

Northern Ireland Economic Trade Statistics: Quality Report

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1 Introduction

This report covers the Northern Ireland Economic Trade Statistics (NIETS) statistical bulletin and provides information on the quality of the data used to produce the publication and the statistical time series. This will allow users to be informed about the quality of the information upon which they may be drawing conclusions and making decisions.

The report is based on the [nine quality dimensions of the European Statistical System](#).

From 1st April 2011, responsibility for the production of official statistics on the economy and labour market became the responsibility of the Department of Finance and Personnel, now the Department of Finance (DoF). Those powers previously exercised by the Department of Enterprise, Trade and Investment (DETI) under the Statistics of Trade and Employment (Northern Ireland) Order 1988 are now exercised by DoF from this date, as a result of the Department's (Transfer of Functions) (No.2) Order (Northern Ireland) 2011. While DoF exercise the powers of the 1988 Order, in practice the operational responsibility for statistics production will reside with the Northern Ireland Statistics and Research Agency (NISRA), an Agency of DoF.

The Northern Ireland Economic Trade Statistics (NIETS) data is captured through the Northern Ireland Annual Business Inquiry (NIABI). NIABI is an integrated survey that provides information on the value of the economic activity that businesses generate and associated expenditure across the main industrial sectors in Northern Ireland. The NIABI provides a number of high-level indicators of economic activity such as the total value of sales and work completed by businesses (Turnover), the value of exports as well as the value of the purchase of goods, materials and services. The UK Annual Business Survey, carried out by the office for National

Statistics (ONS), collects similar data on GB economic activity. However the NIABI is unique in that it captures the value of trade.

Users should therefore consider this Quality Report alongside the [NIABI Quality Report](#).

The NIETS statistics are published on the [Northern Ireland Statistics and Research Agency](#) website.

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2 Relevance

The degree to which the statistical product meets user needs in both coverage and content.

Assessment by the Author:

The Northern Ireland Annual Business Inquiry (NIABI), through which NIETS data is collected, provides information on the value of the economic activity that businesses generate and associated expenditure across the main industry sectors in Northern Ireland

The central structure and periodicity of the NIABI publication are driven by the legal requirement to provide data for the UK Annual Business Survey, UK National Accounts and the European Structural Business Statistics (SBS). Data from the NIABI feed into the UK ABS which is in turn the primary source of data used in the compilation of the Input-Output Annual Supply and Use tables for National Accounts. UK ABS also provides a major contribution to the Blue Book which is produced by National Accounts. The NIABI is designated as [National Statistic](#).

The Northern Ireland Executive's Programme for Government (PFG) 2011-2015 made the economy its top priority and identified growing the private sector (and exports) as one of the primary vehicles for delivering the vision of

'...a sustainable and growing private sector, with a highly skilled and flexible workforce operating in productive and innovative firms that are competitive in global markets'

The Economic Strategy was subsequently published in 2012 with a further emphasis on export-led growth.

Northern Ireland has traditionally had a very good survey-based measurement of its Manufacturing sector sales and as such is well placed compared to other regions of the UK in respect of the measurement of such exports. However there has been no single published source which provides the comprehensive statistical evidence required to measure exports across the whole economy. The NIABI was selected as that source.

In survey year 2011, questions relating to the value of trade were added to the NIABI questionnaire. This trade data (NIETS) was treated as a stand-alone dataset. This ensured that NIABI business-as-usual data production was unaffected while the new trade data was investigated and validated with a view to publishing.

The NIETS were [designated as National Statistics](#) in March 2022 following a full assessment of the Broad Economy Sales and Exports Statistics against the Code of Practice for 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.

Over recent years we have worked closely with known users to ensure that NIETS statistics are meeting their needs. The Department for Economy (DfE) along with other

NI Departments and Departments in GB have been using the outputs from the NIETS to inform the debate around EU Exit (see below).

