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NORTH LANARKSHIRE ECONOMIC OUTLOOK

**A REPORT OF THE ECONOMIC OUTLOOK
AND A SCENARIO MODEL FOR THE
NORTH LANARKSHIRE ECONOMY**

AUGUST 2018

Oxford Economics

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1. INTRODUCTION

North Lanarkshire Council commissioned Oxford Economics to provide an updated Economic Outlook and Scenario report for the North Lanarkshire economy. This included assessing the implications for an alternative “rebalanced economy scenario”, under which the UK, Scotland and, at a lower level, North Lanarkshire, would invest and grow in alternative sectors.

This work builds upon our 2014 report, which provided an economic profile, forecasts, and a rebalanced economy scenario for North Lanarkshire. The scenario was based on an assumption that there would be investment in alternative sectors and thus a re-balancing of economies away from their most concentrated sectors. The new report is structured as follows:

In Chapter 2, we provide an analysis of the current status of the North Lanarkshire economy, using the latest data. This chapter covers population, migration, employment, unemployment, business births and deaths and GVA.

In Chapter 3, we provide a breakdown of the key political and economic shifts since our 2014 report, and explain how our forecasts have changed as a result.

Chapter 4 details our forecast for the economic outlook for North Lanarkshire up to 2038. It includes comparisons with the overall Scottish economy, and the Glasgow & the Clyde Valley city region. It identifies the key drivers of the forecast, as well as an overview of our assumptions in relation to Brexit.

Chapter 5 presents our alternative scenario for North Lanarkshire, and describes how the outlook for North Lanarkshire would change under alternative assumptions about key influences on the local economy. It includes the re-run of the rebalanced scenario from 2014, using our latest baseline forecasts as the input.

Finally, Chapter 6 brings together the key conclusions of our study.

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2. THE NORTH LANARKSHIRE ECONOMY

This chapter gives an overview of the demographic and economic structure of North Lanarkshire, focusing on population, the labour market, entrepreneurship and GVA (Gross Value Added)¹. Comparisons are drawn between North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region. The historic and recent economic performance of North Lanarkshire outlined in this chapter provides the basis of the forecast presented later in the report.

2.1 POPULATION AND MIGRATION

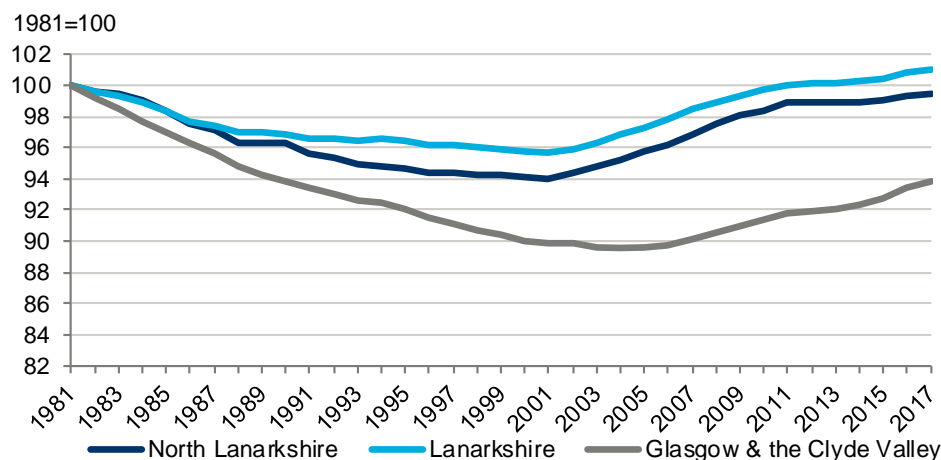
2.1.1 Population

In 2017, the population in North Lanarkshire local authority was 339,960, increasing by 0.2%, at a slower pace than 2016 but strong in comparison to the contraction and stagnant growth in the previous three years. Growth in 2017 was in line with Lanarkshire (0.2%) but lagging behind Scotland (0.4%). In line with the wider trend throughout Scotland, population growth in the local authority slowed in 2017 following a 5-year high in 2016. In 2017, North Lanarkshire is yet to return to its peak level of more than 340,000 in 1981, which has been followed by almost two decades of population decline, although we expect that this figure will be surpassed in 2018.

Fig. 1 shows that the trend of population decline up to 2001 was consistent throughout Lanarkshire and the wider Glasgow & the Clyde Valley city region. However, as population growth in North Lanarkshire showed a turnaround from 2002 onwards, Glasgow & the Clyde Valley city region has been slower to return to previous levels, and in 2017 it recorded a population of over 119,000 less than its 1981 level. Of all the local authorities in the Glasgow & the Clyde Valley city region, only East Renfrewshire and South Lanarkshire have seen a net increase in total population since 1981.

¹ Gross Value Added is the value generated by any unit engaged in the production of goods and services.

Fig. 1. Total population: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region, 1981–2017 (1981=100)

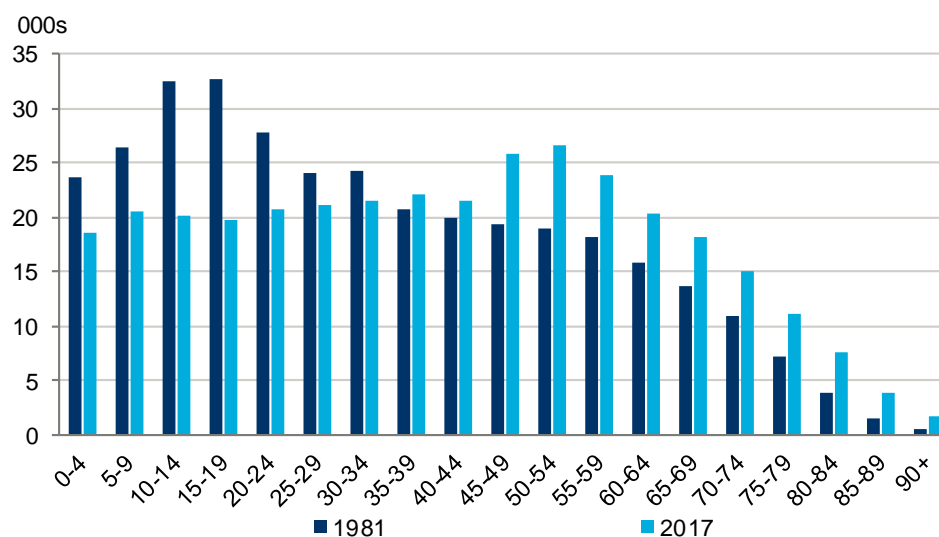


Source: National Records of Scotland, Oxford Economics

While there has been little change in the total levels of population since 1981, the composition of population is markedly different. In 1981, 11% of the population were aged 65 and over; in 2017, thanks to increasing life expectancy and a trend towards an ageing population, this age group now accounts for 17% of the total population. Due to a slowdown in the number of births, the 0-14 age group accounts for just 17% of the population in 2017, seven percentage points lower than in 1981.

Although the percentage of the total population in the working age bands is unchanged from its 1981 level, the higher concentration in age bands between ages 40 and 64 shows that the working population has a higher average age compared to 1981. Therefore, over the next few decades, the working-age population will start to decline unless migration picks up to replace those who will leave the workforce due to retirement.

Fig. 2. Population by age band: North Lanarkshire, 1981 & 2017 (000s)



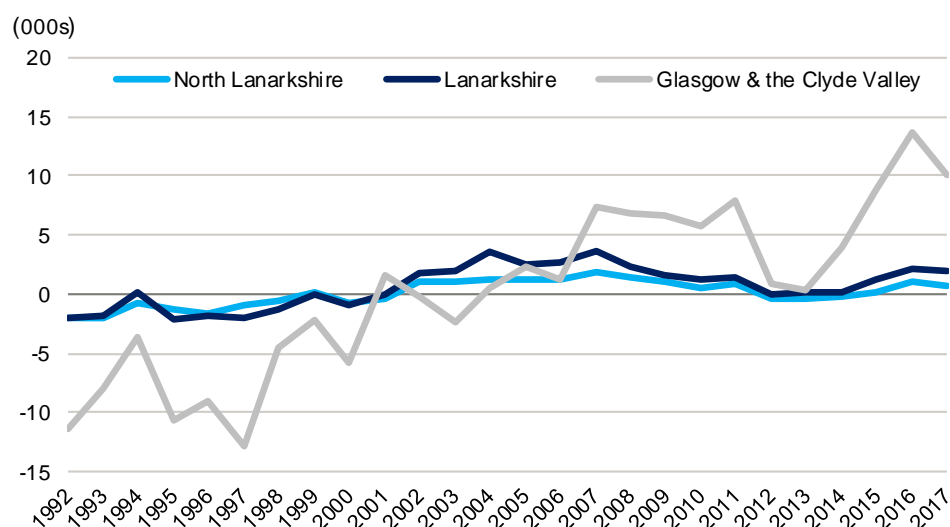
Source: National Records of Scotland, Oxford Economics

2.1.2 Migration

North Lanarkshire's population turnaround in 2002 was largely underpinned by a change in migration. Fig. 3 shows a turnaround from net outward migration to net inward migration from 2002. Glasgow & the Clyde Valley city region followed soon after, experiencing continued net in-migration from 2004 onwards. A sharp slowdown of net inward migration was seen in 2012.

In North Lanarkshire, alongside some other local authorities, there was slightly more people leaving the area than entering over this time period, leading to a return to net outward migration. The slowdown reflected the wider trend throughout Scotland, partially attributed to the fact that international inward migration slowed from 27,300 in 2011 to 9,700 in 2012, and reached a low of 2,100 in 2013. International migration from 2014 picked up pace again in Scotland, and Glasgow & the Clyde Valley city region was boosted by strong inward international migration into Glasgow city. However, North Lanarkshire's net migration has not experienced a similar pace of growth, remaining at a relatively low level compared to the Glasgow & the Clyde Valley city region.

Fig. 3. Net migration: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley region, 1992 – 2017 (000s)



Source: National Records of Scotland, Oxford Economics

2.2 LABOUR MARKET

2.2.1 Total employment

Total employment in North Lanarkshire was 144,300 in 2017, almost returning to its peak employment levels of 145,400 in 2014. Between 2016 and 2017, the total number of jobs increased by almost 3,000, equivalent to a growth rate of 2.1% and reversing the decline seen over the past few years. While this growth is strong in comparison to recent years in North Lanarkshire, the local authority still lags behind growth rates in Glasgow & the Clyde Valley city region (2.3%) and Scotland (2.4%). The sectors with the largest contributions to jobs growth in 2017 were the transportation & storage, accommodation & food services and information & communication sectors. The strength of these

sectors more than offset the declining employment in health & social work and professional, scientific and technical services sectors.

