

# Impact of methodological changes on the Northern Ireland Index of Services and Index of Production

June 2019

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## 1. Introduction

This paper summarises the impact of methodological changes on Index of Services (IOS) and Index of Production (IOP) estimates. It provides background information on IOS and IOP, descriptions of the revisions that have been made, and the impact of the revisions.

It is normal practice for IOS and IOP estimates to be revised. Data is provisional and subject to revision. Further information on standard revisions can be found [here](#) and [here](#).

There have been methodological changes to output estimates that have been included in the March 2019 release. These revisions result from:

- a periodic seasonal adjustment review;
- improved methodology for the treatment of new businesses (impacting on data from Quarter 2 2016 to Quarter 3 2018).

Feedback and/or questions on these changes can be directed to [economicstats@nisra.gov.uk](mailto:economicstats@nisra.gov.uk).

## 2. Background to the IOS and IOP

The quarterly IOS and IOP provide timely indicators of growth in the output of the private sector services industries, and the production industries in Northern Ireland (NI). Output estimates are calculated from the IOS and IOP aspects of the Quarterly Business Survey (QBS). The IOS has a sample size of approximately 3,400, covering all private service sector businesses with 100 or more employees and a representative sample of smaller businesses while the IOP has a sample size of approximately 1,100, covering all production businesses with 40 or more employees and a representative sample of smaller businesses.

The sample frame for the IOS and IOP is the Inter Departmental Business Register (IDBR), a register of all businesses registered for VAT and/or PAYE.

IOS and IOP indices along with other published quarterly indices and unpublished agricultural output data are used to generate the Northern Ireland Composite Economic Index (NICEI). NICEI provides a proxy measure of total economic output in the NI economy on a quarterly basis.

A fuller description of the IOP and IOS methodology can be found [here](#) and [here](#).

### 3. Description of revisions

#### *i. Seasonal adjustment review*

Economic output data can be affected by events throughout the year, some work may be seasonal (for example retailers may generate greater levels of turnover during the Christmas period, and electricity suppliers may generate more turnover in winter). Output estimates from the IOS and IOP are seasonally adjusted to account for such seasonal trends. Over time these trends can change; seasonal adjustment models are periodically reviewed. Estimates released in March 2019 are based on updated seasonal adjustment models.

The following series continue to be seasonally adjusted:

- Index of Production (IOP);
- Mining and quarrying (Section B);
- Manufacturing (Section C);
- Food products, beverages and tobacco (Section CA);
- Textiles, leather and related products (Section CB);
- Wood & paper products & printing & reproduction of recorded media (Section CC);
- Other manufacturing (Sections CD and CM);
- Rubber plastic & non-metallic mineral products (Section CG);
- Basic and fabricated metal products (Section CH);
- Computer, electronic, electrical & optical products (Sections CI and CJ);
- Machinery & equipment n.e.c. (Section CK);
- Transport equipment (Section CL);
- Total Other manufacturing (Sections CC, CD, CG and CM);
- Engineering and allied industries (Sections CI, CJ, CK and CL);
- Electricity, gas, steam and air conditioning supply (Section D);
- Water supply, sewerage and waste management (Section E);
- Consumer Goods;
- Intermediate Goods;
- Investment Goods;
- Index of Services (IOS);
- Wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service (Sections G and I);
- Transport, storage, information & communication (Sections H and J);
- Business services and finance (Sections K, L, M and N); and
- Other services (Sections P, Q, R and S).

Seasonality has not been detected for Manufacturing of chemical and pharmaceutical products (Sections CE and CF), which was also the case during the previous seasonal adjustment review.

**ii. Treatment of new businesses**

The sample frame for the IOS and IOP – the IDBR – contains a range of information on businesses, including a description of its main business activities (Standard Industrial Classification (SIC)).

When a new NI business registers for VAT and/or PAYE it is added to the IDBR using data the business has provided to HMRC or Companies House. Where a business does not supply HMRC or Companies House with their industry description, the business is added to the IDBR using one of two general SIC codes - 'SIC 74 - Other professional, scientific and technical activities' or 'SIC 82 - Office administrative, office support and other business support activities'. Information from the monthly or quarterly IDBR proving survey or the Business Register and Employment Survey (BRES) is then used to confirm/update the SIC description.

