

# Estimating the economic impact of Leeds City Council Capital Expenditure

Commissioned by the Regional Economic Intelligence Unit and  
Funded by Leeds City Region.

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## Appendix A: About us

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Date: March 2012

## Key points

- REIU commissioned Experian to assess the potential economic impact of Leeds City Council prospective capital expenditure over the next five years. The research is split into two phases. Phase 1 comprises this report and analysis of the potential economic impact of capital expenditure projects. Phase 2 provides an excel tool that will allow REIU and partners to generate their own job estimates related to capital expenditure.
- The broad approach is to estimate the number of direct jobs that will be created by capital expenditure projects that have been allocated across 7 construction sectors and 30 industry sectors. The direct jobs can then be entered into the Regional Econometric Model to estimate the wider economic impacts of the capital expenditure programme through multiplier effects.
- A key part of the work is to attempt to estimate the proportion of capital expenditure and hence direct jobs that will stay within Leeds (and Leeds City Region (LCR)). This has been achieved by using information on purchases by industry from the REM. The excel tool will allow users to alter these assumptions based on relevant information they may have on the project, such as the nature of work and the likely supplier for example.
- For construction projects, capital expenditure the capital expenditure amounts for Leeds (and LCR) have been converted to direct jobs using labour coefficients for each construction sector. Labour coefficients state the amount of labour required measured in full-time equivalents that are required to build £1mn output. For non-construction projects, capital expenditure amounts in Leeds (and LCR) have been converted to direct jobs by estimating the relationship between capital expenditure and demand from other industry sectors.
- Once accounting for inflation, it is estimated that Leeds City Council capital expenditure will be around £501mn over the next five years, supporting 2,221 direct jobs in Leeds and 3,158 direct jobs in Leeds City Region.
- The bulk of capital expenditure projects are construction projects and as a result 85% of associated direct jobs are in the construction sector. The construction projects that support the largest number of jobs are not necessarily the largest projects, since different types of work (particularly repair and maintenance work) are more labour intensive than others (such as infrastructure for example).
- It is worth noting that whilst expenditure on repair and maintenance projects will tend to create more jobs in the local economy it is unlikely to generate the scale of wider economic benefit that could be associated with an infrastructure project, such as a major road development for example.
- The REM was used to estimate the economic impact of the direct jobs associated with Leeds City Council's capital expenditure. The direct jobs were entered in to the REM by industry sector for each year.
- Overall, the capital expenditure is estimated to create an additional 695 jobs in Leeds between 2011/12 and 2015. Therefore in total, 2,916 jobs are attributable to Leeds City Council capital expenditure in Leeds over the 2011/12 – 2015 period. The REM estimates that the total jobs will generate over £110mn for the Leeds economy over the 2011/12 – 2015 period – equivalent to around 1% of Leeds total GVA.
- Similar analysis for Leeds City Region suggests that the capital expenditure will create an additional 1,300 jobs through multiplier effects in the Leeds City Region. In total therefore, it is estimated that Leeds City Council capital expenditure over the next 5 years will support almost 4,500 jobs in the economy and generate £172mn GVA in the City Region.

# 1 Introduction

This report was commissioned by the Regional Economic Intelligence Unit (REIU) at Leeds City Council with funding support from Leeds City Region. The report details work undertaken by Experian to assess the potential economic impact of Leeds City Council's potential capital expenditure over the next 5 years. The approach attempts to allocate expenditure to different industry sectors to produce job estimates that are then fed into the Regional Econometric Model (REM) to estimate the multiplier effects resulting from the jobs created by capital expenditure spend within Leeds. The project has been split into two phases.

Phase 1 comprises this short report and an assessment of economic impacts contained herein. Phase 2 uses the methodology developed as part of Phase 1 to provide a desktop tool that will enable Leeds City Council and partners to produce their own job estimates based on capital expenditure values which can then be fed into the REM to assess wider economic impacts.

## 2 Approach

### 2.1 Overview

Broadly the approach is to estimate the direct jobs that would be generated within Leeds as a result of capital expenditure spend on an annual basis. By estimating the direct jobs by industry, the jobs can be entered into the REM to estimate the multiplier effects associated with the capital expenditure spend. The REM estimates the impact of direct jobs on the Leeds economy by considering how additional jobs will impact on the supply chain through increased activity and wages.