2.2.2 Industrial structure of employment

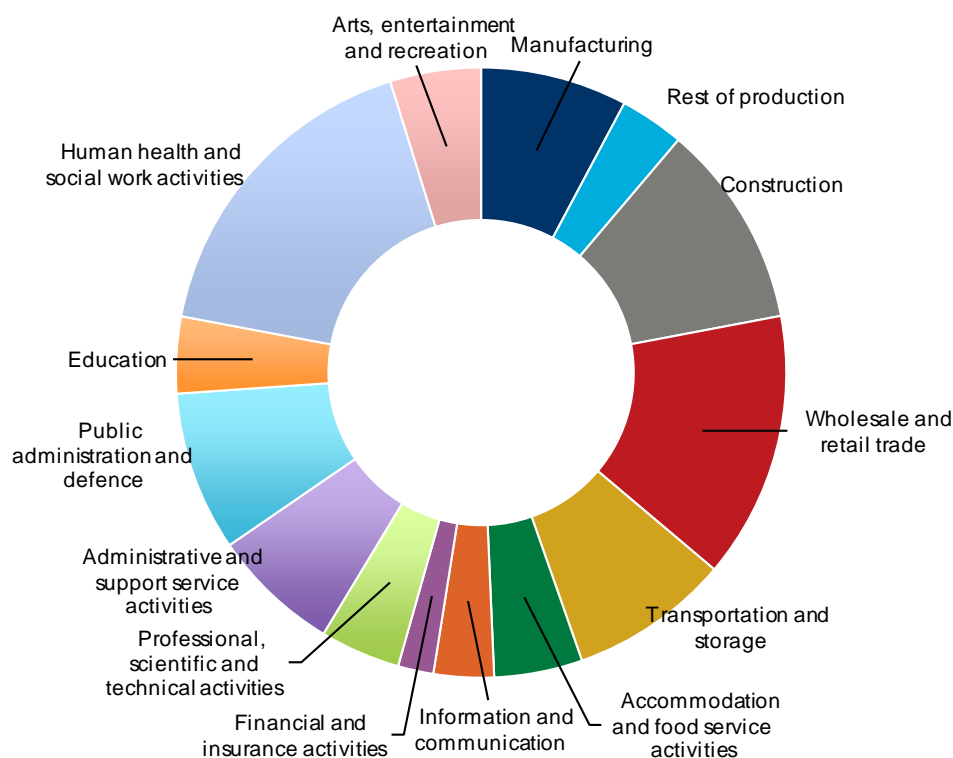
Fig. 4 (overleaf) shows that despite a recent decline in total employment in the health & social work sector in North Lanarkshire, it still dominates as the sector with the largest number of jobs, accounting for 17% of total employment in the North Lanarkshire economy in 2017.

The sector's dominance highlights healthcare demands in the area, potentially underpinned by the ageing population. The wholesale & retail trade sector follows closely behind, accounting for 14% of total employment in North Lanarkshire and retaining its second-place position despite the sector experiencing average job losses of 0.4% each year between 2012 and 2017. Construction remains an important sector in North Lanarkshire, accounting for 11% of total jobs in comparison to 7% of jobs in Glasgow & the Clyde Valley city region and 6% in Scotland.

The manufacturing sector has declined over time, from accounting for 22% of total employment in 1991 to just 8% in 2017, and the decline is set to continue, following the wider trend throughout Scotland and the UK as productivity gains and the adoption of new technologies lowers the demand for employees in manufacturing. Despite this decline, manufacturing still has a relatively higher concentration in employment compared to Glasgow & the Clyde Valley city region (6% of total) and Scotland (7%).

Fig. 4. Breakdown of total employment by sector: North Lanarkshire, 2017

(% of total)



Source: Oxford Economics

2.2.3 Composition of employment

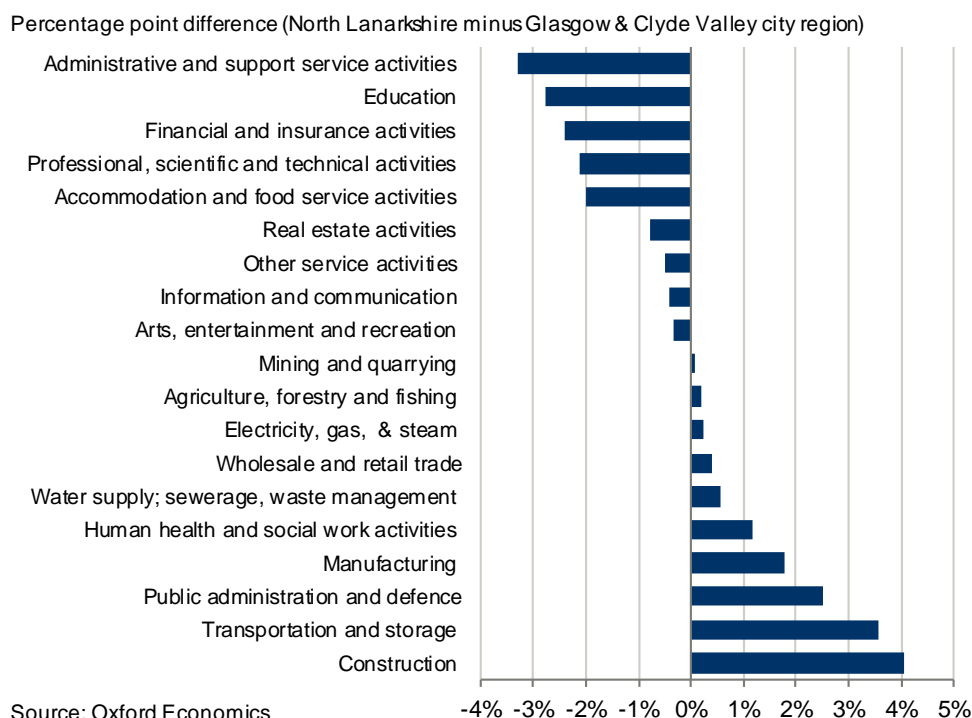
Fig. 5 (overleaf) shows a comparison between the employment structure in North Lanarkshire and Glasgow & the Clyde Valley city region. Construction, which is the third top sector in terms of employment for North Lanarkshire, shows the largest difference in employment concentration at 4.1 percentage points higher than Glasgow & the Clyde Valley city region. Almost 11% of total jobs are in construction, compared to 7% in Glasgow & the Clyde Valley city region and 6% in Scotland.

The construction sector has picked up pace again in North Lanarkshire following a contraction in employment in 2014 and 2015, and is expected to remain a strong performer, in part boosted by the Glasgow City Region City Deal, and The Council's Ambition - Economic Regeneration Delivery Plan. The two plans are interconnected, and focus on regeneration of housing and town centres, business and industry, and infrastructure development.

The higher value-added sectors of professional services, financial services and information & communication services account a relatively smaller proportion of employment in North Lanarkshire. Combined, these three sectors account for 9% of total employment in North Lanarkshire, compared to 14% in Glasgow & the Clyde Valley city region, and 13% in Scotland. Business services are more heavily concentrated in large cities and more urbanised areas, accounting for North Lanarkshire's lower concentration.

The lower concentration of employment in education in North Lanarkshire can be partially attributed to the clustering of the tertiary education sector around Glasgow city centre, with five of the six universities in the Glasgow & the Clyde Valley city region being located in Glasgow.

Fig. 5. Relative employment concentration: North Lanarkshire vs Glasgow & the Clyde Valley city region, 2017 (by sector)

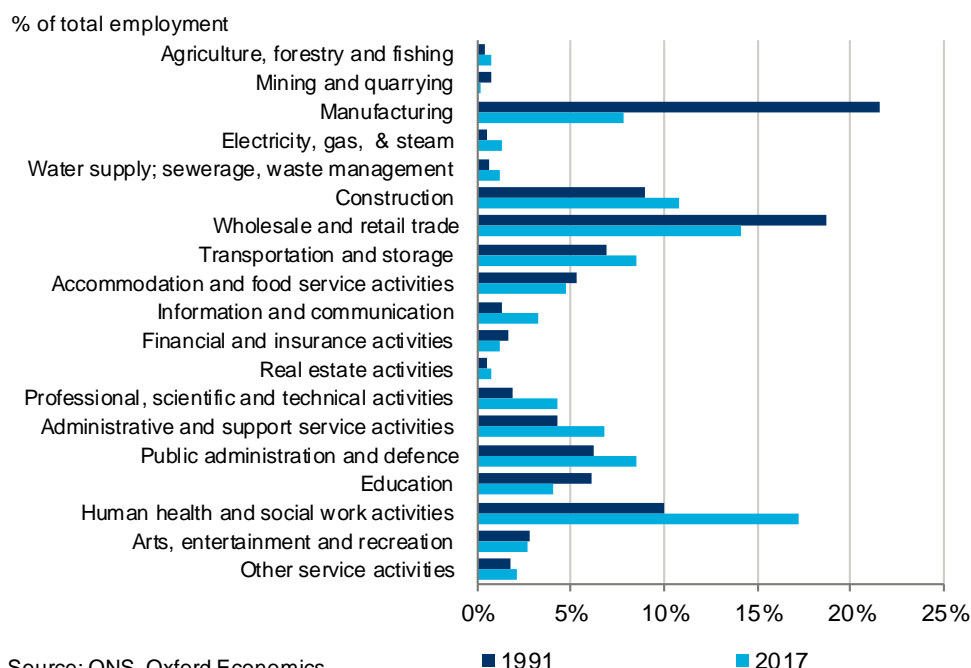


Between 1991 and 2017, there have been 27,900 net new jobs in North Lanarkshire. Alongside this rise in employment, there has also been a notable change in the sectoral composition of employment over this period. Fig. 6, overleaf, shows the change in the concentration of employment in each sector for both 1991 and 2017. The most significant change over this time period has been in manufacturing, which in 1991 was the leading sector in terms of employment and accounted for 22% of total jobs; by 2017 the sector accounted for only 8% of total jobs.

Employment in wholesale & retail trade has also seen a decline, both in the absolute number of jobs and as a percentage of total employment. The sector has not yet returned to its pre-financial crisis employment levels, and is currently under pressure from subdued consumer spending—in part due to Brexit and weak real-wage growth.

Human health & social work has overtaken manufacturing to be the largest employing sector, accounting for 17% of the workforce in 2017—up from 10% in 1991. The sector is forecast to retain its lead, with the recent Early Learning and Childcare policy helping to underpin employment in this sector during a period of fiscal austerity.

Fig. 6. Employment concentration: North Lanarkshire, 1991 vs 2017

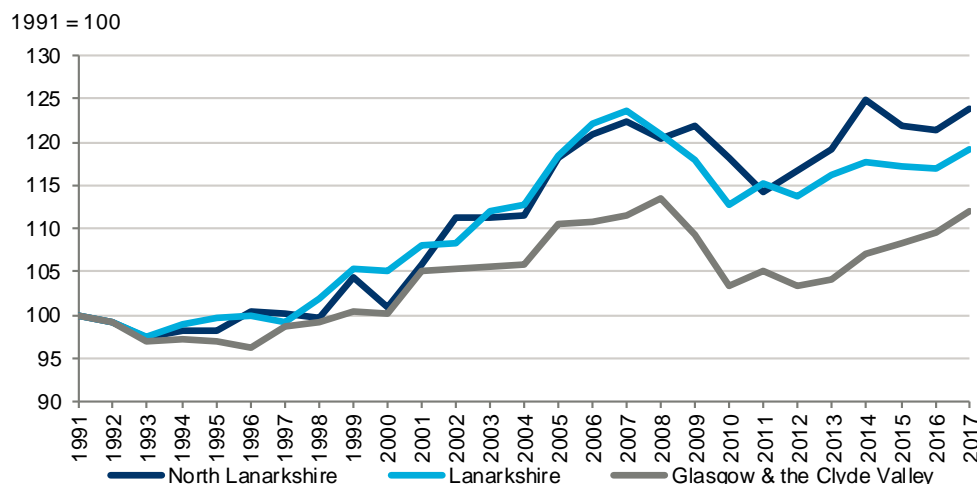


2.2.4 Trends in employment

Total employment in North Lanarkshire has roughly followed the same trends as the wider Lanarkshire and Glasgow & the Clyde Valley city regions, with all three areas growing relatively consistently between 1991 and 2007. Following the downturn in employment at the time of the financial crisis, recovery levels differ between the three areas. North Lanarkshire increased at a faster rate compared to the other regions between 2011 and 2014, boosted by strong gains in the human health & social work and transportation & storage sectors.

The local authority has seen a contraction in employment growth after peaking in 2014, with the decline largely attributed to job losses in the administrative & support services, human health & social work and wholesale & retail trade sectors. Despite the recent downturn in these sectors, North Lanarkshire has still enjoyed a relatively larger increase in total employment levels overall, rising 24% from its 1991 level, compared to 19% in Lanarkshire and just 12% in Glasgow & the Clyde Valley city region, which has been held back by weaker performances in Inverclyde and West Dunbartonshire acting as a drag on overall growth for the region.

