

Northern Ireland Quarterly Index of Production

Quarter 2 (April-June) 2018

Date: 13 September 2018

Geographical Area: Northern Ireland

Theme: Economy

Frequency: Quarterly

Key Points

Output estimates are calculated from the Index of Production (IOP) aspect of the Quarterly Business Survey (QBS). The IOP has a sample size of approximately 1,100, covering all businesses with 40 or more employees and a representative sample of smaller businesses.

- The NI IOP has increased over the quarter for the third consecutive quarter (0.9%).
- The UK IOP reported a fall in output over the quarter of 0.9% and an increase of 1.4% over the year.
- When the most recent four quarters are compared to the previous four quarters, NI output is divergent to the UK. NI output decreased by 4.1%, whilst the UK reports annualised growth of 2.0%.
- The IOP has recovered by 11.3% since the recent minimum value recorded in Quarter 3 (July – September) 2009. In comparison the UK has recovered by 6.1% over the same period.
- The quarterly increase in production output has largely been driven by increases in the Manufacturing (1.3%), Water supply, sewerage and waste management (Inc. recycling) (2.1%) and Mining and quarrying sectors (15.1%). This was partially offset by a fall in Electricity, gas, steam and air conditioning supply of 3.4%.
- The annual increase in NI production output of 0.1% was driven by increases in Water supply, sewerage and waste management (Inc. recycling) (9.8%) and Electricity, gas, steam and air conditioning supply (2.5%).

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National Statistics

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

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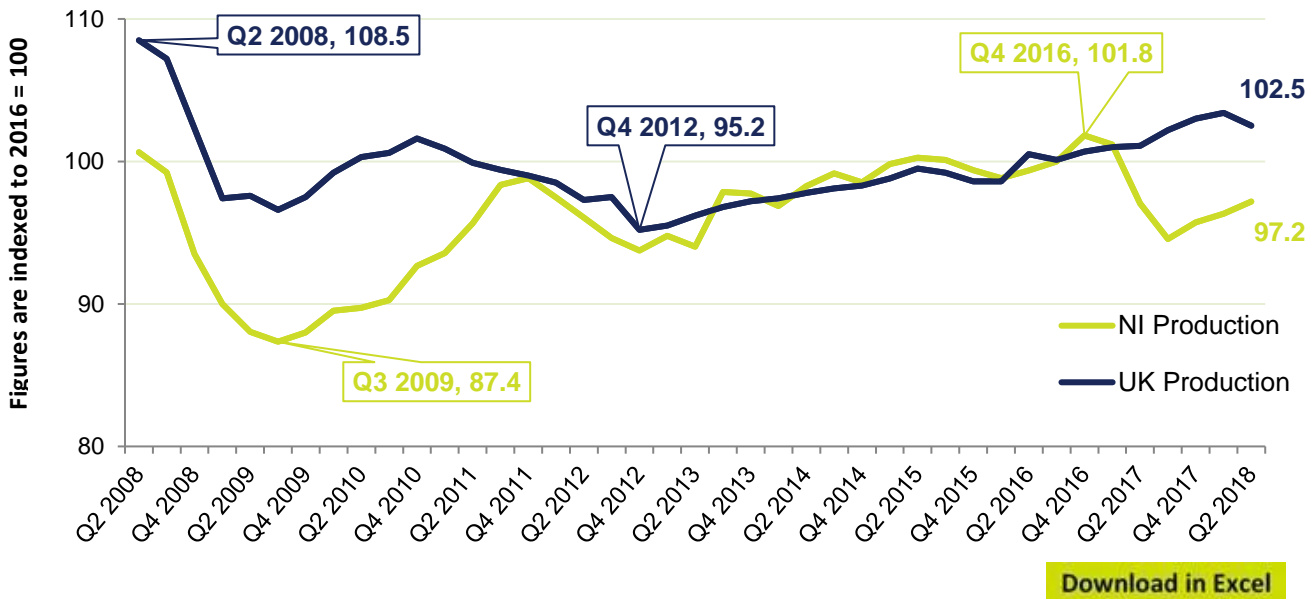
1 Summary of Index of Production

1.1 Change in IOP

The seasonally adjusted estimate for the NI IOP for Quarter 2 2018 showed:

- an increase of 0.9% over the quarter from the Quarter 1 2018 estimate.
- an increase of 0.1% over the year from the Quarter 2 2017 estimate.
- a decrease of 4.1% on a rolling four quarters (annualised) basis.

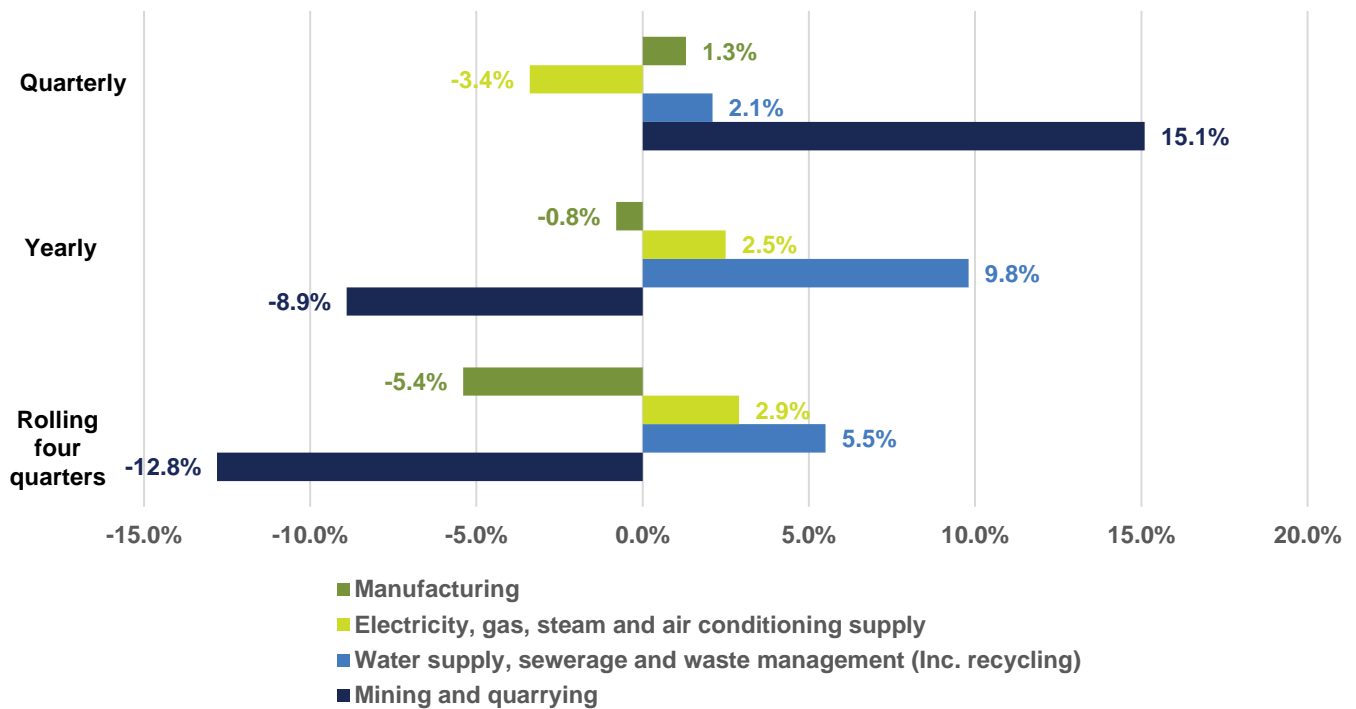
Figure 1.1 IOP NI & UK (Q2 2008 – Q2 2018)



Commentary

Output in the NI Production sector has grown in real terms by 0.9% over the second quarter of 2018. NI output remains 4.6% below its highest value in the last ten years (Quarter 4 (October – December) 2016) and 4.6% lower than the highest point since the series began (Quarter 4 2007). NI growth over the year (0.1%) was lower than in the UK (1.4%). NI output has recovered 11.3% since its lowest point in ten years (Quarter 3 (July – September) 2009). In contrast the UK has recovered 6.1% over the same period.

Figure 1.2 Quarterly, annual and rolling four quarters changes in IOP at sector level



Changes over the quarter

Comparing the seasonally adjusted NI IOP from Quarter 1 2018 (January-March) to Quarter 2 2018 (April-June) showed:

- an increase in Manufacturing output by 1.3%;
- a decrease in Electricity, gas, steam and air conditioning supply output by 3.4%;
- an increase in Water supply, sewerage and waste management (Inc. recycling) output by 2.1%; and,
- an increase in Mining and quarrying output by 15.1%.

Changes over the year

Comparing the seasonally adjusted NI IOP from Quarter 2 2018 to Quarter 2 2017 showed:

- a decrease in Manufacturing output by 0.8%;
- an increase in Electricity, gas, steam and air conditioning supply output by 2.5%;
- an increase in Water supply, sewerage and waste management (Inc. recycling) output by 9.8%; and,
- a decrease in Mining and quarrying output by 8.9%.

