

# Northern Ireland Quarterly Index of Production Background Notes

Theme: Economy

Frequency: Quarterly

Geographical Area: Northern Ireland

## Introduction

The quarterly Index of Production (IOP) provides a timely indicator of growth in the output of the production industries in Northern Ireland (NI). IOP indices, along with published quarterly data and unpublished agricultural output data, are used to generate the [Northern Ireland Composite Economic Index \(NICEI\)](#). The NICEI is an experimental quarterly measure of economic activity in NI.

In line with guidance detailed in the [UK National Accounts, The Blue Book: 2023](#) (published on 31 October 2023), figures in the IOP publication are weighted using the revised Northern Ireland 2019 GVA, with the base year remaining at 2019 for a third consecutive year. This is to account for any atypical movements in the series in 2020 as a result of the coronavirus (COVID-19) pandemic.

Output estimates are calculated from the IOP aspect of the Quarterly Business Survey (QBS). The IOP has a sample size of approximately 1,200 covering all production businesses with 40 or more employees and a representative sample of smaller businesses.

## Context

The IOP is an important short-term measure of change in the output of the production sector of the economy. The contents of the 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 on the NISRA website.

The Department for the Economy (DfE) [Economic Commentary](#) 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](#) dashboard on 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 SIC 2003 (SIC03) basis and have been converted to approximate the SIC07 coverage. Volatility can arise when businesses inform NISRA of SIC code changes via business surveys, the Office of National Statistics (ONS) or HM Revenue & Customs (HMRC). This new information helps to improve the industry estimates of services output but can add volatility to quarterly and annual changes.

This document provides information on the methodology used to produce the IOP statistics as well as information on the quality and accuracy of the data.

The IOP bulletin contains results for the production sector as a whole, for Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply, sewerage and waste management (Inc. recycling) and Mining and quarrying sectors. All production sector series are seasonally adjusted on a 2019 = 100 basis using X-13 ARIMA SEATS.

Comparative UK data, produced by the ONS, are presented where these are available. The [latest UK IOP results](#) published on the ONS website.

The IOP publication provides three measures of growth for all indices.

1. **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. **Year-on-year change** compares the current quarter with the same quarter one year ago; and
3. **Rolling four quarter change** compares the most recent twelve months with the twelve months before. This comparison is useful for identifying changes in output over a longer time period than the other two approaches.

## Output

Turnover which is the value of total sales generated from all NI based activity, excluding VAT. Turnover is rounded to the nearest thousand and is then grossed and deflated. This turnover is then converted into an index value which 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, in this case the average of the turnover in 2019 chosen to be the current 'base' (expressed as 100) and other turnover values being measured relative to this base.