Fig. 7. Total employment: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region, 1991-2017 (1991=100)



Source: Oxford Economics

Fig. 7 highlights the recent strength of North Lanarkshire in comparison to both Lanarkshire and the Glasgow & the Clyde Valley city region. Between 1991 and 2017, from the local authorities within Glasgow and the Clyde Valley, only Glasgow city saw a larger absolute increase in jobs than North Lanarkshire, with these two local authorities rising by 62,000 jobs and 27,900 jobs respectively. However, Glasgow's employment growth over this period was lower as a result of its much larger size (16% vs 24% in North Lanarkshire).

Fig. 8. Change in employment: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region, 2012-2017

	North Lanarkshire		Lanarkshire		Glasgow / Clyde Valley	
	(000s)	(%)	(000s)	(%)	(000s)	(%)
Agriculture, forestry & fishing	0.1	10%	0.3	9%	0.5	9%
Mining & quarrying	-0.3	-62%	-0.7	-64%	-0.6	-54%
Manufacturing	-1.4	-11%	-3.4	-13%	-5.1	-8%
Electricity, gas, & steam	1.1	159%	1.8	38%	1.9	24%
Water supply; sewerage, waste management	0.6	54%	-0.1	-4%	-0.4	-6%
Construction	-0.4	-3%	2.8	10%	6.1	10%
Wholesale & retail trade	-0.4	-2%	1.0	3%	4.5	4%
Transportation & storage	2.6	27%	4.1	26%	6.4	16%
Accommodation & food service activities	1.0	17%	2.6	20%	14.1	29%
Information & communication	2.4	107%	2.9	66%	7.3	27%
Financial & insurance activities	-0.8	-31%	-1.3	-22%	0.6	2%
Real estate activities	0.0	-4%	0.1	5%	0.0	0%
Professional, scientific & technical	0.7	12%	1.4	12%	7.3	14%
Administrative & support service activities	-5.4	-36%	-3.8	-16%	-1.3	-1%
Public administration & defence	4.3	55%	5.1	36%	5.7	11%
Education	-0.4	-6%	0.3	2%	6.4	11%
Human health & social work activities	3.8	18%	-1.7	-4%	15.6	11%
Arts, entertainment & recreation	0.3	8%	0.5	7%	4.8	20%
Other service activities	0.7	27%	0.8	14%	0.1	1%
Total	8.4	6%	12.8	5%	73.8	8%

Source: ONS, Oxford Economics

Fig. 8 (on previous page) breaks down the changes in total employment between 2012 and 2017 by sector and region. In absolute terms, the administrative & support services sector experienced the largest loss in North Lanarkshire over this period and this trend continued in Lanarkshire, but in Glasgow & the Clyde Valley city region it was manufacturing which suffered the largest decline. The decline in North Lanarkshire was equivalent to over one third of jobs in the administrative and support services sector, and its concentration of total employment fell from 11% to 7%. The financial & insurance sector also experienced a contraction of one third of its jobs, and the manufacturing sector suffered a net loss of 1,400 jobs.

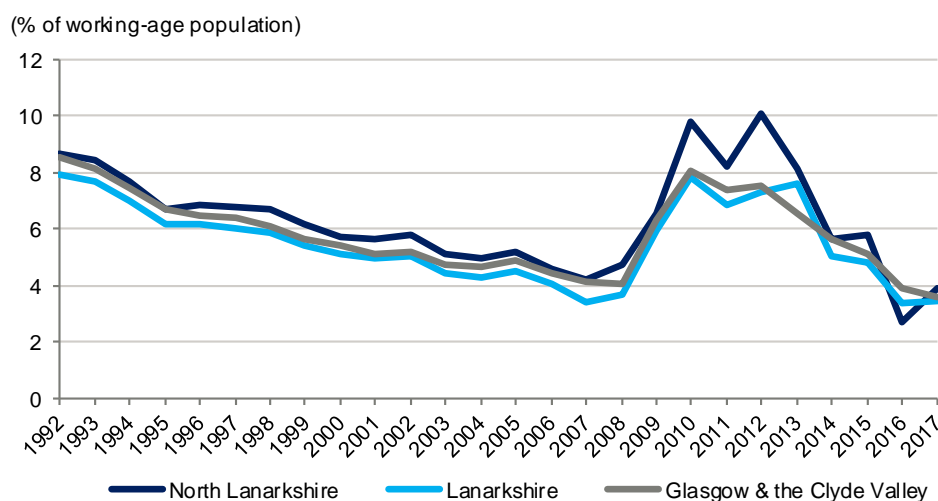
The wholesale and retail trade sector in North Lanarkshire also experienced a contraction in total employment between 2012 and 2017. The sector contracted by 400 jobs, in contrast to gains in Lanarkshire and Glasgow & the Clyde Valley city region.

On a positive note, the public sector enjoyed strong growth between 2012 and 2017, with public administration & defence and health & social work rising by 4,300 and 3,800 additional jobs respectively, equivalent to growth of 55% and 18% respectively. This growth in the public sector was only slightly offset by a loss of 400 jobs in the education sector.

2.2.5 Unemployment

In the period between 1992 and 2007, North Lanarkshire, Lanarkshire and Glasgow & the Clyde Valley city region followed the same trend of gradually falling unemployment rates, with North Lanarkshire's unemployment decreasing from 8.7% in 1992 to 4.2% in 2007. The effects of the financial crisis are made clear in Fig. 9, with unemployment rates rising to 9.8% in 2010. North Lanarkshire's unemployment rate was less steady in its recovery in comparison to Glasgow & the Clyde Valley city region, rising again to reach a peak of more than 10% in 2012, before easing sharply to reach a record low of just 2.7% in 2016—well below the Scottish average of 4.1%.

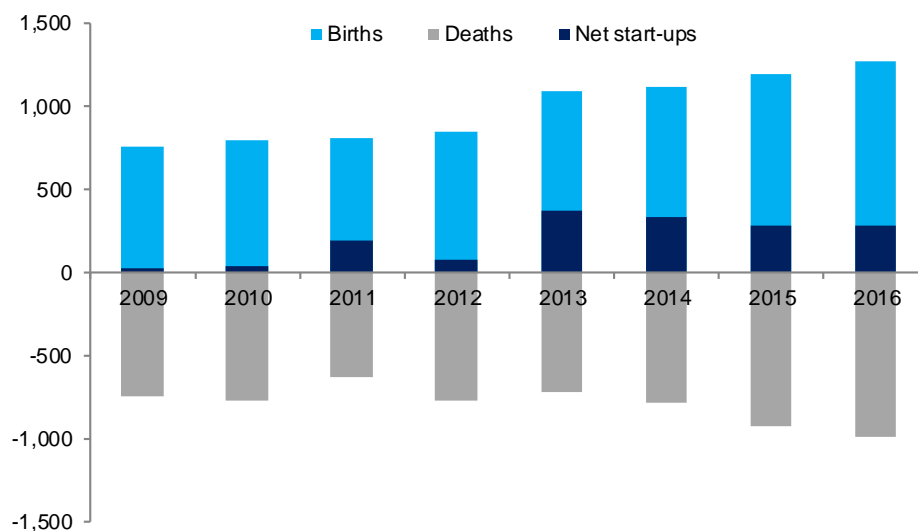
Fig. 9. Unemployment rate: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region, 1991-2017 (% of working-age population)



Source: ONS, Oxford Economics

However, this pace of decline in North Lanarkshire has not been maintained throughout 2017, with the unemployment rate rising again to 3.9%, overtaking Lanarkshire (3.4%) and Glasgow & the Clyde Valley city region (3.6%). The local authority also had a higher unemployment than the Scottish average (3.3%) in 2017, as Scotland's unemployment rate continued its decline from a high of 6.4% in 2010.

Fig. 10. Business births, deaths and net start-ups: North Lanarkshire, 2009-2016



Source: National Records of Scotland

Fig. 10 outlines the recovery of businesses in North Lanarkshire following the financial crisis, with business births rising on average by 7.6% per year between 2009 and 2016. This pace of average annual growth for business births outperforms Lanarkshire (6.3%), Glasgow & the Clyde Valley city region (6.8%), and Scotland (6.1%).

However, while business births continued in an upward trend, the number of business deaths in North Lanarkshire also increased, picking up pace from 2013 onwards in particular. The number of business deaths reached a peak of 990 in 2016, and is equivalent to an average increase of 4.2% per year from 2009. While the number of business deaths in North Lanarkshire is rising at a faster pace than in Lanarkshire (3.4%), it is faring better than Glasgow & the Clyde Valley city region and Scotland, which are experiencing the number of business deaths increasing on average by 4.6% and 4.8% per year respectively.

As a result of the increase in the number of business deaths offsetting the rise in births, net start-ups (which is business births minus business deaths) in North Lanarkshire has been in slowdown since peaking at 370 in 2013. Following this peak, net business start-ups totalled 335 in 2014, then 280 in both 2015 and 2016. This trend of weaker net start-ups since 2014 is seen more widely in Scotland and the UK as a whole.

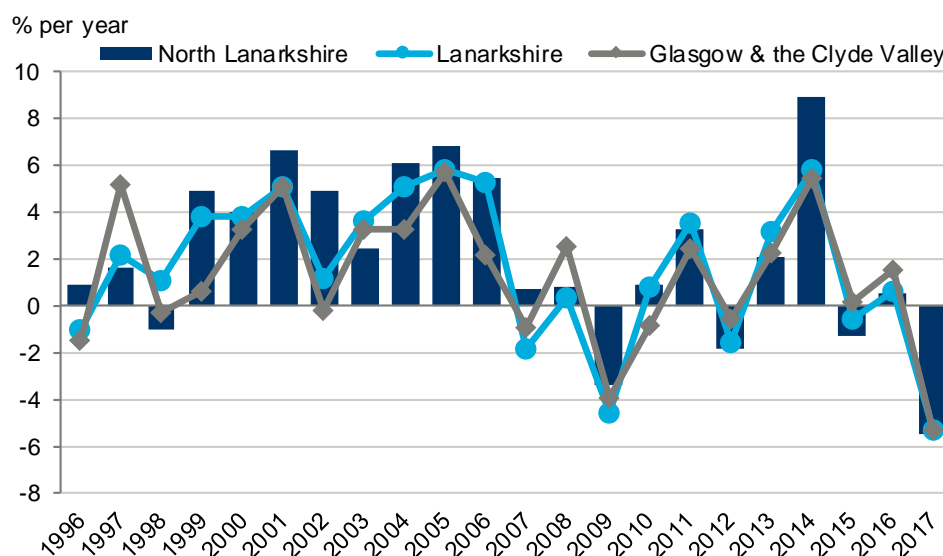
2.3 ECONOMIC GROWTH

2.3.1 Gross Value Added (GVA)

Fig. 11 shows that the rate of GVA growth in North Lanarkshire has been broadly in line with Lanarkshire and Glasgow & the Clyde Valley city region over the past 20 years. Between 1996 and 2006, North Lanarkshire's GVA growth averaged 4.1% per year, outpacing Glasgow & the Clyde Valley city region and Scotland, each growing an average of less than 2.8% per year over the ten year period.

GVA growth in North Lanarkshire has been relatively unsteady since 2008, although this aligns with the unsteady growth in the wider Glasgow & the Clyde Valley city region. 2014 saw the strongest growth of 8.9%, outpacing Glasgow & the Clyde Valley city region. Recent growth has been more muted, dragged down by declines in the financial & insurance and administrative & support services sectors.

Fig. 11. GVA: North Lanarkshire, Lanarkshire, and Glasgow & the Clyde Valley city region, 1996-2017



Source: Oxford Economics

3. UPDATE SINCE THE 2014 REPORT

Since Oxford Economics' 2014 Outlook Report on North Lanarkshire was published, there have been significant political and economic developments that may have a long-term impact on our modelling forecasts. In this chapter, we outline some of these - Brexit, migration and interest rates.