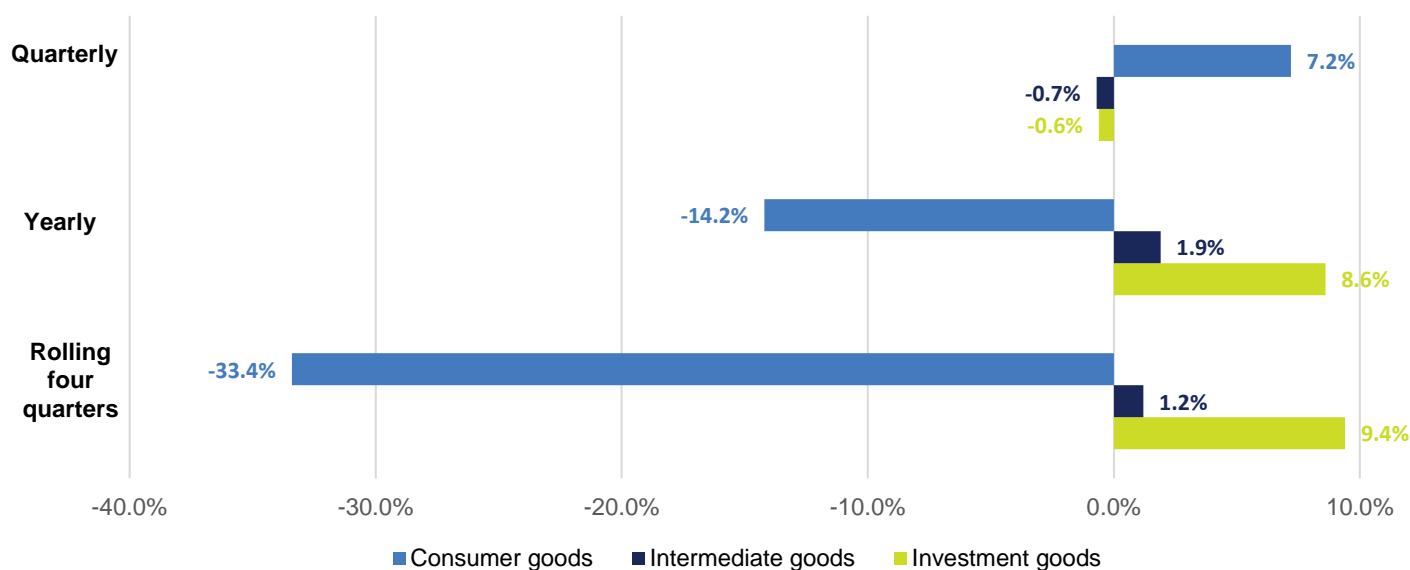
Changes over a rolling four quarters basis

Comparing the seasonally adjusted NI IOP for Quarter 3 2017 – Quarter 2 2018 to Quarter 3 2016 to Quarter 2 2017 showed:

- a decrease in Manufacturing output by 5.4%;
- an increase in Electricity, gas, steam and air conditioning supply output by 2.9%;
- an increase in Water supply, sewerage and waste management (Inc. recycling) output by 5.5%; and,
- a decrease in Mining and quarrying output by 12.8%.

1.2 Market sector analysis

Figure 1.3 Quarterly, annual and rolling four quarters changes in output at market sector level



Changes over the quarter

Comparing seasonally adjusted NI goods from Quarter 1 2018 (January-March) to Quarter 2 2018 (April-June) showed:

- an increase in Consumer goods (7.2%).
- a decrease in Intermediate goods (0.7%).
- a decrease in Investment goods (0.6%).

Changes over the year

Comparing seasonally adjusted NI goods from Quarter 2 2018 to Quarter 2 2017 showed:

- a decrease in Consumer goods (14.2%).
- an increase in Intermediate goods (1.9%).
- an increase in Investment goods (8.6%).

Changes over a rolling four quarters basis

Comparing seasonally adjusted NI goods from Quarter 3 2017 – Quarter 2 2018 to Quarter 3 2016 – Quarter 2 2017 showed:

- a decrease in Consumer goods (33.4%).
- an increase in Intermediate goods (1.2%).
- an increase in Investment goods (9.4%).

1.3 Productivity (Index of Manufacturing Productivity (IOMP))

The seasonally adjusted estimate for Manufacturing Productivity for Quarter 2 2018 showed:

- an increase of 0.4% in Manufacturing Productivity over the quarter;
- a decrease of 5.0% over the year from Quarter 2 2017 estimate;
- a decrease of 8.5% over a rolling four quarters basis;
- Productivity remains 16.2% below its highest recorded level in Quarter 3 2011; and
- Productivity is 0.4% above its lowest point recorded in the last ten years in Quarter 1 2018.

This is the first NI IOP bulletin published using 2016 as the new base year (2016 = 100). For ease of comparability the change is in line with the UK index.

Date of next publication

The next NI IOP bulletin is planned for 13th December 2018.

Further information is available on the [IOP section](#) of the NISRA website.

1.4 Context

The IOP is an important short-term measure of change in the output of the production sector of the economy. The contents of this report will be of interest to government policymakers, Members of the Legislative Assembly, the business community, economic commentators, academics and members of the general public with an interest in the NI economy. A summary of recent uses is available [here](#).

The Department for the Economy (DfE) [Economic Commentary \(Spring 2018\)](#) provides an overview of the NI economy, setting it in context with the UK and Republic of Ireland.

The most up-to-date official statistics on the economy and labour market are available on the [Economic Overview section](#) of the [Economic and Labour Market Statistics \(ELMS\) section of the NISRA website](#).

The IOP is published on a Standard Industrial Classification 2007 (SIC07) basis. IOP data prior to Quarter 2 2011 were collected on a SIC03 basis and have been converted to approximate the SIC07 coverage.

The background notes (section 6) provide detailed information on the methodology used to produce the statistics as well as information on the quality and accuracy of the data. This bulletin contains results for the production sector as a whole, for Manufacturing, for Electricity, gas, steam and air conditioning supply, for Water supply, sewerage and waste management (inc. recycling) and for Mining and quarrying sectors. Production sector series are seasonally adjusted (unless otherwise stated) on a 2016=100 basis, using X-13 ARIMA SEATS, giving data up to the most recent available quarter (Quarter 2 2018).

Comparative UK data, produced by the Office for National Statistics (ONS), are presented where these are available. Click [here](#) to see the latest UK IOP results.

This publication provides three measures of growth for the index.

1. The quarter-on-quarter change provides the most recent measure of how the sector is changing. It is appropriate to compare consecutive quarters as the indices are seasonally adjusted to remove the effects of changes in output as a result of the time of the year;
2. Comparisons with the same quarter one year ago; and
3. A comparison of the most recent twelve months with the twelve months before. The quarterly comparison over the year provides an additional control on the seasonal effects. The comparison of the rolling annual average is useful for identifying changes in output over a longer time period than the other two approaches.

Revisions

Results are provisional and subject to revision, which can be made for a variety of reasons. The most common include late responses to surveys, estimates being replaced by actual data, revisions to seasonal adjustment factors, methodological changes and changes to business classifications.

2 Production output by sector

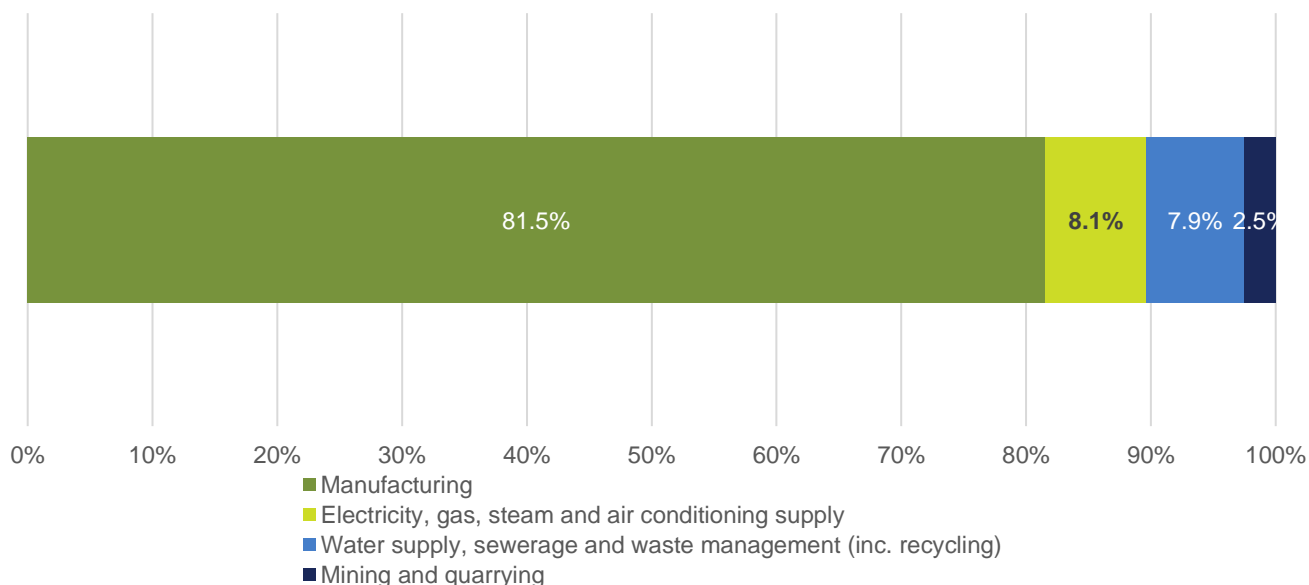
Output: Turnover, defined as the value of total sales generated from all NI based activity, excluding VAT. Turnover is rounded to the nearest thousand and is then deflated and seasonally adjusted.

2.1 Key findings

- The IOP increased 0.9% over the quarter and 0.1% over the year, and decreased by 4.1% on a rolling four quarter basis.
- The index is now showing signs of recovery from Quarter 3 2017, increasing for the third successive quarter.
- The quarterly increase in production output has been driven by increases in Manufacturing (1.3%), Water supply, sewerage and waste management (Inc. recycling) (2.1%) and Mining and quarrying sectors (15.1%). This was partially offset by a fall in Electricity, gas, steam and air conditioning supply of 3.4%.
- The annual increase in NI production output of 0.1% was supported by increases in Water supply, sewerage and waste management (Inc. recycling) (9.8%) and Electricity, gas, steam and air conditioning supply (2.5%).

The Production sector is composed of four sectors but is dominated by Manufacturing. Manufacturing accounts for approximately 81.5% of total production Gross Value Added (GVA) at 2016. The sectors are listed in order of the importance of their contribution made to the overall IOP.