Leeds City Council provided Experian with a list of committed and uncommitted capital expenditure projects with a total value over £1 million on an annual basis for 2011-12 to 2015 onwards. Brief details for each project were also provided, including the project name, department and category of expenditure. These details were used as a basis to allocate each project to either a construction activity or an industry sector. For construction activity, projects were allocated across 7 construction sectors:

- New Housing
- Infrastructure
- Public Non-housing
- Private Industrial
- Private Commercial
- Housing R+M
- Non Housing R+M

For non-construction activity, projects were allocated to the 30 industry sectors that are covered by the REM. For the purposes of estimating direct jobs, a different approach was adopted for construction and non-construction as explained in later sub-sections of this approach.

## 2.2 Estimating the proportion of capital expenditure that is captured in the local economy

An important part of the REM is the relationships between the industries within the region and the extent to which spending by each industry is split between regional suppliers and suppliers outside the region. These relationships are also estimated for each district in Yorkshire and Humber, including Leeds. As a general rule of thumb, the larger the economy, the more able it will be to source inputs locally. This approach also factors in imports to the UK from overseas. The focus of the study is to provide estimates for Leeds, however limited analysis has also been undertaken for Leeds City Region.

The proportion of expenditure that is captured within Leeds by relevant sectors (those to which projects have been allocated) in the REM is shown below:

**Figure 1: Proportion of purchases from within Leeds for identified industry sectors**

Industry	Proportion of purchases
Construction	26%
Communications	12%
Other (mainly Public) Services	21%
Public Admin. & Defence	17%
Health	18%
Retailing	21%
Transport Equipment	17%
Other F&Bs	37%
Machinery & Equipment	18%

The approach used in this study has been to apply the proportions by industry shown in the table above to the capital expenditure values for each project to create an area adjusted capital expenditure which represents the amount of the expenditure which will remain within the local economy. There is reason to believe that each of the construction sectors should be treated differently since the nature of the work varies greatly and more of the expenditure will be leaked or retained within the area accordingly. For example, large scale road projects are likely to be awarded to contractors that supply their own skilled labour and very little of the direct or indirect effects of the expenditure will remain within the area where the activity is taking place (unless the contractor is based in the local economy), whilst repair and maintenance work is generally more likely to be provided by local suppliers (although this is not always the case as larger contractors often win contracts to provide these services and may or may not subsequently sub-contract the work to local businesses). As such, rules of thumb for the proportion of purchases from within the local area according to construction sector have been estimated as follows:

**Figure 2: Rules of thumb for adjusting construction purchases**

Sector	Low	Medium	High
New Housing	10%	20%	30%
Infrastructure	5%	10%	15%
Public Non-housing	10%	20%	30%
Private Industrial	10%	20%	30%
Private Commercial	10%	20%	30%
Housing R+M	20%	35%	50%

The rules of thumb can be applied to the value of each project based on knowledge of the nature of the project and, if known, the supplier. For example, 'low' would be applied when little of the construction expenditure is expected to be captured locally, whilst 'high' would be applied if more of the employment generated from the construction activity is likely to be locally sourced.

It was not possible for Experian to apply these rules of thumb to each construction project as the information provided for each project was limited. It was therefore deemed appropriate to use the purchase share estimates from the REM consistently across all construction and non-construction projects. Since there are a mix of projects across construction sectors, using the 26% proportion from the REM for construction is reasonable and averages out the uncertainty associated with each project. However the 'rules of thumb' will be built into the Excel tool for Leeds City Council and partners to use at their discretion.

## 2.3 Construction direct jobs

Experian runs the ConstructionSkills Network employment forecasting model on behalf of ConstructionSkills. The ConstructionSkills model includes labour coefficients which provide estimates of the number of full-time equivalents that are required to deliver £1m of output for each of the construction sectors listed above. The labour coefficients are estimated in 2005 prices.

It is not clear whether the capital expenditure amounts provided are in current or constant prices (which take account of inflation) – however it is assumed that they are in current prices and deflated to 2005 prices accordingly.

The next step is to apply the labour coefficients to the area adjusted capital expenditure value for each of the construction projects to derive estimates of the number of direct jobs that will be created by the project.