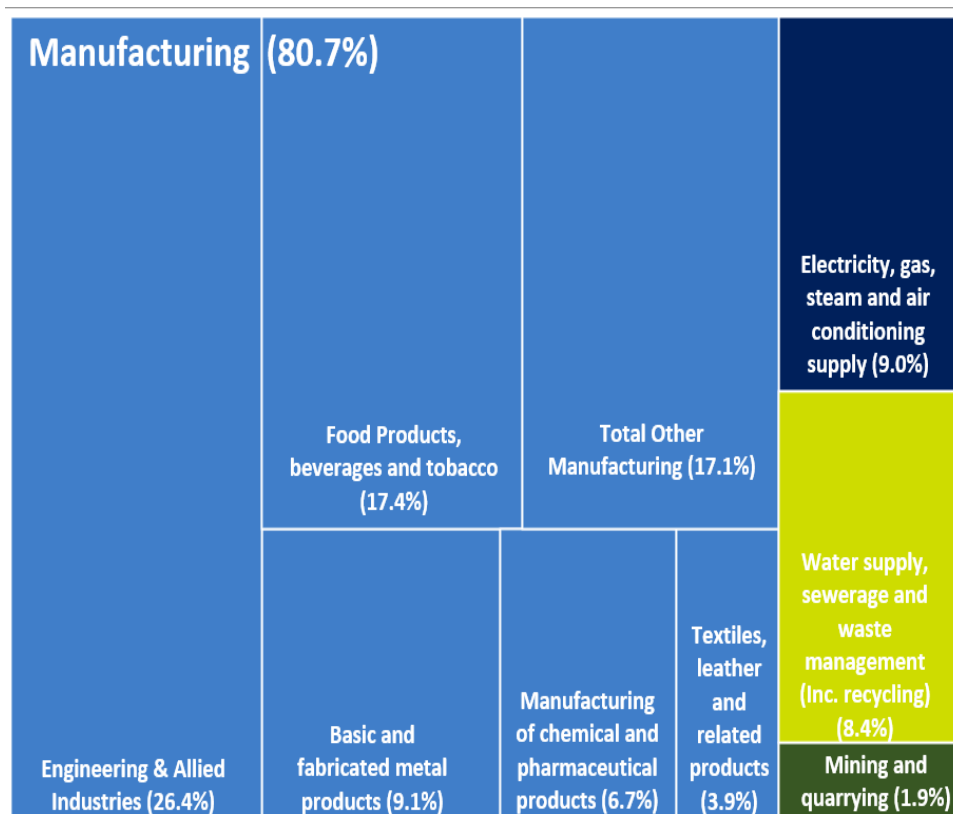
## Revisions

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. There can also be changes made to the deflators provided by ONS which may impact the entire series. A revisable period of the preceding four quarters is applied for late responses for IOP census businesses. Volatility also arises when businesses inform NISRA of SIC code changes via business surveys, ONS or HMRC. This new information helps to improve the estimates of growth each quarter but also adds volatility to quarterly and annual changes. Only rarely are there avoidable 'errors', such as human or system failures, and such mistakes are made quite clear when they do occur.

## IOP Structure

The Production sector is dominated by Manufacturing, which accounts for approximately 80.7% of total production Gross Value Added (GVA) at 2019 prices.

**Figure 1 IOP sector split (based on 2019 GVA)<sup>1</sup>**



## Gross Value Added (GVA)

Weighting is carried out using the balanced GVA approach which balances the income and production approaches to measuring the economy into a single estimate. For more information please see [Regional GVA information](#). In line with guidance from the [UK National Accounts Blue Book 2022](#), published October 2022, figures in the IOP publication are weighted using the latest revised 2019 GVA which became available on 25 April 2023.

## Deflation

All series are measured at a constant market price (2019 = 100). Deflators adjust the value series, taking out the effect of price change, to create the volume series. Details on [deflation improvements in the UK national accounts](#) can be found on the archived section of the ONS website.

## Seasonal Adjustment Review

All series are seasonally adjusted using X13 ARIMA SEATS. The regressors and models used to seasonally adjust are reviewed regularly and further details of [this review and other methodological changes](#) are available on the NISRA website.

<sup>1</sup> May not add to 100% due to rounding

## Publications policy

All 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 from the [IOP section of the NISRA website](#).

Future IOP publications are due to be published on the same day as the [Index of Services](#) in March, June, September and December of each year. The [ELMS Publication Schedule](#) is available on the NISRA website.



## Accredited Official Statistics

[Accredited official statistics](#) are a sub-set of official statistics that have been independently reviewed by the Office for Statistics Regulation and confirmed as complying with the standards of trustworthiness, quality, and value in the [Code of Practice for Statistics](#). Accredited official statistics are called National Statistics in the Statistics and Registration Service Act 2007.

These accredited official statistics, the quarterly Index of Production (IOP), were [independently reviewed](#) by the Office for Statistics Regulation in August 2011. They comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics and should be labelled 'accredited official statistics'.

National Statistics status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

Since the assessment by the UK Statistics Authority, we have continued to comply with the Code of Practice for Statistics and have made the following improvements:

- Removed pre-release access to enhance trustworthiness and also brought the publication date forward as a result;
- Reduced [business burden](#) by offering the option of online data returns.
- Improved accessibility of Index of Production Statistics by amending the format and structure of reports in line with accessibility regulations.
- [Consulted users](#) on streamlining the IOP statistical bulletin.