Figure 2.1 IOP sector split (based on 2016 GVA)



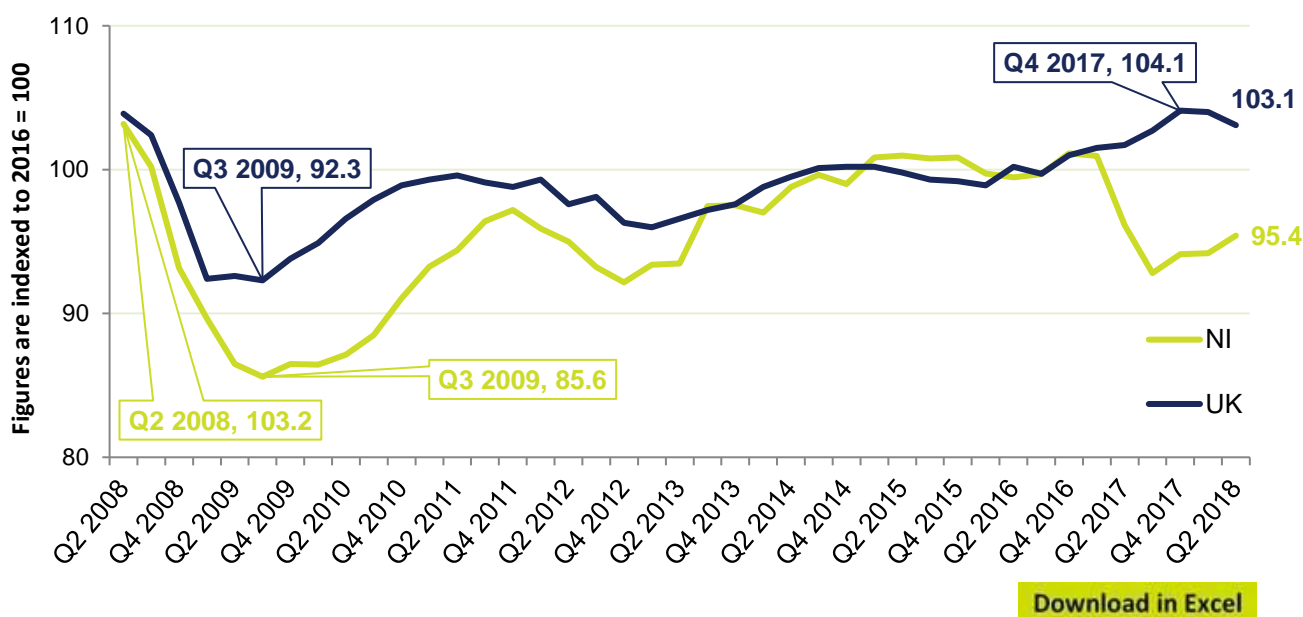
2.2 Manufacturing

Manufacturing sector (SIC07 Section C) - (weight = 81.5% of IOP): Manufacturing involves the transformation of materials into new products (outputs). It is comprised of six subsectors. Sub-sectors are defined and presented in order of the importance of their contribution towards manufacturing in Section 3.

Key findings

- The NI seasonally adjusted figures show an increase of 1.3% over the quarter, a decrease of 0.8% over the year and a decrease of 5.4% on a rolling four quarters basis.
- The UK seasonally adjusted figures showed a decrease of 0.9% over the quarter to Quarter 2 2018, an increase of 1.4% over the year and an increase of 2.5% on a rolling four quarter basis.
- The NI trend is observed to be divergent to the UK over all comparable time periods.
- NI output is 7.5% below its highest point recorded (Quarter 2 2008) over the period Q2 2008 - Q2 2018.
- NI output is 11.5% above its lowest point recorded (Quarter 3 2009) within the past ten years.

Figure 2.2 Manufacturing sector output, NI & UK (Q2 2008 – Q2 2018)



Commentary

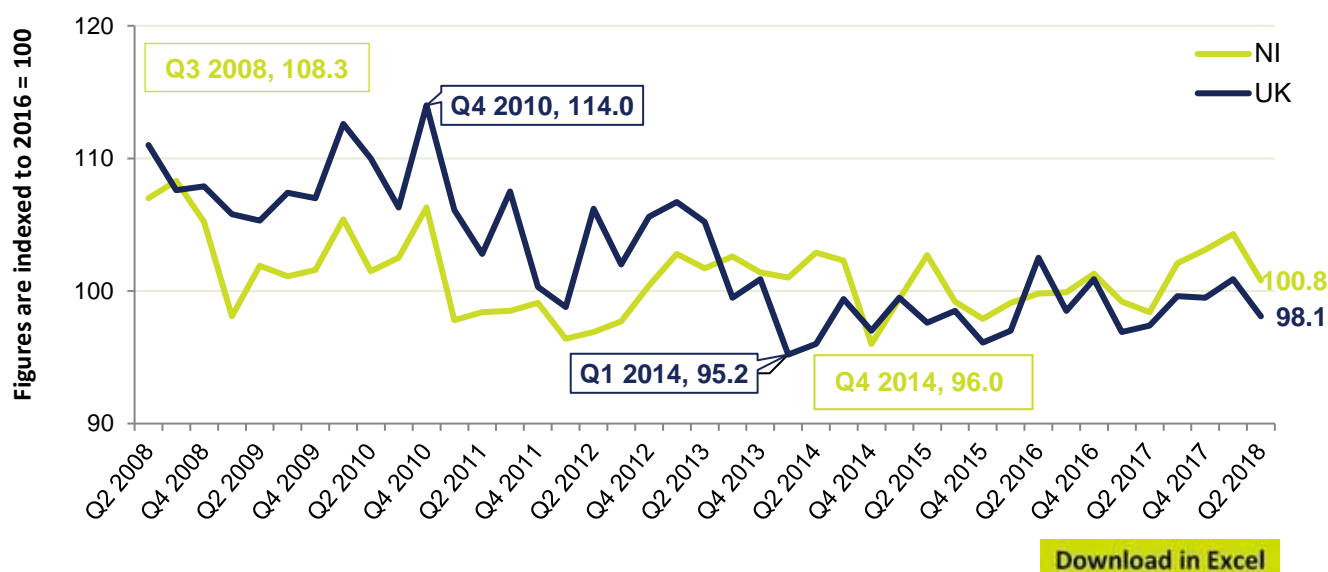
The seasonally adjusted index for Manufacturing shows that output increased over the quarter (1.3%), to the highest point reported since Quarter 2 2017. In comparison, the UK reported a decline of 0.9% over the quarter. Manufacturing output remains 7.5% below its highest point (Quarter 2 2008) over the past ten years. Output contracted by 0.8% over the year and by 5.4% on a rolling four quarters basis. This compares to the UK which reported growth of 1.4% over the year and 2.5% on a rolling four quarters basis. The NI index has recovered 11.5% from its lowest point recorded (Quarter 3 2009) within the past ten years. In comparison, UK Manufacturing output has recovered by 11.7% over the same period.

2.3 Electricity, gas, steam and air conditioning supply

Electricity, gas, steam and air conditioning supply (SIC07 Section D) (weight = 8.1% of IOP): This sector includes the activity of providing electric power, natural gas, steam, hot water and the like through a permanent infrastructure (network) of lines, mains and pipes. Also included is its distribution in industrial parks or residential buildings. Therefore, the operation of electric and gas utilities are included.

- The NI seasonally adjusted figures show a fall of 3.4% over the quarter, and increases of 2.5% over the year and 2.9% on a rolling four quarters basis.
- NI trend is observed to be homogeneous to UK which likewise reports a decrease in growth over the quarter (2.8%). However, NI is growing more than the UK when compared over the year and on a rolling four quarters basis (UK reported 0.7% and 1.1% respectively).
- NI estimates remain 6.9% below the peak recorded in Quarter 3 2008.
- The NI index observed to be 5.0% above its lowest point recorded (Quarter 4 2014) in the past ten years.

Figure 2.3 Electricity, gas, steam and air conditioning supply, NI & UK (Q2 2008 – Q2 2018)



Commentary

The seasonally adjusted index for Electricity, gas, steam and air conditioning supply shows that output fell over the quarter by 3.4% to its lowest level since Quarter 2 2017. Likewise, the UK also reported a decline in this sector (2.8%) over the quarter. NI output remains 6.9% below its highest point (Quarter 3 2008) over the past ten years. NI output increased by 2.5% over the year and by 2.9% on a rolling four quarters basis. This compares to the UK which reported growth of 0.7% and 1.1% respectively. The NI index remains 5.0% above the low point of the last ten years recorded in Quarter 4 2014 while the UK has recorded a rise of 1.1% over the same period.

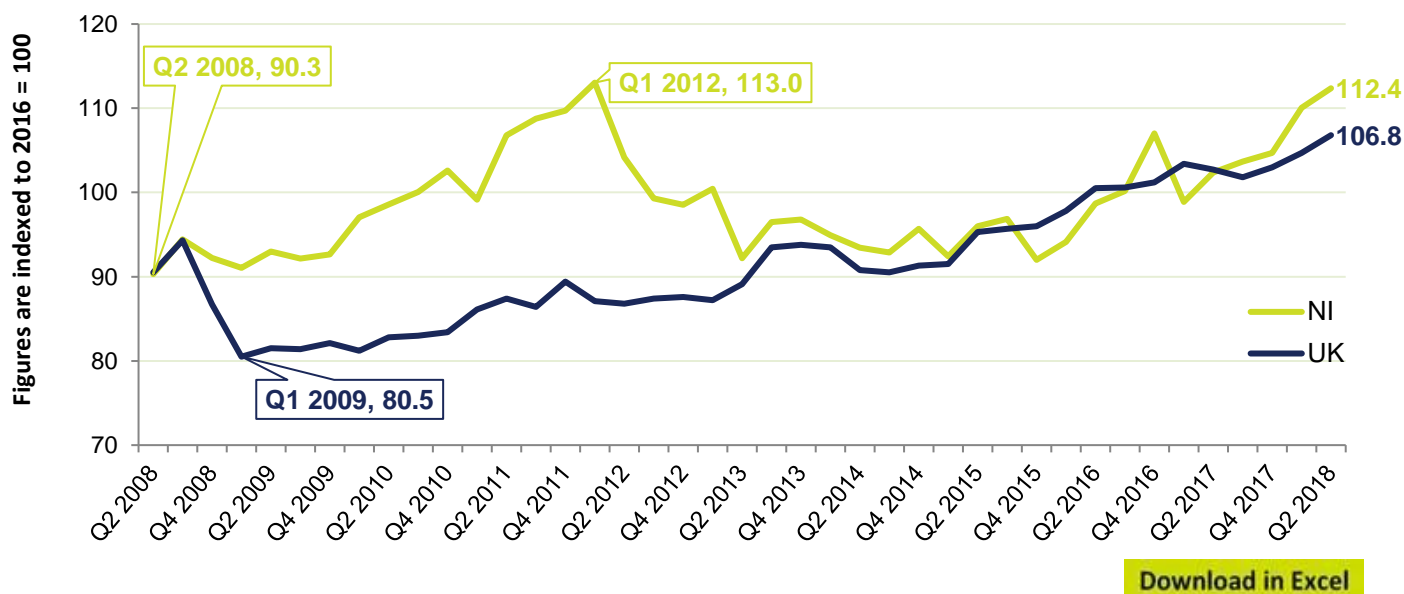
2.4 Water supply, sewerage and waste management (Inc recycling)

Water supply, sewerage, and waste management (Inc. recycling) (SIC07 Section E) (weight = 7.9% of IOP): This section covers activities related to the management (including collection, treatment and disposal) of various forms of waste, such as solid or non-solid industrial or household waste, as well as contaminated sites. Activities of water supply are also grouped in this section since they are often carried out in connection with, or by units also engaged in, the treatment of sewage.