3.1 BREXIT

The UK voted to leave the European Union in June 2016, following a referendum in which the "leave" campaign won by a modest margin of 51.9 percent to 48.1 percent, on an overall turnout of 72 percent. The immediate aftermath of the decision included a change to the UK government's leadership, a 0.25bp cut to the interest rate, and a fall in the value of sterling.

Over the past two years, no agreement has been made regarding how the withdrawal process will take place, and how trade will operate after the split. An official date for the UK leaving the EU has been set as March 2019. The UK and the European Commission have agreed terms of a transition agreement, effective until the end of 2020, in order to smooth the departure process, and there are suggestions that this may be extended as a result of the lack of progress made so far. Key areas of the final withdrawal agreement remain unresolved, and the emergence of a "backstop solution" necessary for the border with Ireland suggests there is no straightforward solution to one of the most important issues.

As negotiations continue regarding the UK's exit from the EU, uncertainties pose a risk to our forecast over both the short and long term.

In the short term, there is a risk of low confidence negatively affecting consumer spending. Similarly, while corporate profitability currently remains firm, investment intentions are subdued and there is a risk that decisions may be postponed until the final Brexit outlook is clearer.

Though we expect that the UK and EU will formulate a withdrawal agreement, there is a high risk that parliament will reject it and that the ensuing political crisis will result in an extension of the Brexit timetable. Our analysis finds that the ultimate deal does not have one outcome with the highest probability, but instead we see similar chances of the two extremes the most likely: (i) Brexit in Name Only, and (ii) the UK and EU moving to trade under World Trade Organization (WTO) rules, with the latter proving more economically damaging.

3.2 MIGRATION

The decision to leave the EU has also impacted the outlook for migration into and out of the UK. As the rules regarding how the borders will operate have not yet been disclosed, it has been necessary to create forecasts based on assumptions. We assume that the UK will pursue a more-populist stance regarding migration, as a result of the strong arguments in favour of reducing immigration put forward by the leave campaign. If, instead, it were to opt for a more liberal policy, then there is the potential for a stronger outcome for both GDP and employment over the longer term.

As a result of the revision to our forecast to reflect the Brexit decision, net migration in Scotland is forecast to slow from an average of 17,100 from our 2014 report to 8,600 each year between 2018 and 2028. In North Lanarkshire, net migration is now forecast to be negative throughout the next decade, with more people leaving than entering the local authority.

3.3 INTEREST RATES

Our 2014 forecast anticipated a rise in the bank rate in 2016, amid positive signs of strengthening in the economy after the financial crisis. The bank rate had been continually lowered each quarter from July 2007 to 0.5% in Q2 2009, in an attempt to alleviate some of the strain felt on consumers throughout the crisis. We forecast that the interest rate would rise as the need for monetary stimulus lessened.

However, in the MPC meeting after the Brexit vote, it was decided to further lower the interest rate to 0.25 bp (alongside other monetary stimulus plans to boost the economy) after the Bank announced its most significant cut to its growth forecasts since it began making them in 1993. Since then, the interest rate has risen back to 0.75%. However, as consumer spending is still low, real wages are stagnating, and inflation remains above its 2% target, we see no reason to believe significant changes to the bank rate will occur in the short term.

4. ECONOMIC OUTLOOK

The performance of the wider UK economy and the current factors affecting its growth are described below, followed by an overview of the Scotland and North Lanarkshire economies.

4.1 UK ECONOMIC PERFORMANCE

The UK has seen growth pick-up in 2018 Q2, following a poor opening to the year as a result of temporary factors including adverse weather conditions and the collapse of Carillion. We forecast economic growth of 1.3% in 2018 and 1.4% in 2019 for the UK.

Key factors affecting the UK forecast:

- **Household spending power is still under pressure:** CPI inflation averaged 2.7% in 2017, its highest in five years, causing a sharp squeeze on household spending power. But with the impact of the 2016 sterling depreciation fading, inflation has begun to slow. And though recently higher oil prices are likely to mean that inflation remains sticky over the next few months, the lack of any core pressure means that inflation is likely to resume its descent over the latter part of this year and into 2019. We expect CPI inflation of 2.4% this year, slowing to 1.8% in 2019.

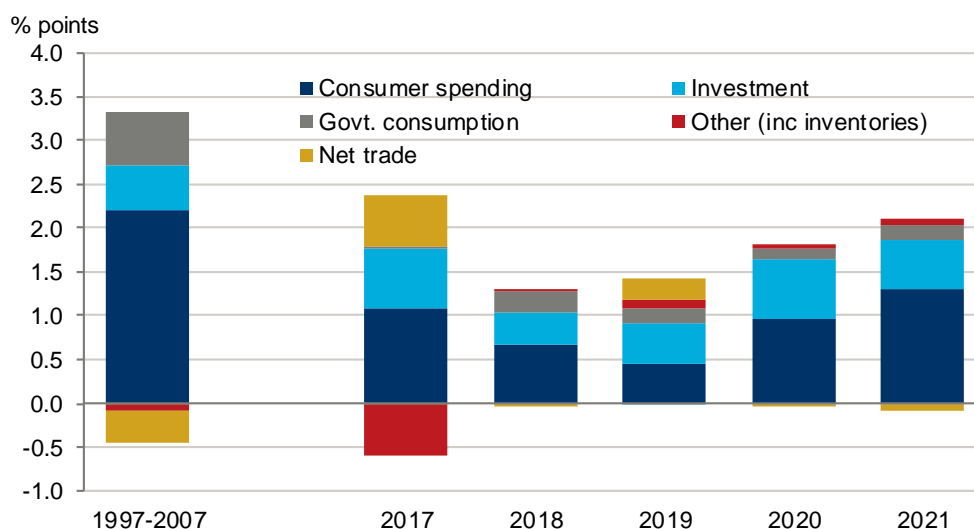
However, the strength of the recovery in household spending power will be constrained by the government's welfare reforms, higher interest rates and softer employment growth. And with the savings ratio already very low, we expect households to become more reticent about borrowing and to start to rebuild their balance sheets. We expect consumer spending growth to slow from 1.9% last year to 1.1% in 2018 and then an eight-year low of just 0.9% in 2019.

- **Brexit uncertainty continues to weigh on business investment:** in 2016-17, business investment grew just 0.7% a year, having risen by almost 5% a year in 2010-15. Corporate profitability remains firm but investment intentions are subdued, with Brexit-related uncertainty weighing. This will persist until the UK's future trading relationship with the EU becomes clearer. So we expect growth in business investment to remain relatively subdued, with capital spending rising by 1.1% in 2018 and 2.7% in 2019. Overall investment is set to grow by 1.3% this year, before rising to 3.3% in 2019.
- **Boost to net exports fades as sterling strengthens:** stronger global growth and a weak pound drove a marked pick-up in export growth and meant that net trade lifted GDP growth by 0.6% points in 2017. But this support is now likely to disappear as sterling continues to rally, eroding some of the post-referendum gains in competitiveness, and global growth cools, as the impact of more protectionist trade policy is seen.

- Tight fiscal stance:** the squeeze on welfare spending noted above, along with other cuts to current spending and tax rises, means that fiscal policy will exert a drag on growth over the next few years. Forecasts from the Office for Budget Responsibility imply that fiscal tightening will drag on GDP growth in each year between 2018/19 and 2022/23, with the peak impact of 0.4% points of GDP in 2018/19. The Prime Minister has announced a sizeable increase in funding for the NHS, but this looks set to be largely financed by tax rises to be announced in the budget this autumn.

Fig. 12 illustrates contributions to the UK's GDP growth, broken down by component. It shows that in the short term, this combination of slowing consumer spending, low investment due to Brexit uncertainty, and the strengthening of sterling eradicating the benefits of a weak pound for net trade, will contribute to the continuation in the slowdown of economic growth experienced by the UK since 2014. Total GDP is forecast to slow from 1.7% in 2017 to 1.3% in 2018, and 1.4% in 2019.

Fig. 12. Contributions to GDP growth: UK, 1997-2021



Source: Oxford Economics

In line with expectations, the Monetary Policy Committee (MPC) voted to raise the Bank Rate by 25bps at the August meeting. The justification of raising rates was that a tight labour market will drive up wages and inflation. But the data is yet to back this stance and we do not expect this situation to change materially in the near future. In addition, while the vote to raise the rate in August was unanimous, we do not see this as a hawkish signal for the future. We forecast that inflation will undershoot the official projections, backed by a surprise on the downside in June, and that the uncertainty around Brexit will continue to act as a drag on investment and spending decisions. Therefore, we think that further hikes will become increasingly difficult to justify and continue to expect a maximum of one rate hike in 2019.

Fig. 13. Interest rates: UK, 2004-2024

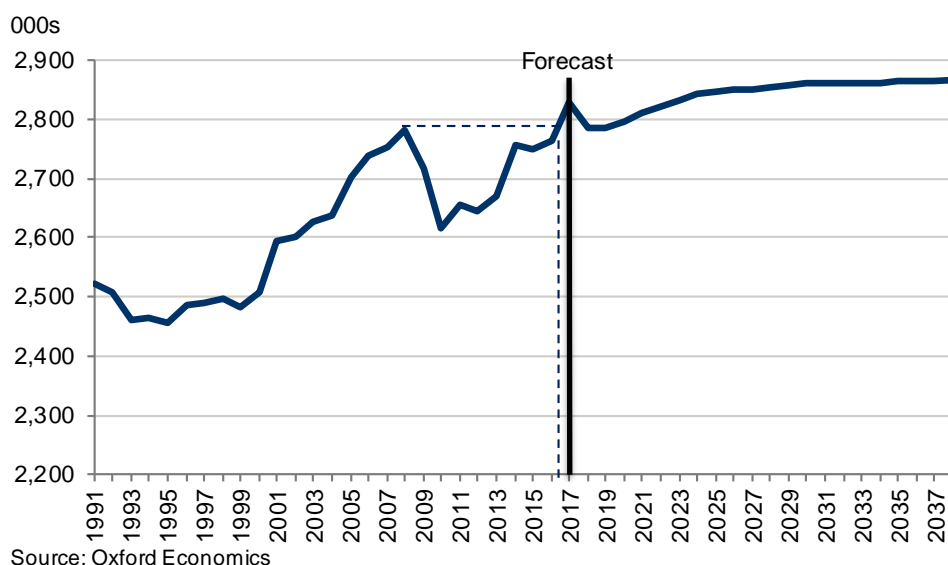


4.2 SCOTTISH OUTLOOK

4.2.1 Employment

Total employment in Scotland increased by 66,400 net new jobs in 2017, equivalent to a strong growth rate of 2.4%, and surpassing the pre-crisis peak of 2,782,000 seen in 2008. Growth in Scotland outperformed the UK average in 2017 (1.4%), and was outpaced only by the Midlands regions and Wales. Total employment is expected to experience a decline of 1.5% in 2018 and then return to a muted growth over the rest of the forecast period, of just 0.1% per year on average. By 2038, total employment is expected to surpass 2,866,000.