## 2.4 Non-construction direct jobs

For capital expenditure outside of the construction sectors, the approach is based on identifying the relationship between expenditure in the identified sector and sectors that supply that sector. The rationale here is that capital expenditure in the health sector for example, will generally create jobs in sectors that supply to the health sector rather than in the sector directly. The relationship between capital expenditure by sector and the supply chain has been taken from the UK supply-use tables<sup>1</sup>. By way of example, the supply-use table provides evidence that for every £1mn invested in the health sector, 61% is spent on electrical and optical equipment and 18% is spent on business services. Because construction activity has been identified separately, the construction effects in this analysis have been set to zero.

Once deflated to constant prices, the capital expenditure by project for non-construction activity is split across industry sectors based on the supply chain identified above. Productivity estimates by sector have been used to convert expenditure amounts by sector to FTE estimates.

## 2.5 Economic Impacts

The direct job estimates for each project were aggregated to sector totals by year for the period 2011/12 to 2015 onwards. The direct jobs were then entered into the REM in the appropriate industries in Leeds. The model was run using the CBI adjusted leakage ratios and without displacement.

Similar analysis was also undertaken for Leeds City Region.

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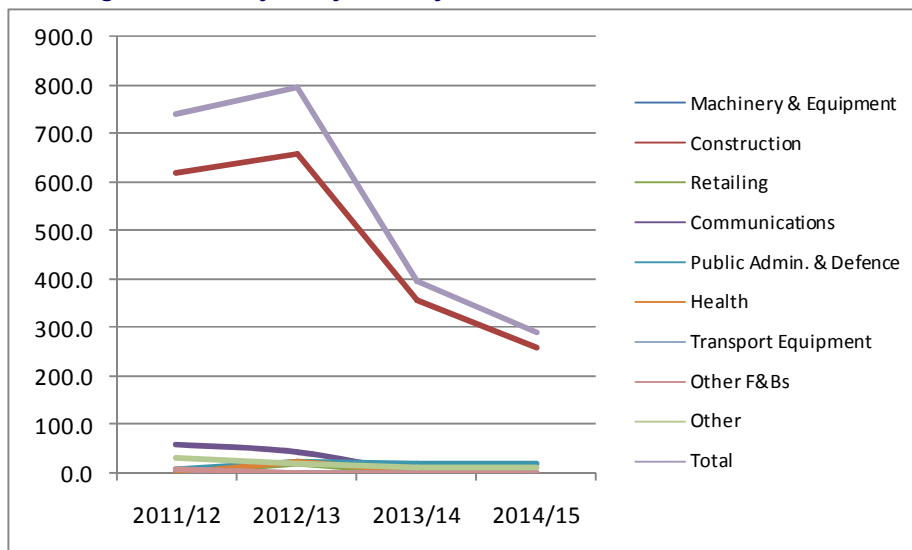
<sup>1</sup> ONS Supply Use Table 6, Capital Expenditure by Industry

# 3 Results

## 3.1 Direct jobs

It is estimated that Leeds City Council's expenditure of £501mn over the next 5 years will support 2,221 direct FTE jobs within the Leeds economy and 3,158 direct FTE jobs in Leeds City Region. The direct jobs supported by committed and uncommitted expenditure are split evenly, with 49.7% related to committed and 50.3% uncommitted expenditure. As shown in figure 3, the number of direct jobs peaks in 2012/13, with 794 jobs after which the number of jobs declines year on year.