Key findings

- The NI seasonally adjusted figures show an increase of 2.1% over the quarter, 9.8% over the year and 5.5% on a rolling four quarters basis.
- When compared to UK, a homogeneous growth trend is visible. The UK also reports growth of 2.0% over the quarter, 4.0% over the year and 2.1% on a rolling four quarters basis.
- NI output remains 0.6% below peak recorded in Quarter 1 2012.
- NI output was observed to be 24.4% above its lowest point recorded (Quarter 2 2008) in ten years.

Figure 2.4 Water supply, sewerage and waste management (Inc. recycling), NI & UK (Q2 2008 – Q2 2018)



Commentary

Figure 2.4 shows that NI output continues to follow a homogeneous growth trend when compared with the UK. In comparison, NI estimates higher growth over the quarter (2.1%), over the year (9.8%) and on a four rolling quarters basis (5.5%). The UK reported lower growth of 2.0%, 4.0% and 2.1% respectively.

The NI index is 0.6% below the peak recorded in Quarter 1 2012, with the UK reporting a series high. The NI index remains 24.4% above the low point of the last ten years recorded in Quarter 2 2008 while the UK has recorded a rise of 18.0% over the same period.

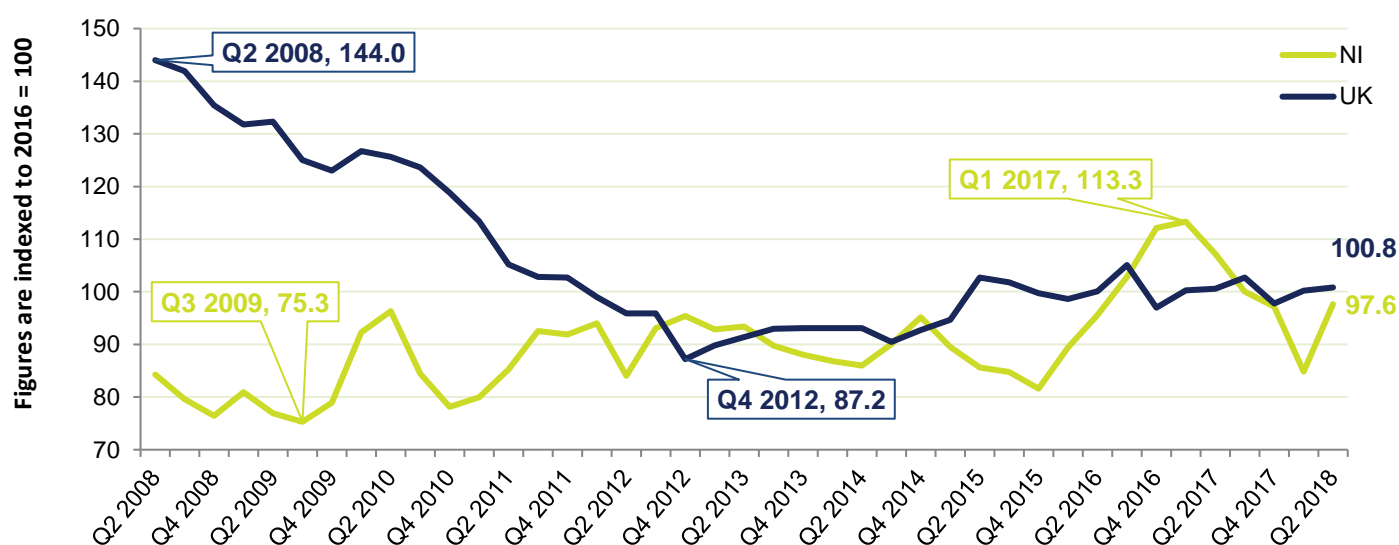
2.5 Mining and quarrying

Mining and quarrying (SIC07 Section B) (weight = 2.5% of IOP): This section covers the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining, etc.

Key findings

- The NI seasonally adjusted figures show a substantial increase of 15.1% over the quarter, a decrease of 8.9% over the year and a decrease of 12.8% on a rolling four quarters basis.
- The UK seasonally adjusted figures showed an increase of 0.6% over the quarter to Quarter 2 2018, an increase of 0.2% over the year and a decrease of 0.4% on a rolling four quarter basis.
- Growth is substantially higher for NI than the UK over the quarter.
- NI output is 13.8% below the highest level recorded (Quarter 1 2017) in ten years.
- NI output is 29.7% above the lowest reported level (Quarter 3 2009) in ten years.

Figure 2.5 Mining and quarrying output, NI & UK (Q2 2008 – Q2 2018)



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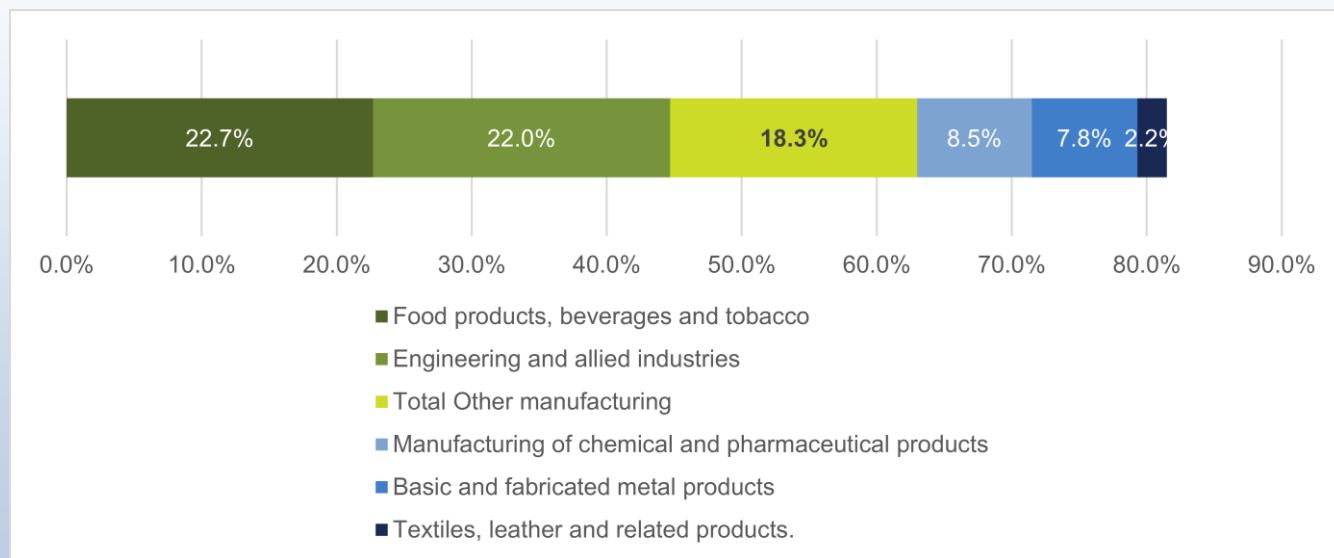
Commentary

Mining and quarrying reported a substantial quarterly growth for the second quarter of 2018 of 15.1% (Figure 2.5). This is larger than the UK which estimated lower growth of 0.6% over the quarter. NI output continues to remain 13.8% below its highest point recorded in Quarter 1 2017 over the ten year period Q2 2008 – Q2 2018. This compares to the UK which has grown 0.5% over the same period.

3 Manufacturing sub-sectors

Manufacturing sub-sectors: Manufacturing is comprised of six sub-sectors. Figure 3.1 shows the contribution of each to the Production sector. The six sub-sectors make up 81.5% of the Production sector.

Figure 3.1 Manufacturing sub-sectors



*Total Other includes Manufacture of wood, paper products & printing and Rubber, plastic products & non-metallic mineral products

3.1 Key findings

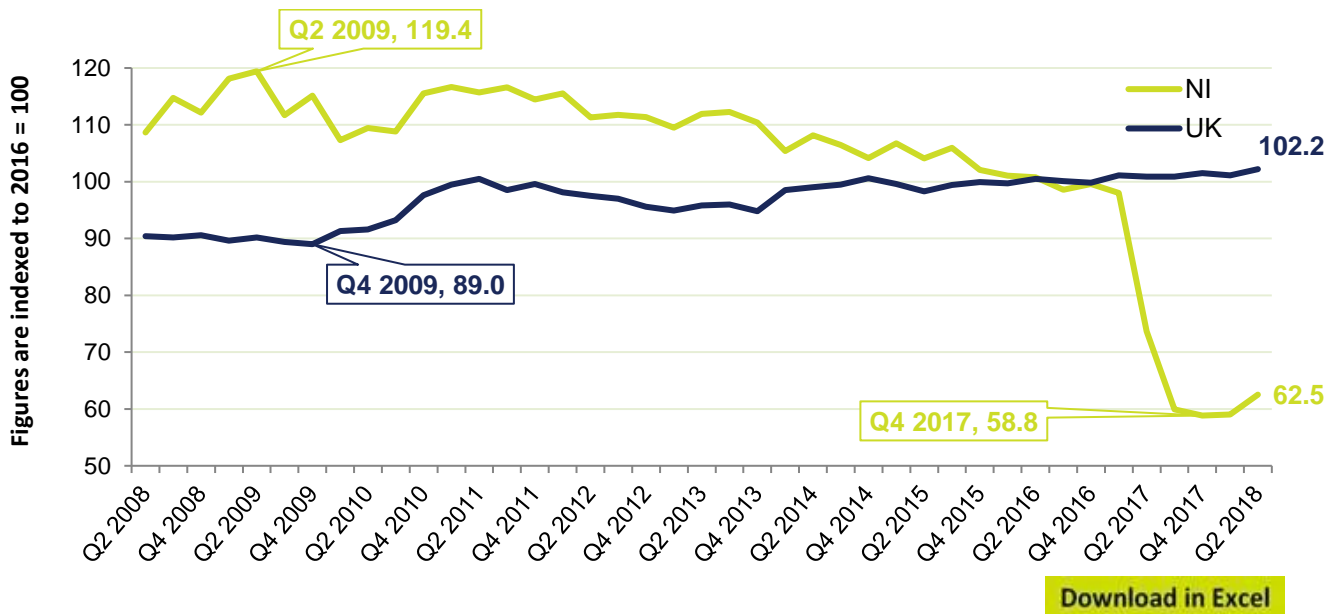
- The quarterly increase in Manufacturing output has largely been driven by Food products, beverages and tobacco (5.9%), Basic and fabricated metals (7.3%) and Total Other manufacturing (2.1%).
- Similarly, over the year the decrease in Manufacturing output is supported by Food products, beverages and tobacco (15.1%), Manufacturing of chemical and pharmaceutical products (6.1%) and Textiles, leather and related products (0.9%).