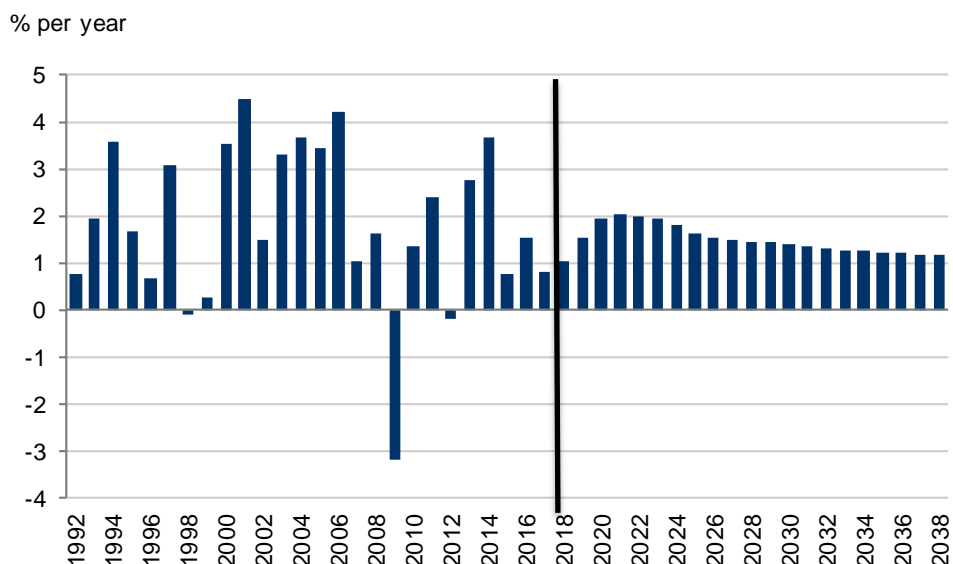
Fig. 14. Total employment: Scotland, 1991-2038 (000s)



4.2.2 Gross Value Added

Following a few years of volatile growth in Scotland, we forecast that the economy will experience a more steady run of growth in the short to medium term. In 2017 Scottish GVA increased by 0.8%, behind the UK average of 1.9% and largely held back by a declining construction sector. Over the next five years, Scottish GVA is forecast to pick up pace each year to a peak of 2.0% in 2022, before slowing to an average annual growth rate of 1.4% from 2022 up to 2038. The growth rates have been revised downwards compared to our 2014 report, and are lower than the historical averages, as a result of Brexit and continued fiscal tightening measures.

Fig. 15. GVA: Scotland, 1992-2038 (% annual growth)



Source: Oxford Economics

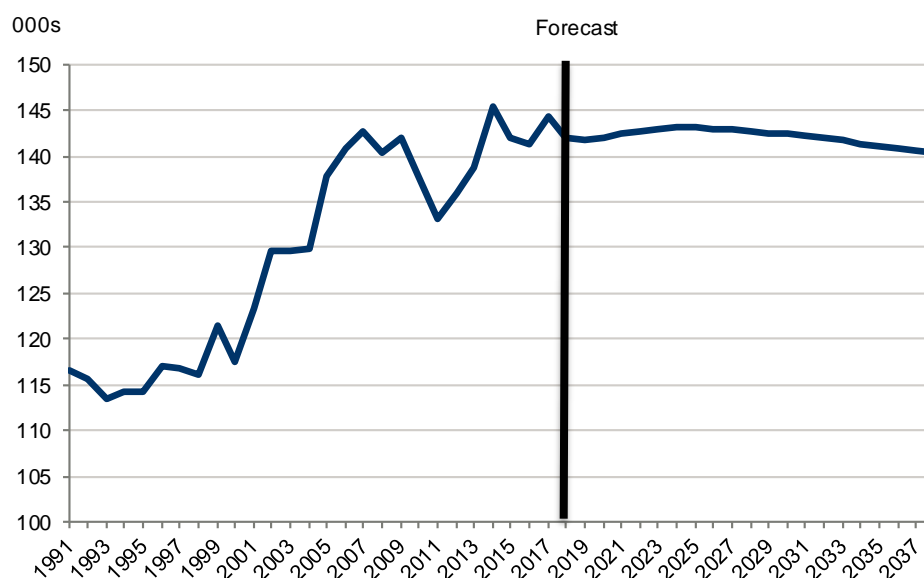
4.3 NORTH LANARKSHIRE

4.3.1 Employment

Total employment in North Lanarkshire is estimated to have risen by 2.1% in 2017, following the same trend of strong growth that was seen in Scotland as a whole. This increase is equivalent to the creation of 2,900 net new jobs. Despite growing at its fastest pace since 2014, North Lanarkshire still lagged slightly behind Glasgow & the Clyde Valley city region (2.3%), and Scotland (2.4%) in 2017. Over the next few years, North Lanarkshire will not maintain this pace of growth, and is forecast to experience a 1.6% decline in employment in 2018 followed by a further 0.2% in 2019.

By 2028, North Lanarkshire's total employment is forecast to rise by just 600 net new jobs. Over this period, the wider Glasgow & the Clyde Valley city region will outperform North Lanarkshire, growing by 0.3% on average each year as it is boosted by strong employment growth in its largest local authority, Glasgow City.

Fig. 16. Employment: North Lanarkshire, 1991-2038 (000s)



Source: Oxford Economics

Total employment growth in North Lanarkshire between 2008 and 2018 was underpinned by strong performances in the public administration & defence, transportation & storage and professional, scientific & technical services. Over the period 2018–2028, the number of net new jobs will be lower, in part due to the recovery from the financial crisis in the previous period leading to strong growth, but also in part due to continuing fiscal tightening and potentially lower growth as a result of Brexit as business investment remains subdued.

Over the decade ahead, from 2018–2028, we forecast that there will be 600 net new jobs in North Lanarkshire. Leading the way in terms of job creation will be the construction sector, which alone is expected to create 1,900 jobs, followed by administrative & support services (900) and professional, scientific &

technical services (600). Growth in these sectors will help to offset the declines in manufacturing, which is forecast to decrease by 1,500 jobs by 2028. There will also be a contraction in the public administration & defence sector (1,500 jobs) contrasting its leading position in terms of job creation historically, and this decline can in part be attributed to the public-sector cuts throughout the UK which are forecast to remain at least in the short term.

Overall, the total number of jobs created in North Lanarkshire is expected to continue its slowdown from the strength experienced in the 1998–2008 period. Over this period, 24,200 net new jobs were created, with human health & social work activities responsible for 11,300 jobs. The following 10-year period saw a sharp slowdown, with 1,700 net new jobs. Over the decade ahead (2018-2028), we forecast that there will be just 600 net new jobs in North Lanarkshire, with human health & social work expected to have a much lower impact on total employment, with 200 net new jobs over the next decade.

**Fig. 17. Employment by sector: North Lanarkshire, 1998-2038
(absolute change, 000s)**

Sector	1998-2008 (000s)	2008-2018 (000s)	2018-2028 (000s)	2028-2038 (000s)
Agriculture, forestry & fishing	0.4	0.0	0.0	-0.1
Mining & quarrying	-0.1	-0.2	-0.1	0.0
Manufacturing	-5.1	-3.5	-1.5	-1.6
Electricity, gas, & steam	-0.3	0.5	-0.1	-0.1
Water supply; sewerage, waste management	-0.3	1.2	-0.1	-0.2
Construction	4.4	1.6	1.9	1.0
Wholesale & retail trade	2.5	-4.2	0.3	-0.7
Transportation & storage	-2.1	3.0	-0.2	-0.6
Accommodation & food service activities	2.2	-0.9	0.1	-0.3
Information & communication	1.7	0.9	0.1	-0.1
Financial & insurance activities	0.8	-1.0	-0.1	-0.1
Real estate activities	0.7	0.1	0.0	0.0
Professional, scientific & technical activities	0.2	2.6	0.7	0.5
Administrative & support service activities	4.5	-3.5	0.9	0.7
Public administration & defence	4.0	4.4	-1.5	-1.1
Education	-2.1	-0.6	-0.2	-0.2
Human health & social work activities	11.3	1.6	0.2	0.5
Arts, entertainment & recreation	0.3	-0.1	0.3	0.2
Other service activities	1.2	-0.1	0.0	-0.1
Total	24.2	1.7	0.6	-2.2
Source: ONS, Oxford Economics				

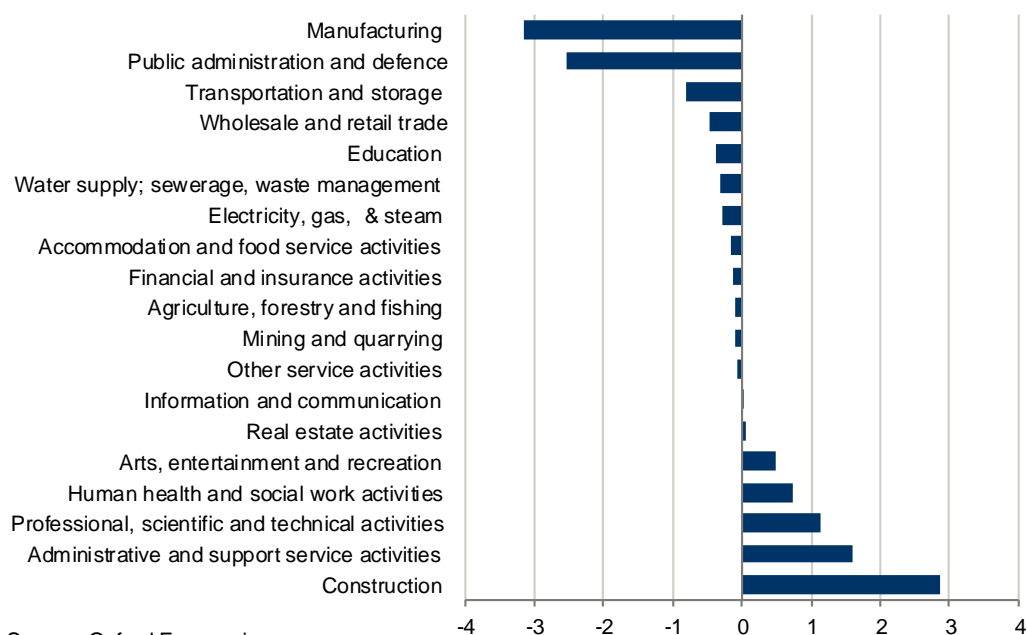
Fig. 18, below, outlines the sectoral employment change forecast in North Lanarkshire over the next 20 years. In line with historical trends, manufacturing is set to see the largest absolute decline over this period, as the wider economy continues its shift towards automation and adoption of new technologies which increases productivity and lowers demand for workers. The manufacturing sector is expected to contract by 3,100 jobs by 2038, equivalent to a loss of almost one third of jobs compared to 2018 levels.

Public administration & defence is also forecast to see a contraction in employment, with an overall loss of 2,600 jobs by 2038. Continuing cuts to public funding will be partially responsible for the fall in employment in the public sector. The public administration & defence sector is also forecast to see declines throughout the Glasgow & the Clyde valley city region (10,900 jobs) and Scotland (28,400 jobs).

On a positive note, human health & social work will continue to see job expansion over the next 20 years. However, the rise in employment for this sector is expected to be at a much slower pace in comparison to the 1998-2018 period. A net increase of 700 jobs is forecast and the sector will remain the largest employing sector in North Lanarkshire in 2038.

The construction sector is forecast to see the largest increase in jobs in North Lanarkshire over the long-term forecast. The sector will have 2,900 additional jobs by 2038, and this growth (alongside wholesale & retail trade's employment contraction) will move the sector up to second place alongside retail trade in terms of the number of jobs they hold in North Lanarkshire. In comparison to Glasgow & the Clyde Valley city region and Scotland, North Lanarkshire's construction sector is larger, accounting for more than 11% of total employment compared to 7% and 6% in the wider regions respectively.

