	30,000	2,000	44,000	3,000
	Total	**675,000**	**48,000**	**1,180,000**	**84,000**

Source: UUEPC

Sensitivity Analysis

Of course, not all future demand will require new buildings. Many businesses will expand within their current footprint and vacant property will also be absorbed, if fit for purpose. It was beyond the scope of this research to audit current provision of the extent to which employment growth in Belfast can be absorbed by current provision. Rather, sensitivity analysis has been applied to the numbers above on the basis that a) 10% and b) 20% of employment growth can be absorbed by current provision. These assumptions can be revised should data become available.

The results of the sensitivity analysis are presented overleaf. In summary, the range of employment space demand ranges from 540,000 sqm for the base scenario with the assumption that 20% of demand is met from current provision to 1,180,000 sqm in the upper scenario with assumption on current capacity.

**Table 3: Demand for Employment Space, 2016-2030, sensitivity analysis**

		No Sensitivity Applied		Capacity of 10%		Capacity of 20%	
		Base Scenario	Upper Scenario	Base Scenario	Upper Scenario	Base Scenario	Upper Scenario
A1	Retail	39,000	68,000	35,100	61,200	31,200	54,400
A2	Finance & Professional Services	20,000	50,000	18,000	45,000	16,000	40,000
A3	Restaurants & Cafes	15,000	23,000	13,500	20,700	12,000	18,400
B1A	General Offices	209,000	376,000	188,100	338,400	167,200	300,800
B1B	R&D Space	27,000	60,000	24,300	54,000	21,600	48,000
B1C	Light Industrial	25,000	66,000	22,500	59,400	20,000	52,800
B2	Industrial & Manufacturing	5,000	19,000	4,500	17,100	4,000	15,200
B8	Storage & Distribution	76,000	116,000	68,400	104,400	60,800	92,800
B Mixed Class	Small Business Workspace	106,000	187,000	95,400	168,300	84,800	149,600
C1	Hotels	124,000	172,000	111,600	154,800	99,200	137,600
D2	Fitness Centres/Leisure/ Cultural	30,000	44,000	27,000	39,600	24,000	35,200
	Total	**675,000**	**1,180,000**	**607,500**	**1,062,000**	**540,000**	**944,000**

Source: UUEPC

Conclusion

Belfast's employment forecasts suggest growth of between 25,000 and 45,000 between 2016 and 2030 across the base and upper scenario. Converting these employment projections into an estimate of the demand for employment space suggests that between 540,000 sqm and 1,180,000 sqm could be required by 2030. The greatest demand is projected to come from use class B1A, General Offices. The upper scenario, with no assumption on space capacity within current stock, suggests that demand for this class could be 376,000 sqm.

Figure 5: Employment space demand 2016-2030, upper and lower range
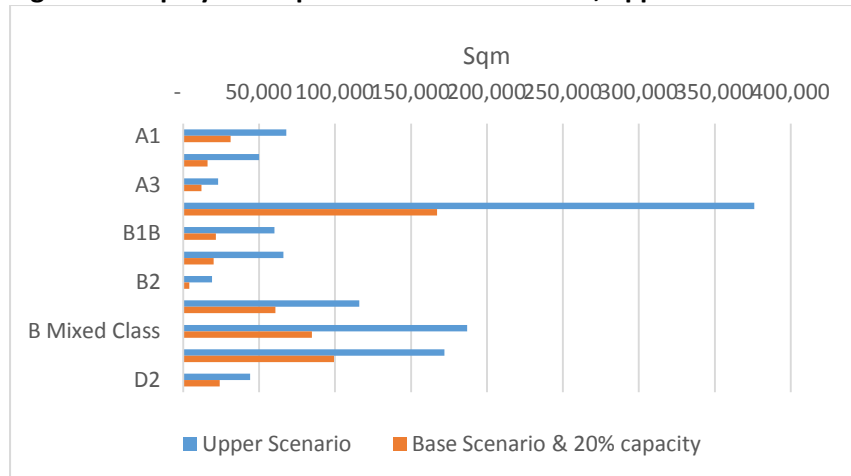
Source: UUEPC

Appendix 1: The Cambridge Business School, UUEPC UK forecast model

A detailed exposition of the UK Forecast Model can be found at http://www.cbr.cam.ac.uk2. In summary:

- UKMOD is an econometric (or structural) model. It describes how sets of exogenous variables (i.e. determined outside the model, such as world trade or the oil price), policy instruments and economic shocks, determine a set of endogenous variables (e.g. GDP or price inflation).
- The model is Keynesian in that it is largely concerned with determining demand. The structure of the model is conventional within the Keynesian tradition with aggregate demand determined as the sum of household consumption, investment, government consumption, exports and imports. Supply side variables such as capital stock and labour supply are determined endogenously, (or semi-endogenously in the case of labour). It is thus substantially different from the Government's OBR model, and similar models, which are based on forecasting the trend in the UK economy's potential output and the economy's path back to that trend from any given starting point.
- The model is based on relationships and interrelationships econometrically estimated on past annual data.
- The model consists of 250 variables with data from 1950 to the present, 80 econometric equations and 145 identities
- The model is based on the post-Keynesian approach of Wynne Godley described in Monetary Economics by Godley and Lavoie 2007:
    - 4 sector approach: households, companies, government and foreign
    - Stock-flow consistent with tendency for ratios of assets to incomes not to diverge too far from long-term averages
    - Consumer spending depends on borrowing as well as income, assets and liabilities
    - Mark-up pricing (i.e. consumer prices rise with wage and other costs of production)
    - Wages determined as attempts to gain a traditional share of value-added but constrained by changes in the employment rate.
- The forecasts generated by the model are conditional on a number of exogenous variables chiefly reflecting government fiscal policy and economic conditions outside the UK. Key exogenous variables are
    - World trade (weighted by UK markets)
    - Government fiscal policy plans (tax rates and nominal spending plans)
    - Short-term interest rate (used as a policy variable to target consumer price inflation)
    - Interest rates in USA
    - Global price of oil and other raw materials
- Of particular relevance to future employment space requirements is how the forecast model addresses the labour market and sectoral employment. Unlike the OBR (which uses assumptions) UKMOD uses an econometric equation to forecast the number of people employed in the market sector. The equation has a long-term relationship between employment in the market sector and GDP, the capital-labour ratio, real average wages in the market sector, the level of house building and interest rates. There is also a term for the real value of company shares. This equation has some unconventional features, including a strong long-term influence from interest rates. Market sector employment has a substantial impact on the over-all macro-economic forecast and is sensitive to precise specification. The equation includes terms for labour demand (GDP) and supply (real wage).

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2 http://www.cbr.cam.ac.uk/fileadmin/user_upload/centre-for-business-research/downloads/working-papers/wp472.pdf

- Other long-term influences in the equation are the capital-labour ratio and the interest rate. The capital-labour ratio has a negative coefficient indicating that when capital replaces labour, employment will be lower for any given level of GDP. The inclusion of an interest rate term reflects the repayment cost of existing debt. When this is high post-interest profits are reduced and pressure to cut costs, including labour, is increased. This is an important factor in the unexpectedly high level of job creation during the period of unprecedentedly low interest rates since 2008.
- The LFS measure of the number of people unemployed and available for work is also forecast using an equation. In this equation the long-term influences on the number of unemployed people are: GDP, the number of people employed, the size of the working-age population and the number of people aged over 64 in employment. The latter are likely to displace more people of working age into unemployment for any given level of jobs. The number of new firms formed each year also appears to have a direct impact on unemployment, over and above its impact on jobs. The number of over-64s in employment is forecast as a trend. This is predicted to increase from around 1 million to 2 million over ten years. International migration of working-age people into the UK has short-term influences on unemployment through its impact on the working-age population. In the long term the rise in unemployment is offset by higher employment induced via lower wages caused by the higher migration.

Appendix 2: Use Class by Sector

Sub category	Sub sector	Density (Sq metres)	Midpoint	Agriculture	Mining and quarrying	Manufacturing	Utilities	Water supply & waste	Construction	Retail	Transportation	Accommodation	Information & Comm's	Financial activities	Real estate	Professional & scientific	Administration services	Public Admin' & defence	Education	Health & social work	Arts and entertainment	Other services
Retail	High Street	15-20	17.5	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Foodstore	15-20	17.5	0%	0%	0%	0%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Retail Warehouse	90	90	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Finance and professional services	16	16	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	70%	0%	8%	0%	0%	0%	0%	0%	0%
	Restaurants & Cafes	15-20	17.5	0%	0%	0%	0%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
General Offices	Corporate	13	13	0%	0%	0%	0%	0%	0%	0%	14%	0%	7%	0%	30%	0%	16%	0%	30%	30%	14%	15%
	Prof services	12	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	70%	38%	16%	0%	0%	0%	0%	0%
	Public sector	12	12	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	8%	100%	70%	70%	0%	0%	0%
	TMT (Tech, media & telecoms)	11	11	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	8%	0%	0%	0%	0%	0%
	Finance and insurance	10	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	30%	0%	0%	32%	0%	0%	0%	0%	0%
	Call centres	8	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	R&D Space	40-60	50	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%
	Light Industrial	47	47	50%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%
	Industrial and manufacturing	36	36	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage and distribution	National distribution centre	95	95	0%	0%	0%	0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Regional distribution centre	77	77	0%	0%	0%	0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Final mile distribution centre	70	70	0%	0%	0%	0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Small Business Workspace	Incubator	30-60	45	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	8%	4%	0%	0%	0%	7%	8%
	Maker spaces	15-40	27.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	8%	4%	0%	0%	0%	7%	8%
	Studio	20-40	30	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	4%	0%	0%	0%	14%	15%
	Co-working	10-15	12.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	4%	0%	0%	0%	14%	15%
	Managed workspace	12-47	29.5	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	4%	0%	0%	0%	7%	8%
Data centres	Wholesale	200-950	575	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Wholesale dark site	440-1400	920	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Co-location facility	180-540	360	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hotels	Limited service/budget	1 per 5 beds	50	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Mid-scale	1 per 3 beds	50	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Upscale	1 per 2 beds	50	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Luxury	1 per 1 bed	50	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fitness centres	Budget	100	100	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Mid Market	65	65	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Family	65	65	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	8%
	Cinema	200	200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	8%
	Visitor and cultural attractions	30-300	165	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	8%
	Amusement and entertainment centres	70	70	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	8%
				100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%