3.2 Food products, beverages and tobacco

Key findings

- Continued recovery from the previous quarter.
- Seasonally adjusted figures show an increase over the quarter of 5.9% and decreases of 15.1% over the year and 35.0% on a rolling four quarters basis.
- The UK increased 1.1% over the quarter, 1.3% over the year and 0.9% on a rolling four quarters basis.
- NI and UK have both grown over the quarter. However, NI has grown at a higher rate.
- NI output is estimated to be 47.6% below its peak (Quarter 2 2009).

Figure 3.2 Food products, beverages and tobacco, NI & UK (Q2 2008 – Q2 2018)



Commentary

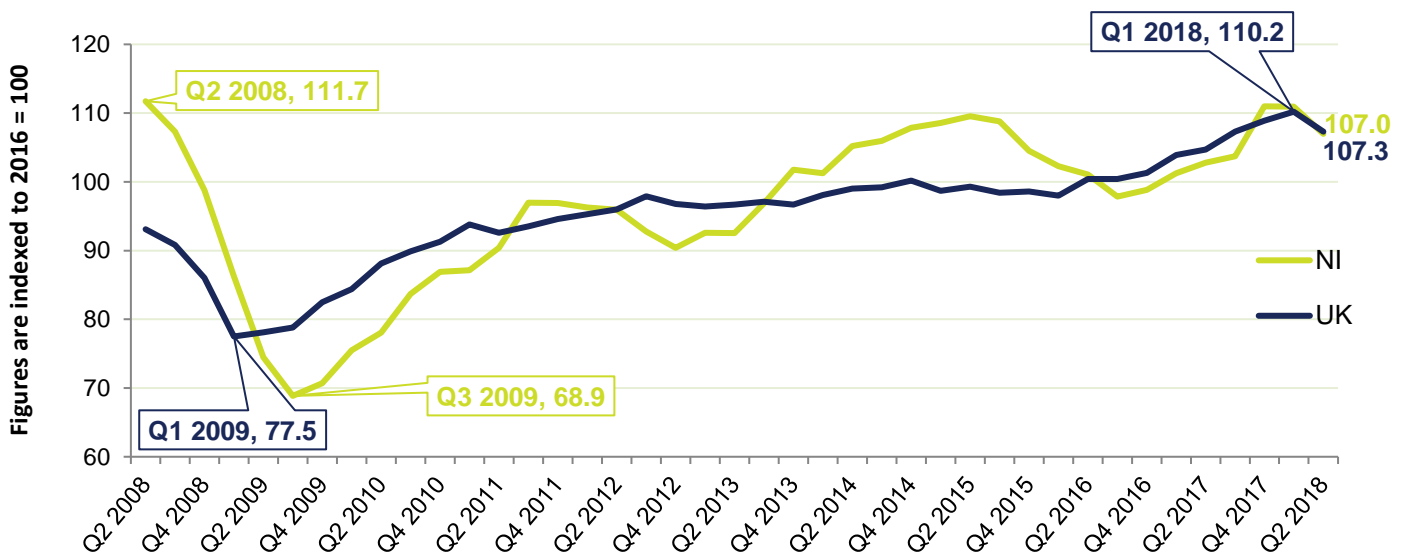
The seasonally adjusted index increased in real terms by 5.9% over the quarter, showing higher growth in comparison to the UK (1.1%). However, in the longer term, over the year and on a rolling four quarters basis, NI output declined by 15.1% and 35.0% respectively. This compares to divergent steady increases in output in the UK over the year (1.3%) and on a rolling four quarters basis (0.9%). The UK reported a series high for the ten year period in Quarter 2 2018. NI output is estimated to be 47.6% below its peak of Quarter 2 2009.

3.3 Engineering and allied industries

Key findings

- NI seasonally adjusted figures show a fall over the quarter of 3.6% and increases over the year (4.1%) and on a rolling four quarters basis (8.0%).
- The UK decreased 2.6% over the quarter, and increased 2.5% over the year and 5.7% on a rolling four quarters basis.
- Consistent with the UK trend, the NI index has declined over the quarter.
- NI output is estimated to be 4.3% below its peak (Quarter 2 2008).
- NI output is 55.3% above its lowest recorded level (Quarter 3 2009) in ten years

Figure 3.3 Engineering and allied industries NI & UK (Q1 2008 – Q2 2018)



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Commentary

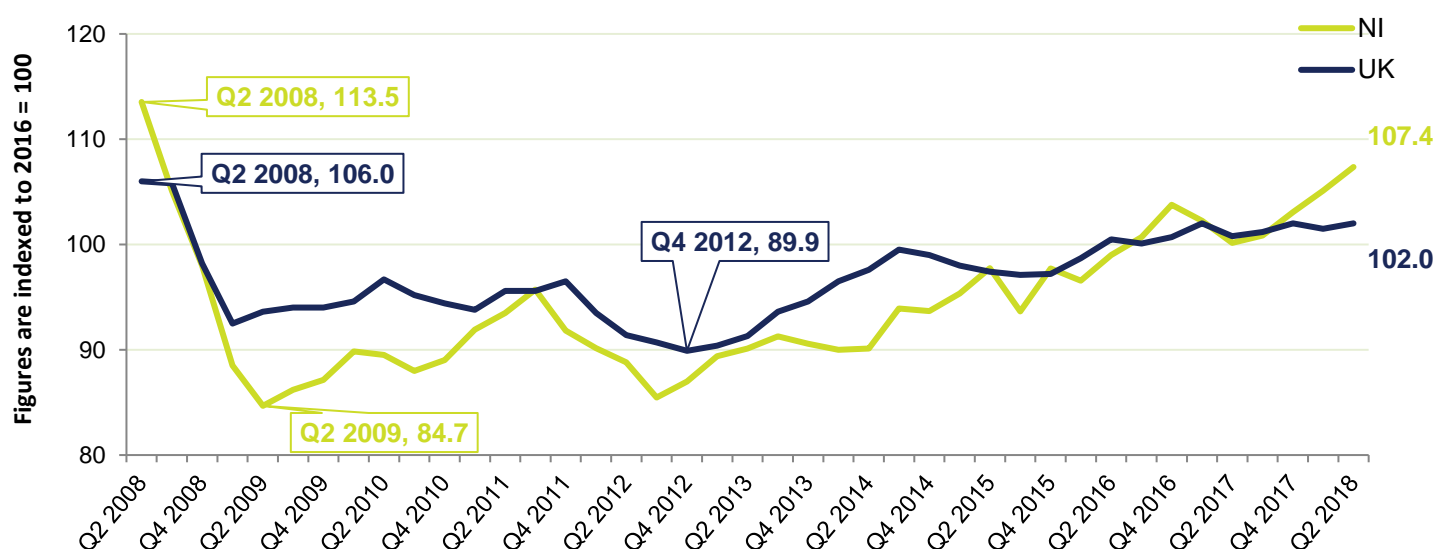
NI output declined over the quarter by 3.6%, reporting a slightly larger decline than the UK (2.6%). Over the past ten years, the NI index is estimated to be 4.3% below its peak recorded in Quarter 2 2008. The NI index remains 55.3% above its lowest point recorded in Quarter 3 2009. In comparison the UK has recovered 36.2% over the same period.

3.4 Total Other Manufacturing

Key findings

- Seasonally adjusted figures show increases over the quarter of 2.1%, 7.2% over the year and 2.3% on a rolling four quarters basis.
- The UK increased 0.5% over the quarter, 1.2% over the year and 0.8% on a rolling four quarters basis.
- The NI index is growing at a higher rate than the UK index.
- NI output is estimated to be 5.4% below its highest point recorded (Quarter 2 2008) in the last ten years.
- NI output is estimated to be 26.8% above its lowest point recorded (Quarter 2 2009) in the last ten years.

Figure 3.4 Total Other manufacturing, NI & UK (Q2 2008 – Q2 2018)



[Download in Excel](#)

Commentary

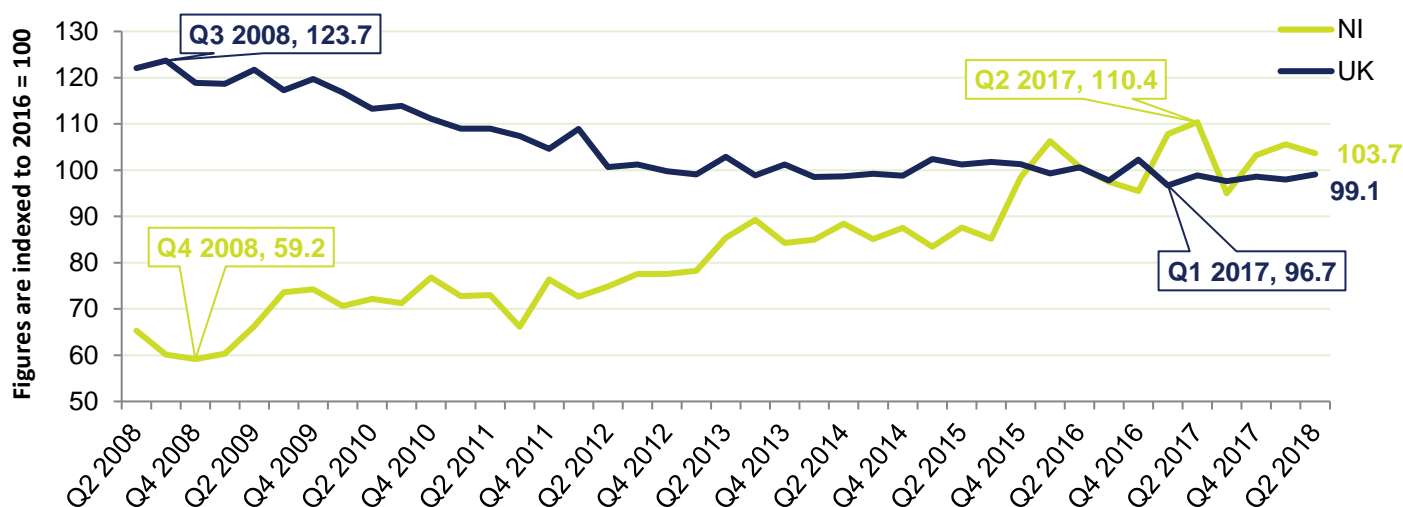
Seasonally adjusted output in NI continues to increase over the quarter (2.1%) for the fourth successive quarter. This compares to the UK which reported a lower increase over the quarter (0.5%). Figure 3.4 shows NI output is growing at a higher rate than the UK. NI output increased over the year (7.2%) and on a rolling four quarters basis (2.3%). In contrast, UK output increased only 1.2% over the year and 0.8% on a rolling four quarters basis. The NI index has recovered 26.8% since its lowest point recorded (Quarter 2, 2009) within the last ten years. However, it remains 5.4% below the highest point recorded (Quarter 2 2008) in the last ten years.