Fig. 18. Sectoral employment change: North Lanarkshire, 2018-2038 (000s)



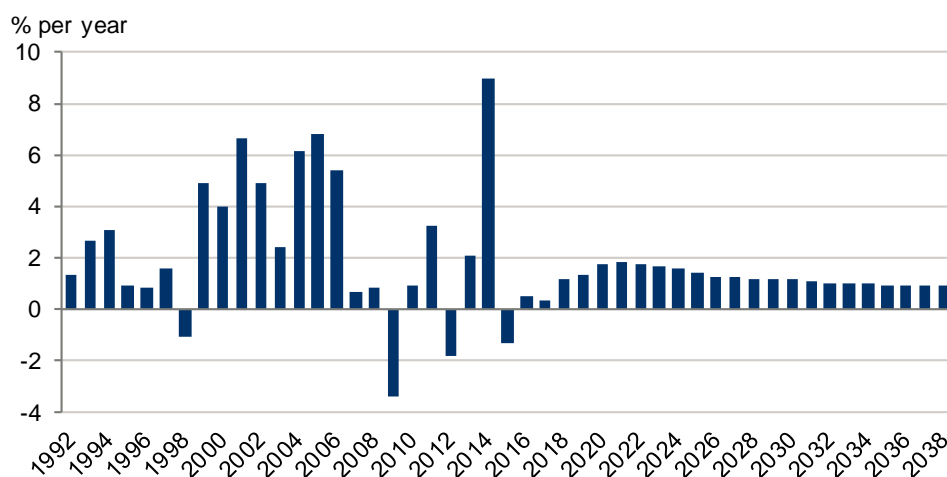
Source: Oxford Economics

4.3.2 Gross Value Added

GVA growth in North Lanarkshire is forecast to increase by 1.2% in 2018, picking up pace in comparison to the muted performance seen between 2015 and 2017. North Lanarkshire is expected to grow at a faster rate than Lanarkshire (0.9%) and Scotland (1.0%) but will fall short of the Glasgow & the Clyde Valley city region growth (1.5%) as it is boosted by the strong performance of the dominant Glasgow City.

Over the long term, economic growth in North Lanarkshire is forecast to increase to a peak of 1.8% in 2021 and then experience a very gradual slowdown to 0.9% in 2038. The local authority's growth is forecast to remain slightly under the Scotland average from 2019 onwards.

Fig. 19. GVA: North Lanarkshire, 1992-2038 (% annual change)



Source: ONS, Oxford Economics

Fig. 20, overleaf, shows the sectoral breakdown of GVA between 2018 and 2038. The table shows that GVA growth is expected to slow in North Lanarkshire over the next two decades. We forecast growth of 1.5% on average between 2018 and 2028, slowing to 1.0% per year between 2028 and 2038. The high-value added professional, scientific & technical activities, information & communication and administrative & support services sectors are forecast to have the greatest increase, while some production and public sectors are set to experience declining output.

Despite the falling employment levels in manufacturing, the sector is accountable for the largest output in 2018 and highlights the growing productivity from technological advancements. Furthermore, GVA is forecast to rise to £978m in 2038, maintaining its leading position in terms of economic output while accounting for less than 6% of total employment.

The real estate activities sector is also highly productive. The sector ranks in the top five sectors in terms of GVA in 2018 and will maintain this leading position throughout the forecast period, while accounting for less than 1% of total employment. The sector is forecast to increase by 1.8% on average each year between 2018 and 2028, outpacing the North Lanarkshire average of 1.5% per year.

Fig. 20. Sectoral GVA change: North Lanarkshire, 2018-2038 (£2016 prices, millions, % annual average growth)

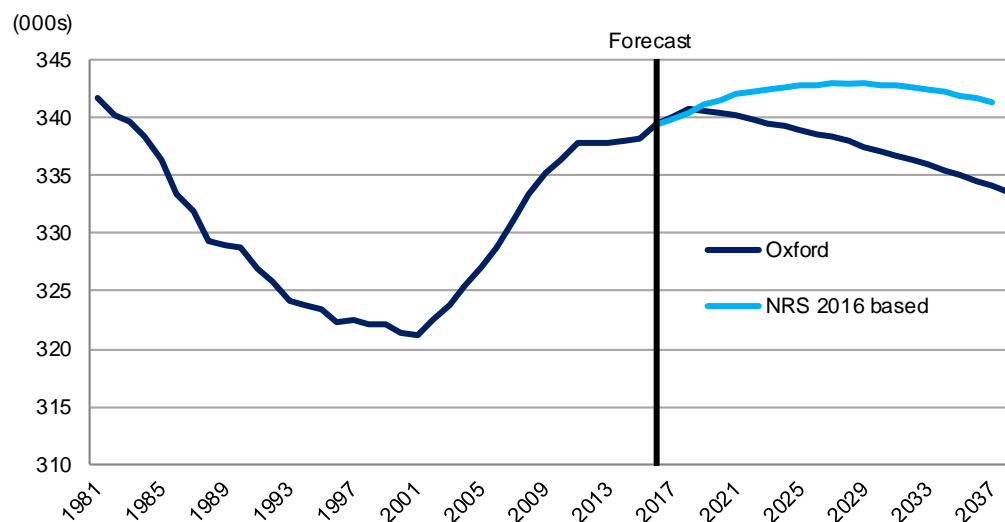
	2018 (£m, 2016)	2038 (£m, 2016)	2018-2028 (%)	2028-2038 (%)
Agriculture, forestry & fishing	39	41	0.4%	-0.1%
Mining & quarrying	76	62	-0.6%	-1.4%
Manufacturing	855	978	1.0%	0.4%
Electricity, gas, & steam	336	455	1.7%	1.4%
Water supply; sewerage, waste management	281	367	1.6%	1.1%
Construction	589	721	1.4%	0.6%
Wholesale & retail trade	724	891	1.3%	0.8%
Transportation & storage	499	584	1.0%	0.6%
Accommodation & food service activities	147	177	1.2%	0.6%
Information & communication	288	429	2.4%	1.7%
Financial & insurance activities	132	183	1.7%	1.6%
Real estate activities	539	737	1.8%	1.4%
Professional, scientific & technical activities	172	276	2.7%	2.0%
Administrative & support service activities	356	522	2.3%	1.6%
Public administration & defence	406	345	-0.8%	-0.8%
Education	353	347	0.0%	-0.2%
Human health & social work activities	712	930	1.3%	1.4%
Arts, entertainment and recreation	115	125	0.5%	0.3%
Other service activities	86	94	0.6%	0.3%
Total	6,657	8,541	1.5%	1.0%

Source: Oxford Economics

The population projections set out in Fig. 21, overleaf, show the difference between the National Records of Scotland's projections and Oxford Economics' projections. As the latter projections are economically driven, and account for the differences in migration patterns expected as a result of the decision to leave the EU, the Oxford Economics' outlook is lower than the official projections.

Total population is forecast to fall from its recent peak of almost 340,000 in 2017 to 333,500 in 2038 in North Lanarkshire, with net outward migration acting as a drag on population growth over the forecast period. In contrast to this, official projections forecast that population is set to continue to grow up to 2028, before experiencing a much more muted decline to 340,500 by 2038.

Fig. 21. Total population: North Lanarkshire, 1981-2038, Oxford Economics vs National Records of Scotland forecasts (000s)



Source: National Records of Scotland, Oxford Economics

The ratio of house prices to earnings is a common measure of housing affordability. Following the decline in house prices since the financial crisis, North Lanarkshire's average house prices have only just recovered past its 2008 level, at £97,900 in 2017. In 2017, house prices in North Lanarkshire were 3.8 times earnings, compared to 4.1 in Lanarkshire, 4.6 times in Glasgow & the Clyde Valley city region, and 5.4 times in Scotland.

Wage growth is expected to be similar throughout the above areas, with residence-based earnings rising on average by 3.1% between 2018 and 2038, and workplace-based earnings just slightly ahead of this pace of growth in Glasgow & the Clyde Valley city region.

Fig. 22. House price affordability: North Lanarkshire, 2018-2038 (% per year, on average)

Area	House prices	Workplace based earnings	Residence based earnings
North Lanarkshire	2.6	3.1	3.1
Lanarkshire	2.5	3.1	3.1
Glasgow & the Clyde Valley	2.6	3.2	3.1
Scotland	2.7	3.1	3.1

Source: Oxford Economics

5. ALTERNATIVE SCENARIO

With uncertainty regarding how the Brexit outcome will affect trade and the economy, including migration, it is prudent to consider alternative future scenarios that may lie ahead for North Lanarkshire.

5.1 A RE-BALANCED ECONOMY

The alternative scenario envisions a forecast comprising different sectoral outlooks that are credible for the UK, and thus provide an alternative macroeconomic impact on Scotland and North Lanarkshire. The model uses the past performance of sectors to model projected future growth of the individual sectors, such that sectors with stronger past performances will have faster growth in the future. The alternative scenario is based on the assumption that the UK, Scotland and, at a lower level, North Lanarkshire, would invest and grow in alternative sectors—re-balancing their economies away from their most concentrated sectors.

To construct this “rebalanced economy scenario”, the sectoral composition is based on the assumption of increased investment and export potential for the UK, which will help to boost high-tech manufacturing and agriculture. The scenario also assumes that visitor numbers to the UK rise, boosting the accommodation, leisure and cultural sectors.

The key scenario assumptions are:

- Job growth in hi-tech manufacturing sectors (bio/electronics/chemicals)
- Agricultural employment stabilises
- Stronger tourism growth
- Growth in leisure, film and cultural sectors
- Recycling, waste and environmental sectors expand more rapidly
- Extraction and utilities stabilise
- Modestly less growth in financial and professional services—reflecting transferal of skills to other sectors

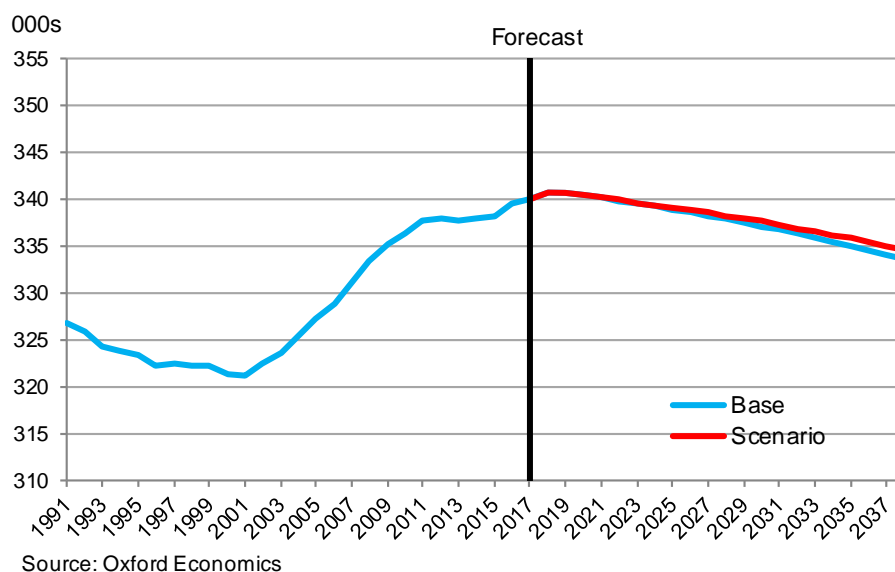
5.2 SCENARIO OUTPUTS

5.2.1 Population

Population in North Lanarkshire is forecast to experience a slight decline over the forecast period, in both the base and scenario forecasts. The scenario outlook is slightly stronger, with total population 1,000 higher by 2038 (see Fig. 23, overleaf). This is due to the employment opportunities arising from the investment in rebalancing sectors having a positive impact on net migration.

In the scenario output, net migration will still fall into negative figures in the medium term, but the net number of people leaving will be smaller than those leaving in the base output as migration reacts to the labour demand—both in terms of people migrating into the area, and also people who would have left North Lanarkshire to seek employment elsewhere choosing to stay. However, this impact is small, and both the scenario and base outputs are still forecast to see an overall decline of 0.1% on average each year between 2018 and 2038.

Fig. 23. Total population: North Lanarkshire, baseline vs rebalanced scenario, 1991-2038 (000s)



5.2.2 Employment

Under the scenario, total employment in North Lanarkshire is forecast to reach 144,500 by 2038, which is 4,000 jobs larger than the baseline outlook. Due to the investment in alternative sectors to rebalance from the most concentrated sectors throughout the UK, there are sectoral differences in the growth of employment over the forecast period.