NISRA is making these experimental statistics available so that users and stakeholders can be involved in their development. NISRA has engaged extensively throughout the project with expert users of NI economic statistics whose views have helped shape the development of the NIETS. Users include:

- Department for the Economy (DfE);
- Department of Finance (DoF);
- Department of Agriculture, Environment and Rural Affairs (DAERA);
- The Executive Office (TEO);
- NISRA Economic Accounts;
- InterTradeIreland (ITI);
- Economic and Social Research institute (ESRI);
- Office for National Statistics (ONS);
- HM Revenue and Customs (HMRC);
- Department for Exiting the EU (DExEU);
- HM Treasury (HMT);
- The Department for Business, Energy and Industrial Strategy (BEIS);
- Cabinet Office;
- Home Office;
- Medicines and Healthcare Products Regulatory Agency (MHRA);
- Food Standards Agency (FSA);
- UK Trade Policy Observatory (UKTPO);
- The Ulster University Economic Policy Centre (UUEPC);
- The Economic Statistics Centre of Excellence (ESCOE) in the University of Strathclyde; and NI economic commentators and private sector consultants.

3 Accuracy

The proximity between an estimate and the unknown true value.

Assessment by the Author:

The NIABI, through which NIETS data is captured, is designed to provide estimates of turnover and approximate Gross Value Added (GVA) for most sectors in the economy. The main exceptions are the public sector, financial services and most of agriculture.

The NIABI sample is stratified by industry sector and size of business, with all large businesses being surveyed each year. However, not all businesses respond to the survey.

The accuracy of the results is affected by a range of issues. Some of these are related to the fact that the estimates are based on a sample rather than a census of all businesses and that not all businesses respond to the survey. Some relate to the other processes involved in calculating the results.

Coefficient of Variation

The NIETS uses the coefficient of variation to provide precision estimates for the published results. The coefficient of variation is the standard error of a variable divided by the parameter estimate. Coefficients of variation are routinely published alongside all published data tables.

Standard Errors

In statistics, sample estimates such as means and medians deviate from the actual population mean and median; and this deviation is the standard error. Standard error is a statistical term that measures the accuracy with which a sample represents a population and is essentially an indicator of the reliability of the estimate.

The smaller the standard error, the more representative the sample will be of the overall population.

[The technical definition of the estimated standard error for a domain parameter estimate is defined as the square root of the estimated variance of the parameter estimate. If an estimated ratio is undefined then its standard error is also undefined.]

Confidence Intervals

Confidence Intervals can be created using the standard errors provided by the NIETS and these are routinely published alongside all published data tables.

A confidence interval is a measurement of how good, or how accurate [parameters](#) such as means and medians are. Statistics is concerned with [estimating](#) values. In the case of confidence intervals, an interval is given instead of a single parameter estimate, together with a likelihood that the observed value will be in the interval.

Confidence Level

The likelihood that the parameter will be in the interval given is called the confidence level. Very often, this is given as a percentage.

The confidence interval is always given together with the confidence level. People may speak about the "95% confidence interval" and this is when, 95 times out of 100, the unknown true value of the parameter lies within the confidence interval that is presented.

Coverage errors

The survey is designed to cover around two thirds of the NI economy. Full details of all sectors included for the NIETS can be accessed in the Background Notes section of the report. The sample is drawn from the [Inter Departmental Business Register](#). As the IDBR is a continuously updated register it is possible that misclassified businesses may be included in the sample and that newly established businesses may be missed through not yet being recorded in the IDBR.