3.5 Manufacturing of chemical and pharmaceutical products¹

Key findings

- The NI non-seasonally adjusted figures show decreases of 1.8% over the quarter, 6.1% over the year and 0.9% on a rolling four quarters basis.
- The UK figures show an increase of 1.1% over the quarter, an increase of 0.2% over the year and a decrease of 0.6% on a rolling four quarters basis.
- NI output is following a divergent trend in comparison to the UK.
- NI output is 6.1% below series high (Quarter 2 2017).
- NI output recovered by 75.3% from series low reported (Quarter 4 2008) within the past ten years.

Figure 3.5 Manufacturing of chemical and pharmaceutical products, NI & UK (Q2 2008 – Q2 2018)



[Download in Excel](#)

Commentary

Non-seasonally adjusted data shows that the NI index of Manufacturing of chemical and pharmaceutical products, decreased by 1.8% over the quarter, by 6.1% over the year, and 0.9% on a rolling four quarters basis. On the contrary, the UK Manufacturing of chemical and pharmaceutical products sector increased by 1.1% over the quarter and by 0.2% over the year. The NI index is reported to remain 6.1% below Quarter 2 2017, which was the series high over the past ten years.

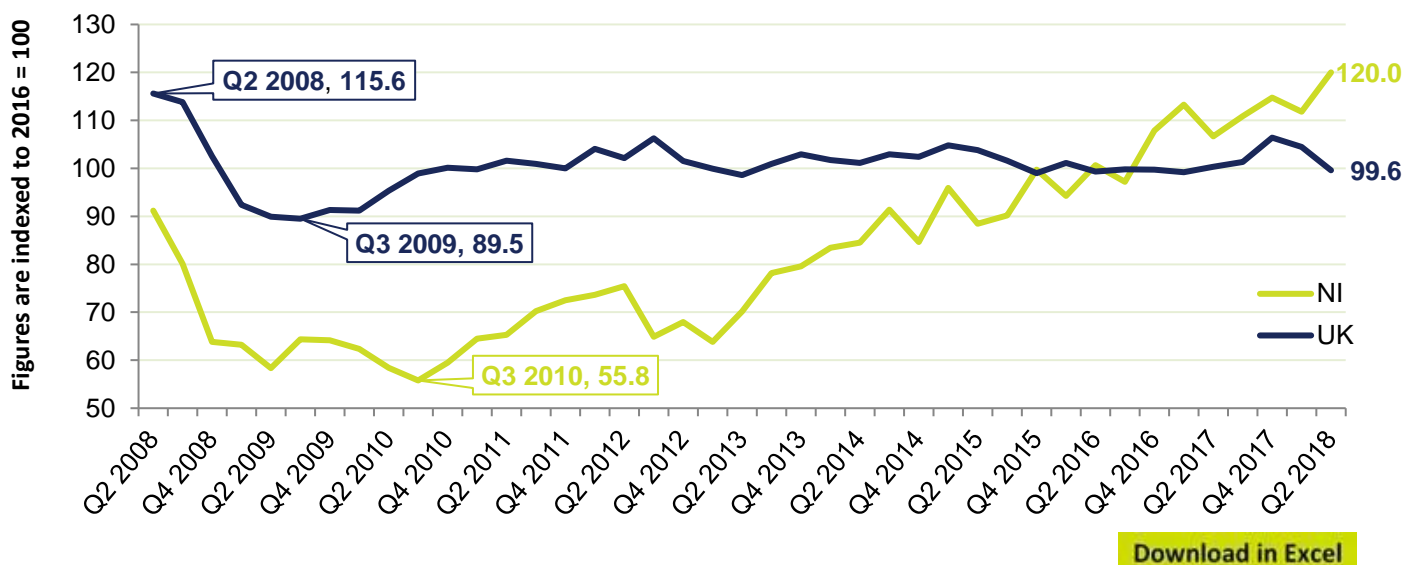
¹ The Manufacturing of chemical and pharmaceutical products sub-sector has not been seasonally adjusted.
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3.6 Basic and fabricated metal products

Key findings:

- The NI seasonally adjusted figures show increases of 7.3% over the quarter, 12.5% over the year and 7.6% on a rolling four quarters basis.
- UK seasonally adjusted figures show a decrease of 4.7% over the quarter, a decrease of 0.7% over the year and an increase of 3.2% on a rolling four quarters basis.
- NI output is observed to be following a divergent trend to the UK.
- NI output has reached its highest level in the series.
- NI output recovered 115.1% from its lowest point recorded in ten years (Quarter 3 2010).

Figure 3.6 Basic and fabricated metal products, NI & UK (Q2 2008 - Q2 2018)



Commentary

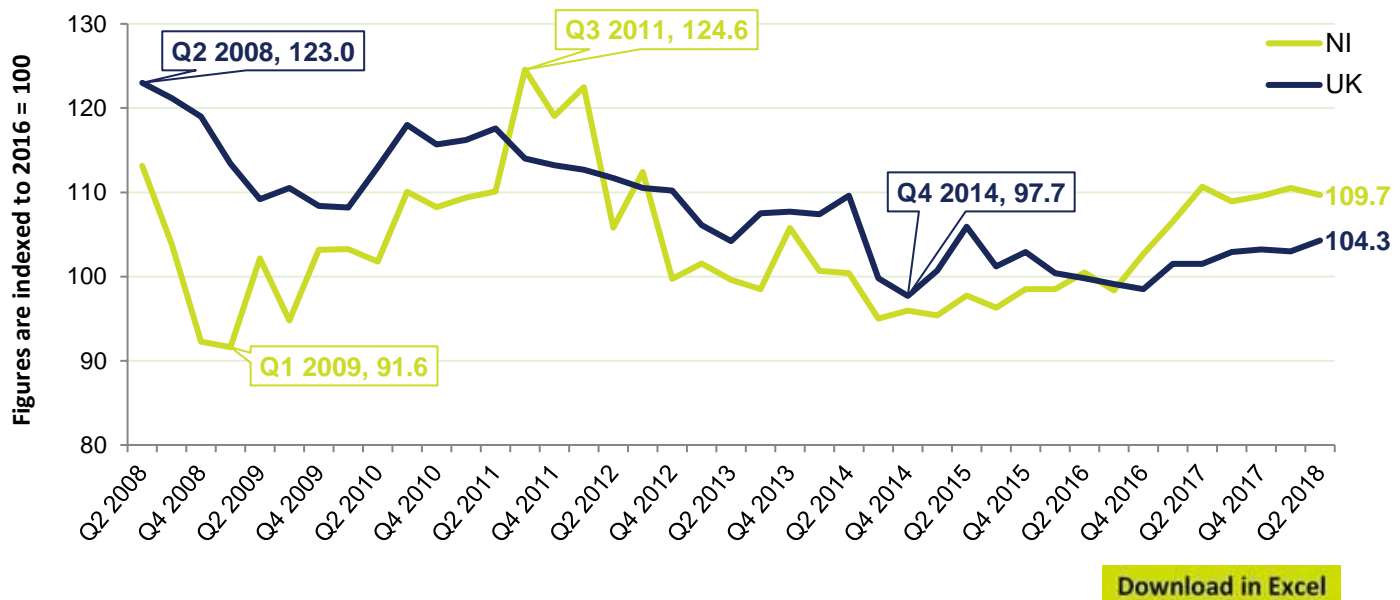
Seasonally adjusted figures show that NI output for this sector increased 7.3% over the quarter, 12.5% over the year and 7.6% on a rolling four quarters basis. This compares to UK output which saw a decline over the quarter (4.7%) and year (0.7%) with an increase of 3.2% observed on a rolling four quarters basis. As shown by Figure 3.6 NI output is divergent to the UK, with increasing output. NI reached a series low in Quarter 3 2010. The NI index is now 115.1% above this level and the UK has grown 0.7% over the same period.

3.7 Textiles, leather and related products

Key findings

- The NI seasonally adjusted figures show decreases of 0.8% over the quarter and 0.9% over the year, and an increase of 4.9% on a rolling four quarters basis.
- UK seasonally adjusted figures show an increase of 1.3% over the quarter, 2.8% over the year and 3.2% on a rolling four quarters basis.
- NI output was observed to be following a divergent downward trend in comparison to the UK.
- NI output is 12.0% below its highest point recorded in ten years (Quarter 3 2011).
- NI output recovered 19.7% from its lowest point recorded in ten years (Quarter 1 2009).

Figure 3.7 Textiles, leather and related products, NI & UK (Q2 2008 - Q2 2018)



Commentary

Seasonally adjusted figures show that NI output for this sector fell by 0.8% over the quarter and 0.9% over the year, and increased 4.9% on a rolling four quarters basis. This is divergent to the UK which saw output increase by 1.3% over the quarter, 2.8% over the year and 3.2% on a rolling four quarters basis. NI reached a series low in Quarter 1 2009. The NI index is now 19.7% above this level and the UK fell 8.0% over the same period.