Fig. 24. Total employment: North Lanarkshire, baseline vs rebalanced scenario, 1991-2038 (000s)

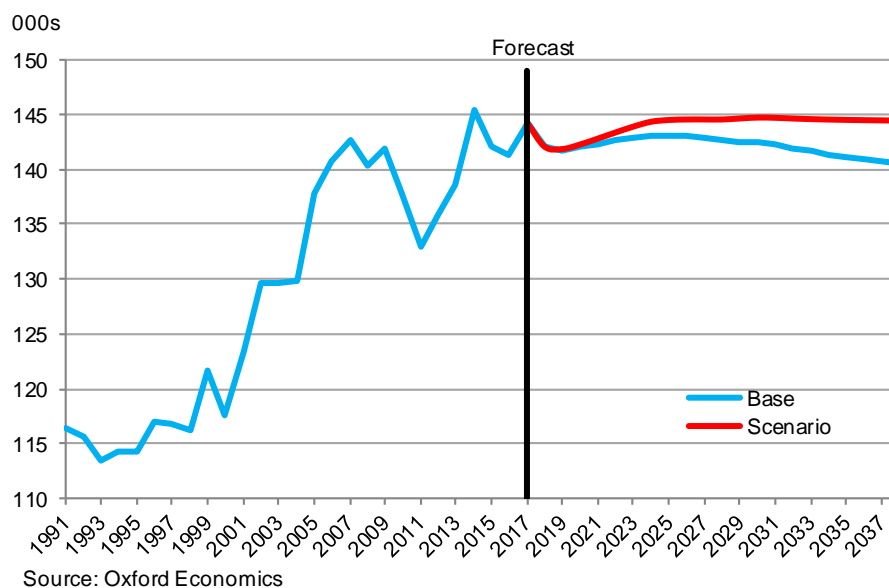


Fig. 25 shows the breakdown of total employment by sector in North Lanarkshire in 2038. The largest difference in total employment between the two outputs is seen in the manufacturing sector, with 1,500 additional jobs in the scenario output. This sector is still in decline in the scenario—but at a slower rate of 0.8% on average each year, compared to a 1.7% annual contraction in the baseline. The retail sector under the scenario is forecast to reach 19,800 jobs by 2038, remaining relatively flat in comparison to the decline forecast in the baseline. The declines forecast in the utilities sectors will also lessen, with agriculture expected to rise by 0.3% per year in the scenario, compared to an annual decline of 0.6% in the baseline outlook. The services sectors will remain the fastest-growing sectors over the forecast period.

As mentioned above, while some of the additional employment will be filled by inward migration, the majority will likely be filled by people already in North Lanarkshire. The employment rate is forecast to reach 71.2% by 2038 in the scenario output compared to 69.9% in the baseline output.

In terms of economic growth, GVA in North Lanarkshire will also be higher in the scenario outlook, reaching £9.3bn in 2038, equivalent to an additional £760m of output compared to the baseline. Growth will remain strongest in the professional services and information & communication sectors under the scenario output, while all sectors will see growth revised upwards between 2018 and 2038 as a result of the rebalancing investment.

Fig. 25. Total employment by sector: North Lanarkshire, baseline vs rebalanced scenario, 2038

(000s)	Base	Scenario	Difference
Agriculture, forestry and fishing	0.9	1.1	0.2
Mining and quarrying	0.1	0.2	0.1
Manufacturing	7.9	9.4	1.5
Electricity, gas, & steam	1.4	1.5	0.1
Water supply; sewerage, waste management	1.5	1.5	0.1
Construction	17.9	18.0	0.1
Wholesale and retail trade	19.2	19.8	0.6
Transportation and storage	11.2	11.6	0.4
Accommodation and food service activities	6.5	6.6	0.2
Information and communication	4.7	4.8	0.1
Financial and insurance activities	1.6	1.6	0.0
Real estate activities	1.0	1.1	0.0
Professional, scientific and technical activities	7.5	7.6	0.1
Administrative and support service activities	11.1	11.3	0.2
Public administration and defence	9.7	9.8	0.1
Education	5.5	5.6	0.0
Human health and social work activities	25.6	25.6	0.0
Arts, entertainment and recreation	4.1	4.2	0.1
Other service activities	3.0	3.1	0.1
Total	140.5	144.5	4.0
Source: Oxford Economics			

In the current economic climate, we assign a probability of 50% to our baseline forecasts. However, there are numerous possible outcomes that could lie ahead, and the rebalanced scenario is only one of many alternative scenarios. It is worth remembering there are a range of risks which abound that could alter the outlook significantly.

Fig. 26. Summary: North Lanarkshire, baseline vs rebalanced scenario forecasts, 2038

	Base	Scenario
Population (000s)	334	335
Total employment (000s)	140	144
GVA (£m, 2016)	8,541	9,302
% per annum (2018-38)	Base	Scenario
Population	-0.1	-0.1
Total employment	-0.1	0.1
GVA	1.3	1.7
Source: Oxford Economics		

6. CONCLUSIONS

North Lanarkshire is forecast to experience a pick-up in its economic performance in 2018, following relatively weak growth in 2017.

GVA growth in the local authority will follow the same trend of growth as for Scotland as a whole, rising to a peak in 2021—but with North Lanarkshire just lagging behind Scotland in terms of growth rates. Over the forecast period (2018-2038), North Lanarkshire will see an annual average GVA growth rate of 1.3%, compared to 1.5% for Scotland overall.

The short-term outlook is boosted by a strong labour market, with historically low unemployment rates. Typically, a strong labour market can be expected to push up real wages, but this is not yet the case. Consumer spending remains sluggish as a result of stagnant wages, high inflation, welfare constraints, lower consumer confidence due to Brexit uncertainties, and, to a lesser extent, rising interest rates. The savings ratio is already low, so further borrowing to boost spending is unlikely.

As private consumption and government spending remain relatively subdued over the next few years, GDP will be more reliant on business investment and exports of goods and services. However, the strength of export growth in 2017 will not be maintained into 2018 and beyond, as the recovery in sterling reduces the short-term competitiveness gains from the weaker pound. Similarly, investment intentions remain subdued until the Brexit outcome is clarified. While we expect the UK to agree to a withdrawal agreement, there is a sizeable risk that parliament will not find approval for an agreement by the deadline date, and the outcome for trade still is unknown.

The uncertainty within the economy due to Brexit means that the outlook for North Lanarkshire, Scotland, and even the UK, are uncertain.

Our forecasts are based on a probability that the two extremes —Brexit in Name Only, and resorting to trade under WTO rules—are of equal likelihood as of August 2018. However, this could change, as it has done in the past, as the negotiation process still does not show a clear path for the departure of the UK from the European Union. Amid this uncertainty, it is sensible to explore alternative scenarios to consider their impact on the North Lanarkshire economy—in this case, the re-balancing of the UK economy away from its most concentrated sectors.

Our modelling results show that this scenario would see an increase in growth in all sectors—both the alternative sectors that will receive additional investment, and the most concentrated ones.

While the business services sectors will continue to post the strongest growth, the alternative sectors will see either a lower decline over the forecast period, or reversing the contraction and experiencing positive growth. There would be an additional 4,000 jobs in the North Lanarkshire economy by 2038; these will mostly be filled by the unemployed and inactive in North Lanarkshire, as its total population will increase by only 1,000 people by that year.

ANNEX A

LIST OF ABBREVIATIONS USED

ABI	Annual Business Inquiry
AES	Annual Employment Survey
APS	Annual Population Survey
ASHE	Annual Survey of Hours and Earnings
BRES	Business Register and Employment Survey
GDP	Gross Domestic Product
GVA	Gross Value Added
LFS	Labour Force Survey
MPC	Monetary Policy Committee
MYE	Mid-Year Estimates
NES	New Earnings Survey
NRS	National Records of Scotland
NUTS	Nomenclature of Units for Territorial Statistics
ONS	Office of National Statistics
SIC	Standard Industrial Classification
UK	United Kingdom
WFJ	WorkForce Jobs
WTO	World Trade Organisation

ANNEX B – DATA SOURCES AND ASSUMPTIONS

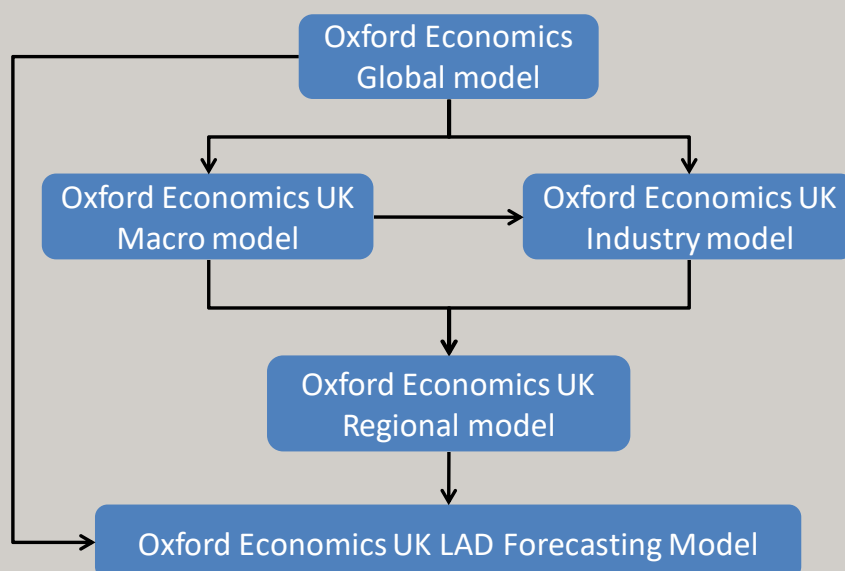
MODEL OVERVIEW

This note provides technical information on the structure of Oxford Economics Local Authority District Forecasting Model and details of the data sources and definitions of variables within the model. The model should be viewed as one piece of evidence in making policy decisions and tracking economic and demographic change. It is not intended to be used on its own to set employment targets for local authority areas. Such targets will need to take account of local opportunities, constraints and community aspirations. As with all models it is subject to margins of error which increase as the level of geographical detail becomes smaller, and relies heavily upon published data.

Models, though predominantly quantitative, also require a degree of local knowledge and past experience, or more generally forecasting art, to make plausible long term projections. To this end the Oxford model has been developed by a team of senior staff who have a long history in model building and forecasting at both local and regional levels.

The Local Authority District Forecasting Model sits within the Oxford suite of forecasting models. This structure ensures that global and national factors (such as developments in the Eurozone and UK Government fiscal policy) have an appropriate impact on the forecasts at a local authority level. This empirical framework (or set of ‘controls’) is critical in ensuring that the forecasts are much more than just an extrapolation of historical trends. Rather, the trends in our global, national and sectoral forecasts have an impact on the local area forecasts. In the current economic climate this means most, if not all, local areas will face challenges in the short-term, irrespective of how they have performed over the past 15 years due to wider UK and global trends.

Figure B.1: Hierarchal structure of Oxford Economics’ suite of models



Source: Oxford Economics

The Local Authority District Forecasting Model produces base forecasts, which can be compared with other published forecasts (though care should be taken over data definition issues), and as a guide to aid commentary or analysis of North Lanarkshire. These forecasts can in one sense be considered to provide baseline 'policy off' projections with which the actual outcome under policy initiatives could be compared. However it must be realised that there are inherent difficulties in using the forecasts as a 'policy-off' baseline. In particular the base projections are 'unconstrained' in the sense that they make no allowance for constraints on development which may be greater than in the past.