The sample is designed to achieve a specified precision for the employment variable of each of the SIC (2007) sections measured. The table below shows forecasted precision levels for the 2018 survey year:

Sic (2007) section	Definition	Precision \pm (%)
A	Agriculture, forestry and fishing	10
B	Mining and quarrying	5
C	Manufacturing	2
D	Electricity, gas, steam and air conditioning supply	10
E	Water supply; sewerage, waste management and remediation activities	5
F	Construction	5
G	Wholesale and retail trade; repair of motor vehicles and motor cycles	2.5
H	Transport and storage	5
I	Accommodation and food service activities	10
J	Information and communication	5
L	Real estate activities	10
M	Professional, scientific and technical activities	5
N	Administrative and support service activities	10
P	Education	10
Q	Human health and social work activities	10
R	Arts, entertainment and recreation	10
S	Other service activities	10

These precision estimates are determined by balancing the importance that users attach to each sector against the implications for respondent burden of increasing sample size. It is important to note that although these variability measures are incorporated into the sample design, the nature of a sample survey is such that the underlying variability in the returned data cannot be perfectly estimated. Therefore the actual variability of returns may differ from those indicated in the above table.

Non-sampling Error

Non-sampling errors can be difficult to quantify accurately but can be caused by coverage, measurement, processing and non-response. Details of the impact of these as well as the methods employed to minimise their effects can be seen below.

Non-response errors

Non-response errors occur when the response rate falls significantly below 100%. As the characteristics of respondents and non-respondents may differ, biases can be introduced into the results. As the response rate for the 2018 NIABI survey was 60%, non-response error is not considered to have a large effect on the results. However, to reduce the influence of non- and low-response rates, a scoring system was used from survey reference year 2011 to identify those companies whose results have the largest effect on the overall results. These companies have been given priority in terms of non-response chase-up and quality assurance of results. During non-response chase-up the data is also stratified by SIC 2 to target cells with low SIC 2 response rates.

Processing errors

Processing errors happen when mistakes occur in the implementation of the administrative and statistical methods used to produce the survey. With the introduction in 2012 of a new Integrated Business Survey System (IBSS) all survey forms are now scanned, and electronic versions automatically populated, rather than manually input. This reduces the incidence of data entry error. Errors that occur as a consequence of the form incorrectly scanning will be identified during the validation process and a check can be made to see if this is a data input error or the provision of incorrect data. Processing errors are considered to have a negligible impact on the results.

Measurement errors

A business may provide incorrect data to the NIETS questions – for example providing the exact amount in £s rather than in £000's as requested. Validation checks are applied to the raw data and individual returns that are significantly out of step with previous values are queried with the data suppliers, and may be amended depending on the result of the check. Where a company has also provided information to another Northern Ireland survey, for example the Business Register Employment Survey or the Index of Production or Services, the information can be compared to this survey. This information is used to understand and explain movements in the data. This has been considered to have a negligible impact on the results.

Calendar year results

NIETS results are published for calendar year. However, in order to reduce the burden on respondents, businesses have the option to return data for their business year end, covering any 12 month period up to and including the end of the financial year that follows the calendar year. It is possible that, particularly if the economy is undergoing a period of rapid change such as during a recession, the different reporting periods could introduce some bias. The [ONS conducted an analysis of this effect](#) and determined there is no clear evidence to indicate significant problems with the data as a result of the calendar year effect. The recommendation was not to implement any adjustment for bias.

Provision of revised data

Revisions to data occur for a number of reasons: late returned questionnaires, incorrect estimates or revised data. The [NIETS revisions policy](#) is published on the NIETS section of the website.

It is normal practice to revise the data from the previous year based on ongoing data validation and clarification of responses from individual businesses. In line with this, the size of revisions to previously published provisional NIETS estimates are routinely published as a standalone set of tables to allow users to assess the impact of the revisions.

In addition, previously published statistical bulletins are available at an [archive page](#) on the NIETS section of the website.

4 Timeliness and Punctuality

Timeliness refers to the time gap between publication and the reference period. **Punctuality** refers to the gap between planned and actual publication dates.

Assessment by the Author:

The Economic and Labour Market Statistics (ELMS) [publications schedule](#) is available on the NISRA website and provides a minimum of twelve months advance notice of releases.