4 Market sector analysis

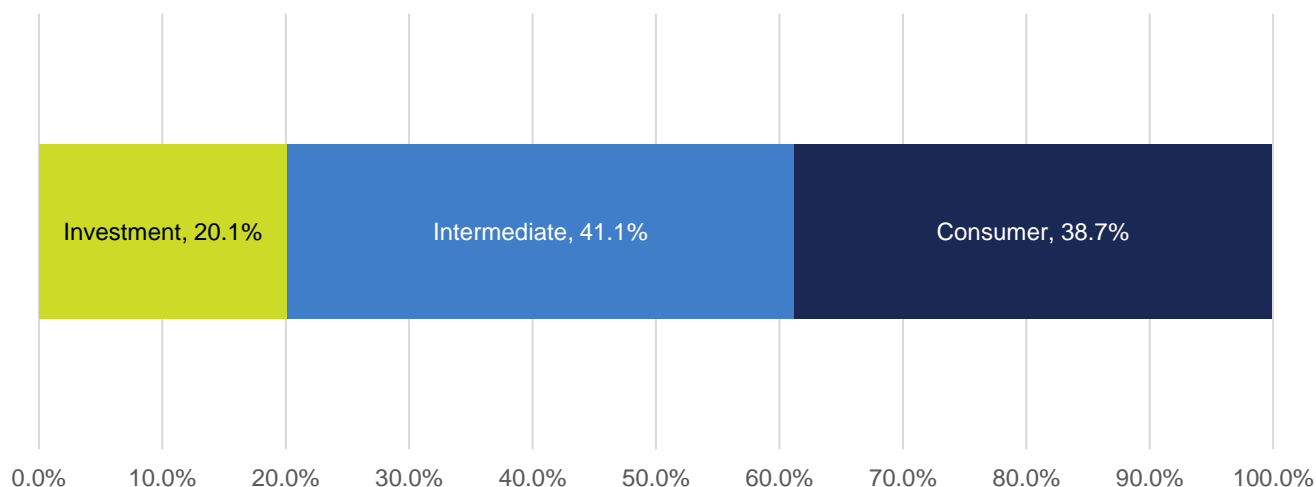
Market sector analysis considers how Investment, Intermediate and Consumer goods² are driving change within the NI production sector.

Investment goods (Weight = 20.1%): Investment goods (capital goods) are goods which enable production. For example, plant, equipment and inventories used to produce goods for consumption. Investment increases if business wish to expand or upgrade existing equipment.

Intermediate goods (Weight = 41.1%): Intermediate goods are those purchased by the industry as inputs into the final production of goods. This category would include materials (for example, cement, rubber, plastic, chemicals and electronics) which will ultimately be used to produce a good for consumption.

Consumer goods (Weight = 38.7%): Consumer goods are the final goods produced by industry which are intended for purchase by private consumers. These goods are consumed by market rather than used in the production of another good and are therefore closely linked to consumer demand and the factors which influence this.

Figure 4.1 Market sector split by goods

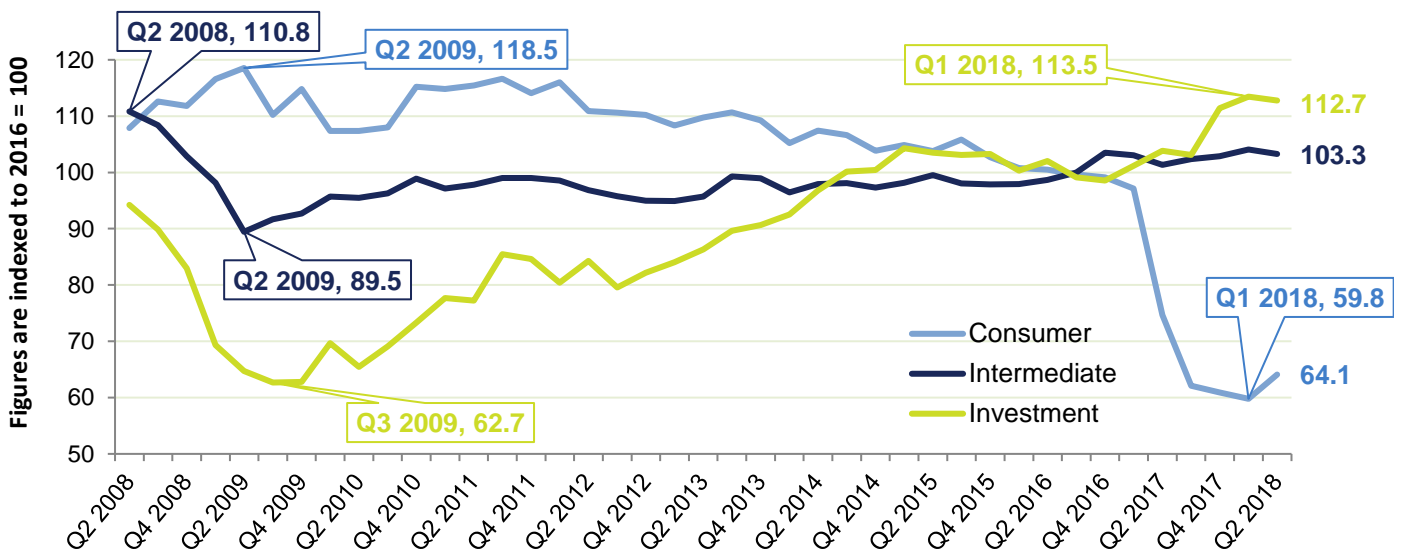


² Please be aware that these categories are for illustrative purposes as there can be overlap where manufacturer goods could be used as capital to produce another good but will also be used for consumption (for example, motor vehicles).

Key findings

- Consumer goods have increased over the quarter (7.2%), but decreased over the year (14.2%) and on a rolling four quarters basis (33.4%).
- Intermediate goods have decreased over the quarter (0.7%), but increased over the year (1.9%) and on a rolling four quarters basis (1.2%).
- Investment goods have decreased over the quarter (0.6%), but increased over the year (8.6%) and on a rolling four quarters basis (9.4%).
- Consumer goods are reported to be 45.9% below the highest point (Quarter 2 2009) and 7.2% above the lowest point (Quarter 1 2018).
- Intermediate goods are reported to be 6.8% below the highest point recorded (Quarter 2 2008) and 15.5% above the lowest point (Quarter 2, 2009).
- Investment goods are reported to be 0.6% below the peak (Quarter 1 2018) and are estimated to be 79.9% above the lowest point recorded in Quarter 3 2009.

Figure 4.2 NI Market sector goods



[Download in Excel](#)

Commentary

Figure 4.2 shows when comparing all three indices, only consumer goods are following a divergent trend. Consumer goods have recovered 7.2% since reaching a series low the previous quarter. They have decreased 14.2% over the year and 33.4% on a rolling four quarters basis.

Intermediate and Investment goods decreased over the quarter (0.7% and 0.6% respectively). Investment goods are estimated to be 0.6% below peak (Quarter 1 2018), whilst Intermediate goods are observed to also be below their peak (6.8%) from Quarter 2 2008. Investment goods are now 79.9% above their low point in Quarter 3 2009. Intermediate goods remain 15.5% above the minimum level recorded in Quarter 2 2009.

[For annual data please see Table 6.12.](#)

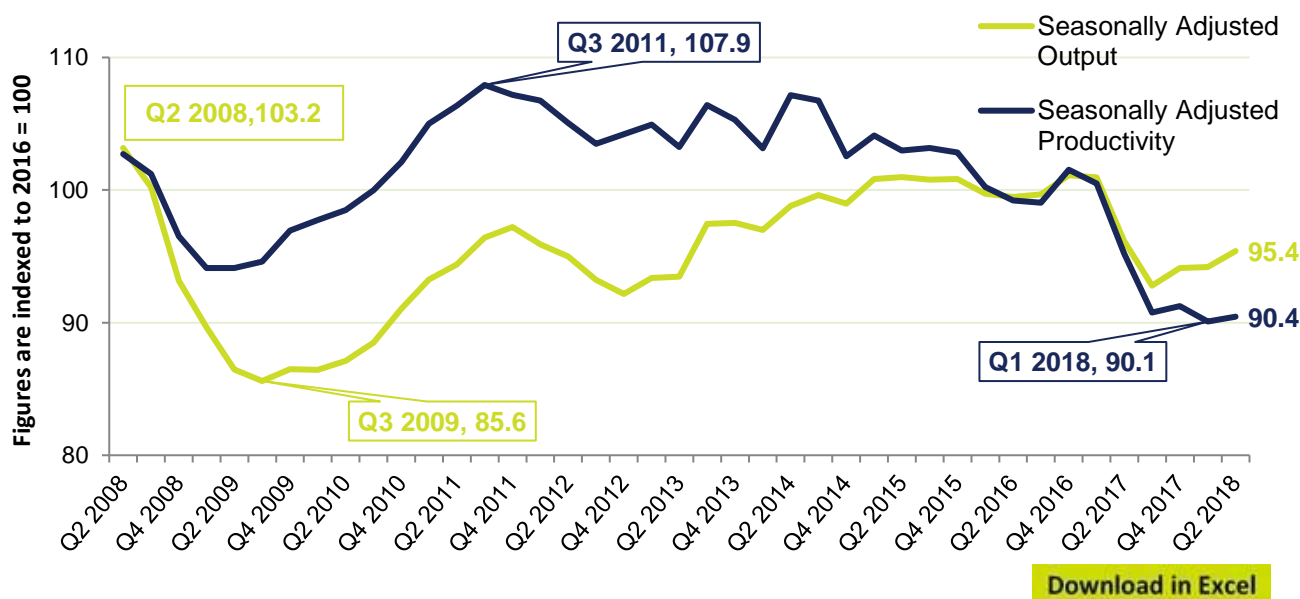
5 NI Index of manufacturing productivity

Index of Manufacturing Productivity (IOMP): IOMP is a measure of efficiency of labour hours in producing output for the NI Production industry. IOMP is seasonally adjusted to provide a measure of the number of units of output produced per person per paid hour. The index includes seasonally adjusted employees in employment, the seasonally adjusted Manufacturing index and average weekly hours (based on hours worked for full-time adult manufacturing workers, including overtime, from the Annual Survey of Hours and Earnings).

Key findings

- NI seasonally adjusted figures show an increase in productivity of 0.4% over the quarter, and decreases of 5.0% over the year and 8.5% on a rolling four quarters basis.
- The most notable decrease is observed on a rolling four quarters basis (8.5%).
- Consistent with the trends in output, productivity has shown an increase over the quarter.
- Manufacturing productivity remains 16.2% below its highest recorded level in Quarter 3 2011.

Figure 5.1 NI Index of manufacturing productivity



Commentary

Manufacturing productivity recovered over the quarter (0.4%), but fell over the year (5.0%) and on a rolling four quarters basis (8.5%). This is consistent with the upward trend in output over the quarter. Moreover, productivity is estimated to be 16.2% below the series high reported during Quarter 3 2011.