**Figure 3: Direct jobs by industry sector and total**



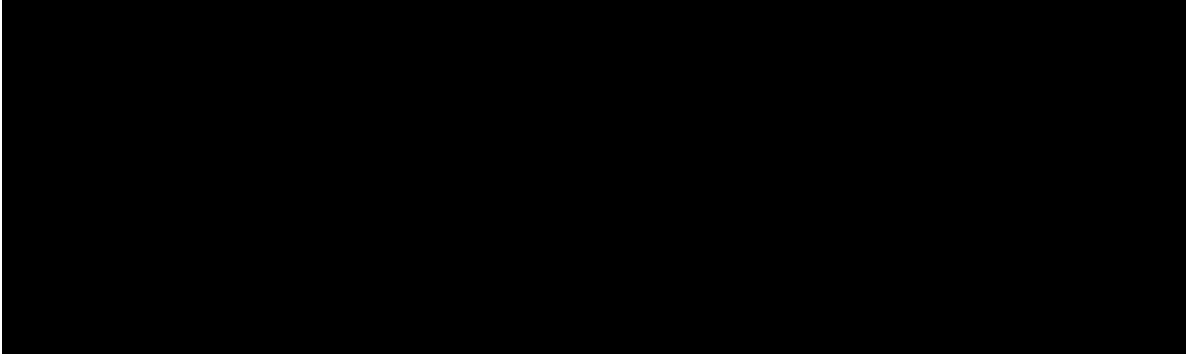
The direct jobs are mainly concentrated in the construction sector –85% of total direct jobs over the period are in the construction sector (the largest 24 projects ranked according to number of direct jobs are construction projects). The communications sector accounts for a further 5% of all direct jobs - mainly associated with IT expenditure. Figure 4 shows the split of direct jobs by industry sector.

**Figure 4: Direct jobs by industry sector and total**

Industry	2011/12	2012/13	2013/14	2014/15	2015 onwards	Total	% of total
Construction	620	658	356	258	1	1893	85.25%
Communications	58	45	4	0	0	107	4.80%
Other	33	21	13	12	0	78	3.53%
Public Admin. & Defence	7	26	19	19	0	70	3.14%
Health	3	26	3	2	0	35	1.56%
Retailing	0	19	0	0	0	19	0.85%
Transport Equipment	9	0	0	0	0	10	0.43%
Other F&Bs	9	0	0	0	0	9	0.41%
Machinery & Equipment	1	0	0	0	0	1	0.03%
<b>Total</b>	<b>739</b>	<b>794</b>	<b>395</b>	<b>291</b>	<b>1</b>	<b>2221</b>	

Figure 5 below presents a summary of the top 10 capital expenditure projects ranked according to the number of direct jobs supported in Leeds. The top 10 projects account for 30% of total expenditure by Leeds City Council and are estimated to create a total of 679 direct jobs in Leeds – equivalent to 31% of all direct jobs. However, the top 10 projects are not necessarily the largest in expenditure terms. Since repair and maintenance work is more labour intensive than other construction activity, for every £1mn spent on R&M more jobs will be typically created than for other types of construction activity. It is worth noting that whilst expenditure on repair and maintenance projects will tend to create more jobs in the local economy it is unlikely to generate the scale of wider economic benefit that could be associated with an infrastructure project, such as a major road development for example.

**Figure 5: Top 10 projects ranked by direct jobs**



### **3.2 Total economic impact**

The REM was used to estimate the economic impact of the direct jobs associated with Leeds City Council's capital expenditure. The direct jobs were entered in to the REM by industry sector for each year. Overall, the capital expenditure is estimated to create an additional 695 jobs in Leeds between 2011/12 and 2015. Therefore in total, 2,916 jobs are attributable to Leeds City Council capital expenditure in Leeds over the 2011/12 – 2015 period. The REM estimates that the total jobs will generate over £110mn for the Leeds economy over the 2011/12 – 2015 period – equivalent to around 1% of Leeds total GVA. Similar analysis for Leeds City Region suggests that the capital expenditure will create an additional 1,300 jobs through multiplier effects in the Leeds City Region. In total therefore, it is estimated that Leeds City Council capital expenditure over the next 5 years will support almost 4,500 jobs in the economy and generate £172mn GVA in the City Region.

## **4 Next steps**

- The report will be shared with colleagues in City Development and other relevant departments within Leeds City Council and also with Leeds City Region.
- REIU will circulate the report for internal consultation and feedback.
- REIU will use the comments to shape the final spreadsheet tool and complement the Regional Econometric Model (REM)
- This new tool will help shape the Council's and Leeds City Region's investment prioritisation processes.
- The tool will be deployed to support the rest of the Yorkshire and Humber region's forward planning, monitoring and investment appraisal.
- REIU will integrate this new functionality into the regional procurement exercise LCC is leading for REM.



# 5

## Appendix A

### About us

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#### Who we are

##### 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.

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