Previously, the IOS methodology involved removing from the results any businesses whose industry code had not been confirmed, and changing the industry codes in the results for those businesses which had confirmed their industrial activity since being selected for IOS. No changes were made to the IOP data to reflect these businesses. This was because the changes were found to be minimal given that SIC codes 74 and 82 are reported within IOS.

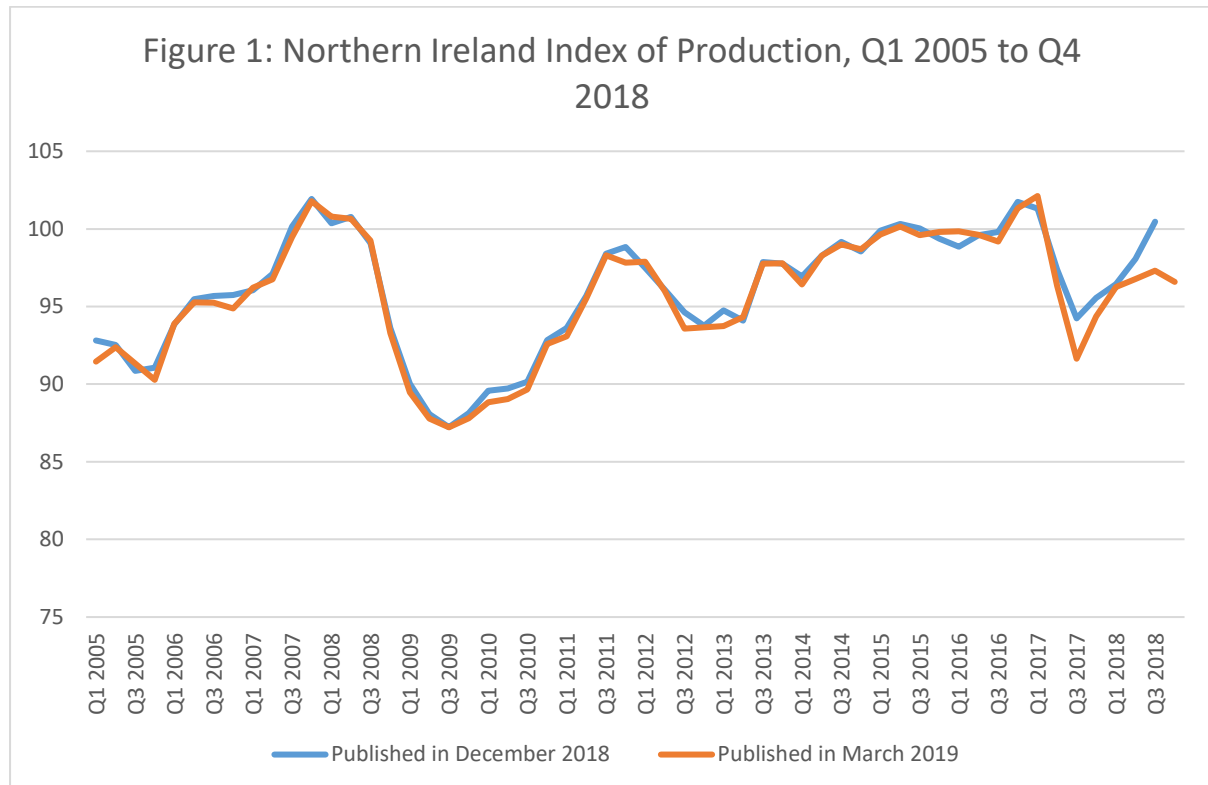
This is a cyclical issue with number of businesses increasing each quarter from Quarter 1 to Quarter 4 each year and then a notable drop between Quarter 4 and Quarter 1. It was possible to minimise this impact in the most recent seasonal adjustment models.

#### 4. Impact of revisions

The graphs (Figure 1 and 2) show the impact of both the standard revisions and the additional revisions detailed in this document. The impact of the revisions is small.

##### *Index of Production*

- The changes resulted in the majority of quarters showing a lower level of output.
- The largest revision in growth rate is in Quarter 3 2018 where output grew by 2.4% in previously published results with the revised methodology showing growth of 0.5%.



### Index of Services

- The changes resulted in the majority of quarters showing a lower level of output.
- The largest revision in growth rate is in Quarter 2 2017 where output fell by 1.2% in previously published results with the revised methodology showing a decline of 0.5%.