Recently published Quarterly Employment Survey (QES) seasonally adjusted figures for June 2018 reported a rise of 0.9% over the quarter in employee jobs in the Manufacturing sector and of 4.5% over the year.

[For historical average annual figures please see Table 6.14.](#)

6 Background notes

Background

The NI IOP has been produced since 1949 and figures are available in the current format back to 2005. It is published quarterly and is designed to provide a general measure of changes in the output of the production industries in NI. (This is defined as Standard Industrial Classification 2007 sections B, C, D and E.) In 2016 these industries accounted for approximately 18% of regional GVA.

Please note that in publications up until Quarter 3 2017 indices were calculated using income based GVA for weighting purposes. From Quarter 4 2017 however, weighting is carried out using the balanced GVA approach – this balances the income and production approaches to measuring the economy into a single estimate. For more information please see [Regional GVA information](#).

Index numbers

An index number is a convenient form of expressing a series in a way that makes it easier to see changes in that series. The numbers in the series are expressed relatively, with one number in that series chosen to be the 'base' (usually expressed as 100) and other numbers being measured relative to that base. Index numbers have the advantage that they allow different types of data to be combined on a consistent basis, e.g. deflated current price data with volume data. The aim of the IOP is to provide a reliable indicator of short-term changes in the output of the production sector. Index numbers are a very good way of communicating this message. For example, the IOP Quarter 2 2018 value of 97.2 means that the level of output then was 2.8% lower than in 2016 which had a base year value of 100. The NI IOP is a Laspeyres volume index. The UK economic accounts are based on the European System of Accounts (ESA), which in turn is based on the UN System of Accounts (SNA). The ESA-preferred type of output indicator is one that measures deflated gross output (or turnover) for an industry. These use an approximate price change estimator to remove the effects of inflation. For this reason, we and the ONS, use a Laspeyres volume index (as opposed to Paasche, Lowe or Fisher indices). The ONS paper on the [Methodology of the Monthly Index of Services \(Annex A: Mathematical Formulation of the Index of Services\)](#) explains Index numbers theory.

Index sample

The IOP sample was refreshed for Quarter 1 2014 and was drawn on a SIC07 basis. The sample was boosted from around 650 businesses and it is now approximately 1,100 companies. Due, in part, to the significant number of companies which fall into the census element, more than 60% of businesses in the new sample were also in the old sample. As a statutory survey the response rate is 78% (on average). The sample of production industries is selected directly from the Inter Departmental Business Register (IDBR), by stratifying companies by industry and company size. The sample consists of a census of dominant companies and a Neyman stratified random sample of the remaining companies.

The census element consists of all companies employing 40 or more employees and those employing 0 to 39 employees and having a turnover of £10 million or more. This sample has been designed to give sufficiently accurate results, yet keep the total costs to businesses to a minimum.

Questionnaires were issued to both the new and existing businesses on each sample, for three quarters, as a means to calculate a link factor between the old sample (up to and including Quarter 4 2013) and the new sample (from Quarter 1 2014 onwards). With advice from Office for National Statistics methodologists, as the result of a successful Quality Improvement Fund, a methodology has been developed in order to integrate the new samples without making significant changes to the back series data, thus giving a meaningful index.

Data collection, validation and index calculation

Survey forms are issued quarterly, immediately after the period to which they relate. For example, forms are issued in April asking for information relating to January to March. Since the beginning of 2016, a Quarterly Business Survey (QBS) form was issued to all businesses who previously received an IOP form and/or a QES form and companies are now asked to provide employment and/or turnover information at the same time. This combined survey form, coupled with the roll-out of an 'eForm' (designed to collect data electronically) is intended to reduce the burden to businesses currently receiving two separate forms at different times.

Historically a number of companies provided volume information rather than turnover data (e.g. litres of a product rather than the turnover value of the product). From Quarter 2, 2010 these companies were asked to also provide turnover data and from Quarter 2 2011 the IOP estimates have solely been based on turnover. In response to user demand information is also collected on the value of exports. This will be used to produce a quarterly index in due course once a sufficient back series has been established and development work has been undertaken.

Data validation is carried out ensuring that data falls within the expected limits, contacting the company where appropriate for clarification.

The overall IOP is calculated by weighting together industry level indices using relative shares of Accounts Gross Value Added (GVA) data from the most recent Regional Accounts, which is currently 2016.

The IOP relative weights used to produce the aggregated industries are derived from the Regional GVA estimate, published annually by ONS. Figures within this publication are weighted using 2016 GVA which became available on 20th December 2017.

For practically all series, the value of sales deflated to allow for price changes, is used as the indicator. In the remaining cases, changes in the volume of production or the number of employees are used as a proxy measure.

From Quarter 2 2014, the individual series have been seasonally adjusted using X-13 ARIMA SEATS, which introduces improvements to the models used for seasonal adjustment. Also, during the seasonal adjustment review in December 2015 (from Quarter 3 2015) the smoothing methodology, applied to companies with particularly volatile returns, has now been removed for the remaining few companies. The main sectors affected are the water supply, sewerage, and waste management (Inc. recycling) and mining and quarrying along with some of the individual manufacturing subsectors.

Further information on the methodology and impact of the seasonal adjustment changes can be found in the methodological note found [here](#).

It is also possible to aggregate all individual series to give indices by final use of goods produced. This is known as a market sector analysis and estimates are given in Section 5 of this bulletin. It distinguishes between seasonally adjusted consumer, seasonally adjusted investment and seasonally adjusted intermediate goods. The latter are described as intermediate because they include materials used to produce goods for consumption.

The productivity index provides a measure of the number of units of output produced per person per paid hour. The productivity index is based on the seasonally adjusted manufacturing index, seasonally adjusted employees in employment and average weekly hours (based on hours worked for full-time adult manufacturing workers including overtime from the Annual Survey of Hours and Earnings). An index of total employee hours is calculated based on the number of employees in employment and average weekly hours. The seasonally adjusted index of manufacturing is divided by the index of total employee hours to produce the Index of Productivity.

The seasonally adjusted NI IOP is annually chain-linked (chain-linking involves the linking of growth estimates between different periods in order to produce a continuous time series) using GVA estimates derived from regional accounts using the fourth quarter of the preceding year as the link period. Inaccuracies caused by the assumption of a stable relationship between GVA and turnover are reduced using this methodology. When annual weights are used the assumption only has to be maintained from one year to the next year. A paper on annual chain-linking from ONS is available [here](#).

The standard method for linking two series (for example one based on a SIC03 sample and one based on a SIC07 sample) is to calculate the index under the old and new circumstances over some link period, and then apply the growth of the subsequent new series to the old series. As the relationship of both samples to the IDBR was known, the IDBR was used to provide the link period. Thus, the ratio of the IDBR turnover for Quarter 1 2011 and Quarter 2 2011 is known. We have the Quarter 2 2011 value (SIC07) and the Quarter 1 2011 value (converted from SIC03 to SIC07). We can, therefore, create the following link factor:

$$\text{link factor} = \frac{(\text{Q2 2011 sample estimate} * \text{IDBR Q1 2011 value})}{(\text{Q1 2011 sample estimate} * \text{IDBR Q2 2011 value})}$$

This can then be applied to the converted back series, thus retaining the previous growth rates.

For Quarter 1 2014 and Quarter 2 2014, questionnaires were issued to companies in both the existing sample and the new sample, thus allowing a link factor to be calculated based on the average percentage change between the two. This link factor was then applied to each of the quarterly turnover back series (grossed & deflated), in order to give a series of the same magnitude as the new sample series (from Quarter 1 2014 onwards).

Deflation

All series, unless otherwise quoted, are measured at a constant market price (2016 = 100). Deflators adjust the value series to take out the effect of price change to give the volume series. The deflators used in this document were sent directly by ONS on 4th September 2018. Details on the changes to the ONS deflators methodology can be found [here](#).

Seasonal adjustment

The index numbers in this statistical bulletin are seasonally adjusted unless otherwise stated, following the annual seasonal adjustment review which was carried out in December 2015. This aids interpretation by removing annually recurring fluctuations, for example due to holidays or other regular seasonal patterns. All IOP time series are checked on an annual basis using X-13 ARIMA SEATS for evidence of seasonality, and those series where seasonality is detected are adjusted using X-13 ARIMA SEATS in order to obtain a clear picture of the general trend. Unadjusted data are also available.

The figures presented in this publication are calculated using the X-13 ARIMA SEATS method of seasonal adjustment. ONS have provided a [guide to seasonal adjustment with X-12 ARIMA](#), as an updated guide for X-13 ARIMA SEATS is currently being finalised by ONS.

Quality reporting/Planned future revisions

One indicator of the reliability of the figures in this bulletin can be obtained by monitoring the size of revisions. The IOP revisions policy can be found [here](#).

Summary quality report

A summary quality report for this publication can be found on the [IOP Quality and Revisions](#) page of the website.

Publication of results on a SIC07 basis

A SIC was first introduced into the UK in 1948 for use in classifying business establishments by the type of economic activity in which they are engaged. The UK is required by European legislation to revise the SIC in parallel with NACE (the statistical classification of economic activities in the European Communities) so that both systems are identical down to and including the four digit class level. More information on SIC07 can be found [here](#) and [here](#).

Status of figures in current bulletin

Results are published on a SIC07 basis and in line with ONS, the base year of the NI IOP has been moved to 2016.

All figures are published to one decimal place. Figures for annual averages and percentage changes over the previous quarter and year are based on unrounded figures and may not agree with the published constituent parts.

Results, particularly for the latest quarter, are provisional and are subject to revision as more up to date information becomes available.

The overall IOP index has been produced using X-13 ARIMA SEATS seasonal adjustment. Some of the sectors and sub-sectors have also been seasonally adjusted, and those can be identified throughout the bulletin.

Comparisons between the IOP and the Annual Business Inquiry (ABI) may not necessarily match because of definitional and coverage differences.

Publications policy

All Economic and Labour Market Statistics (ELMS) publications are available to download free of charge from the [ELMS section](#) of the NISRA website.

The IOP bulletin and tables from the current publication, which includes all the data from the start of the series in 2005, are available in Excel and Open Document format to download free of charge from the [IOP section](#) of the NISRA website.

The ELMS publication schedule is available [here](#).

Next publication

The next bulletin is due to be published on 13th December 2018.

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