Our local forecasting model depends essentially upon three factors:

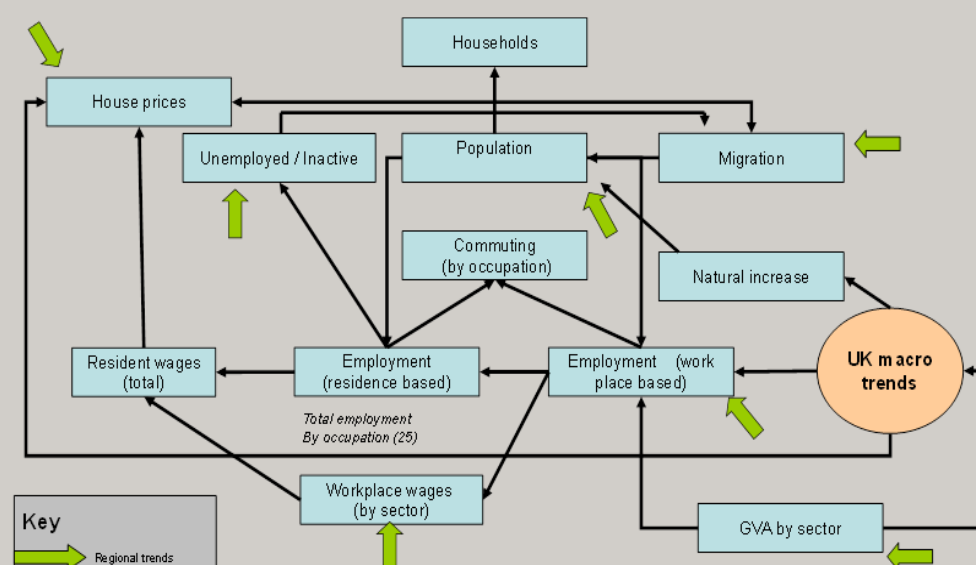
- National/regional outlooks – all the forecasting models we operate are fully consistent with the broader global and national forecasts which are updated on a monthly basis.
- Historical trends in an area (which implicitly factor in supply side factors impinging on demand), augmented where appropriate by local knowledge and understanding of patterns of economic development built up over decades of expertise, and
- Fundamental economic relationships which interlink the various elements of the outlook.

As per your requirements, this report focuses on the outlook between 2018 and 2038. Though it is worth bearing in mind that forecasting becomes more 'trend' based in the long run as there is a greater degree of uncertainty with producing forecasts over a long period. Thus the forecasts post 2028 should be interpreted with caution.

MODEL STRUCTURE

The main internal relationships between variables are summarised in Figure B.2. Each variable is related to others within the models. Key variables are also related to variables in the other Oxford Economics models.

Figure B.2: Main relationships between variables in the LAD Forecasting Model



Source: Oxford Economics

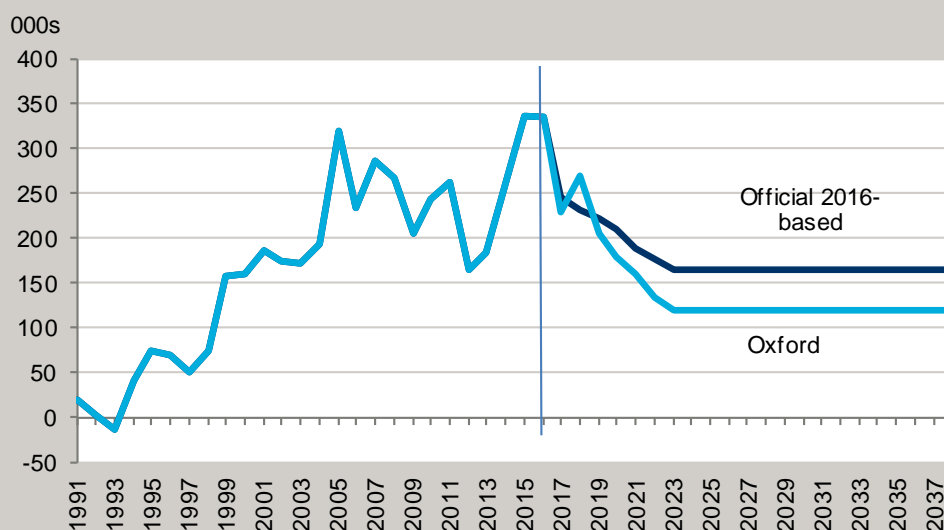
DATA SOURCES AND ASSUMPTIONS

Population and migration

Population and migration data are collected from the National Mid-Year estimates (MYE) for each area. These have been revised in line with the 2011 Census results. The latest data available is for 2017.

Oxford Economics produce their own forecasts of population which are economically driven and thus differ from the official population projections. Official births and deaths projections from 2016-based population projections are used but we have our own view on UK migration. The chart below sets out the Oxford migration forecast for the UK compared with the 2016-based population projection. Oxford Economics expect UK net migration to average 120,000 per annum from 2023 compared to 165,000 in the official projections.

Figure B.3: Total migration, UK, Oxford vs Official 2016-based projections, 000s



Source: Oxford Economics

The divergence reflects the impact that Brexit is forecast to have on migration levels. Oxford Economics' population forecasts are derived from an economically driven model whereas official projections are trend based and do not consider how demand in the economy (and the likely impact on employment rates) affects migration.

At the local level, migration is linked to the employment rate forecast. If the employment rate within an area is falling too fast, migration reacts as the model assumes that people would not be attracted into this area to live, given that the employment prospects are weak. This approach ensures that the relationship between the labour market outlook and the demographic forecasts is sensible. This series is scaled to be consistent with the migration forecast for Scotland from the UK Regional Model.

The total population forecast is then constructed using the forecast of migration and the natural increase assumptions. Natural increase for local areas is forecast based upon recent trends in both the historical data and the official projections.

Working-age population

Working-age population data is also collected from the Mid-Year estimates (MYE) for each area up to 2017. It is defined at all people aged 16 to 64.

The share of working age to total population is forecast using both trends in the official projections and trends in the Scotland forecast from our UK Regional Model. This is applied to the total population forecast and scaled to be consistent with the working-age population for Scotland.

Employees in employment

There are two key sources for the employee jobs data – 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 2018 Q1.
- The BRES is an employment survey which has replaced the Annual Business Inquiry (ABI). Similar to WFJ, BRES data is based upon SIC 2007, but it is only published for the years 2008-16. Prior to this, ABI and Annual Employment Survey (AES) data is available for employee jobs data, however this is based on an older industrial classification (SIC 2003). Data is 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. The survey is collected in September of each year and not seasonally adjusted.

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 2009-16. This is based upon SIC 2007 sectors. In 2008, levels of employee jobs are constructed by extrapolating back the trend in the old BRES. Data from the ABI and AES is used to construct the data back to 1991.

This constructed local dataset is then scaled to be consistent with the UK employee jobs series from WFJ, by applying an adjustment factor to all sectors which converts the data to annual average values (seasonally adjusted). This is measured on a workplace basis.

The starting point in producing employment forecasts is the determination of workplace-based employees in employment in each of broad 19 SIC2007 based sectors consistent with the Scotland and UK outlooks. At local authority level some of the sectors are driven predominantly by population estimates, others by total employment in the area and the remainder relative to the regional performance (largely exporting sectors). All sectors are also influenced by past trends in the local area. Taken in totality, employment is cross referenced with a number of variables (including population, relative performance across similar areas, historical cyclical performance and known policy) for checking and validation purposes. Where necessary, manual adjustments are made to the projected trends to reflect this validation process. The methods of sectoral projection are as follows, each of which are forecast based upon recent trends:

- Agriculture - share of Scotland
- Mining and quarrying - share of Scotland
- Manufacturing - share of Scotland
- Electricity, gas, & steam - share of Scotland
- Water supply; sewerage, waste management - share of Scotland
- Construction - location quotient based upon total employment
- Wholesale and retail trade - location quotient based upon consumer spending
- Transportation and storage - location quotient based upon consumer spending
- Accommodation and food service activities - location quotient based upon consumer spending
- Information and communication - share of Scotland
- Financial and insurance activities - share of Scotland
- Real estate activities - location quotient based upon total employment
- Professional, scientific and technical activities - location quotient based upon total employment
- Administrative and support service activities - location quotient based upon total employment
- Public administration and defence - location quotient based upon population
- Education - location quotient based upon population
- Human health and social work activities - location quotient based upon population
- Arts, entertainment and recreation - location quotient based upon consumer spending
- Other service activities - location quotient based upon consumer spending

Self-employment

Self-employment data for Scotland is taken from Workforce jobs (19 sector detail). The data is broken down into detailed sectors using both employee trends and the UK data for self-employment by 2 digit SIC2007 sector. Data for the local authorities is Census based (and scaled to the Scotland self-employed jobs estimates) and is broken down using the employees in employment sectoral structure. The sectors are forecast using the growth in the sectoral employees in employment data and the estimates are scaled to the regional estimate of self-employment by sector.

Total employment (jobs)

Total employment includes employees in employment, the self-employed and Her Majesty's Forces. This is measured on a workplace basis. No specific forecasting for this measure is required - it is calculated from the forecasted elements discussed above.

Note that this estimate is a jobs and not people measure (i.e. one person can have more than one job and would be counted more than once in this indicator).

Unemployment

Data for unemployment from ILO is taken, and the most recent data available is for 2017. A factor for resident unemployment growth and also for the working age population growth is applied to show local differences from the regional total. The ILO data is forecasted using growth rates from the OE regional model, and aggregated with the results generated from the factors mentioned above. A minimum unemployment rate cap is applied, and the final figure is scaled to the regional unemployment level.

Resident employment

This is a measure of the number of people living in an area who are in work. Resident employment data is taken from the Annual Population Survey. The latest year of available data is 2017. Given that this data is survey based and tends to be very volatile, data is 'smoothed' by taking a 3 year average.

Residence employment is based on a commuting matrix taken from the Census. This matrix tells us where employed residents of an area work. Using this information each available job (see workplace employment people based above) is allocated to a resident of a given authority. This method assumes the proportions of commuting do not change over time.

Employment rate is defined as residence employment as a percentage of the population aged 16 plus. No specific forecasting of this measure is required.

Labour force

Labour force is the sum of resident employment and unemployment (claimant count). No specific forecasting for this measure is required - it is calculated from the forecasted elements discussed above.

Gross Value Added

The balanced approach GVA data is a new dataset provided by the ONS, which attempts to balance the income approach and the production approach to provide one final, and more accurate, indicator. Estimates of local authority GVA by sector are constructed using the relative productivity by sector, applied to the local area sectoral employment and adjusted for relative earnings. A further adjustment is applied to ensure that the estimates are consistent with the NUTS 3 data by sector. This NUTS 3 data is the lowest level of official data available. The LAD GVA experimental data provided by the ONS is converted to real prices in the base year (2016) and a scaling factor from this is applied to the estimates from above ensure that the Oxford Economics numbers match the ONS data.

Workplace based wages

Scotland data on average wages by sector is available from the Annual Survey of Hours and Earnings (ASHE), the latest year of data is 2016. At the level of individual local authorities estimates of total wages on a workplace basis and a residence basis are also available from the NES and now ASHE.

The growth in UK wages by sector is applied to the local area sectoral wage series (constructed using ASHE totals for authorities and regional industry totals) to give an estimate of wages within each sector. An adjustment factor is applied to reflect the relative occupation structure of each area. Hence areas where higher paying occupations are growing faster than the regional average will have higher wages. These wages estimates are then scaled to be consistent with regional wage totals.

Residence based wages

Residence based wages are constructed within the model by adjusting the workplace based wages for local areas. An adjustment factor, which is based upon ASHE workplace based and residence based data, is applied to ensure consistency with the published data. This factor is held constant but can be adjusted for scenario purposes.

House prices

Local Authority house price data is taken from the Registers of Scotland and are forecast based upon the unemployment and earnings forecasts within each local area. The forecasts are controlled to the regional and national house price forecasts which take into account macro factors such as interest rates. Data for North Lanarkshire are constructed as a weighted average based upon population.

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