Following two events that sought user views on the BESES (a [user consultation](#) held in Summer 2021; and the recently concluded [assessment](#) of the Broad Economy Sales and Exports Statistics by the [Office for Statistics Regulation](#), the independent regulatory arm of the UKSA), the desire for more timely data was a theme that emerged strongly from both. NISRA subsequently hosted a [user group meeting](#) with users on the 20th January 2022 where we outlined proposals to bring forward the annual imports publication (typically released in May/June each year) to early April 2022, combining it with our annual exports goods and services publication. This plan was well received, and the outworking of that proposal was the single publication titled *“Northern Ireland Broad Economy Sales and Exports Statistics: Trade in Goods and Services Results”* which brought imports and exports of goods and services data together into one publication and, importantly, facilitated the production of balance of trade analysis (as measured by BESES coverage) for the first time.

As a result of further work in developing a Reproducible Analytical Pipeline (RAP) to better automate our statistical processes, we have now been able to combine the destinations-level results (typically published in December each year) with the Trade in Goods and Services Results publication (published the following April) into a single publication, effectively cutting six months off the previous publication timeline for the release of all data for the survey year.

Given these developments, the name of the data series and publication has been changed to better represent the breadth of trade data published. Therefore, the Broad Economy Sales and Exports Statistics (BESES) series is now called the Northern Ireland Economic Trade Statistics (NIETS).

In the unlikely event of a change to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change explained fully at the same time, as set out in the Code of Practice for Statistics.

5 Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. **Clarity** refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

Assessment by the Author:

The NIETS statistical bulletin contains tables and text and conforms to the standards set out in the [Code of Practice for Statistics](#). The publication contains a 'Background Notes' section which provides information on the scope of the survey, details of the data collection process, validation process and methodology.

The NIETS publication released in December 2022 marked the first time that the publication was released in HTML format only, produced using RAP guidelines. The content and format of the report and tables had changed to make them more user friendly and interactive, enhanced accessibility, and increased the level of automation in its production.

In addition, and reflecting the considerable volume of trade data being disseminated via the NIETS release, the NIETS data is now available via the new [NISRA data portal](#), which has been designed to enhance the user experience (as described below) and remove the need for Excel tables.

The Data Portal gives users the flexibility to slice and dice datasets, run meta-data searches, filter results, plot interactive charts, visualise data over interactive maps, share results and automate processes by reading data via API queries. The outputs follow the Open Data recommendations by providing access to multiple data formats (CSV, JSON-stat, PX, and XLSX).

The NIETS statistical bulletin is available on the NISRA website and free to download at 09:30 on the day of publication

The ELMS Helpline can be contacted either by phone (028 9052 9475) or by email (economicstats@nisra.gov.uk)

Enquiries from the media are directed through the DfE Press Office.

NISRA operates a policy whereby publications are available on request in alternative formats such as Braille, large print and minority ethnic languages.

6 Coherence and Comparability

Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain.

Assessment by the Author:

The NIETS data is captured through the Northern Ireland Annual Business Inquiry (NIABI).

The UK Annual Business Survey, carried out by the office for National Statistics (ONS), collects similar data on GB economic activity. However the NIABI is unique in that it captures the value of trade.

While directly comparable UK data for the NIETS do not exist (the NIETS covers goods and services produced in Northern Ireland), HM Revenue & Customs (HMRC) are responsible for collecting the UK's international trade in goods data, which are published as two National Statistics series - the ['Overseas Trade Statistics \(OTS\) of the UK'](#) and the ['UK Regional Trade Statistics \(RTS\)'](#).

The Scottish Government also publish export statistics from the [Exports Statistics Scotland](#) series (formerly called the Global Connections Survey).

The Welsh Government has recently developed an experimental trade measure called "Trade Survey for Wales". The latest release can be accessed on the [Welsh Government's website](#).

The Government Statistical Service (GSS) has issued [guidance on comparing official statistics](#) produced by each nation of the UK.

NISRA's exports statistics are considered as "Partially Comparable at Level D" with the ONS's statistics on importers and exporters in GB ([most recent publication](#)). Level D comparability is described as: "Figures which are produced from separate sources of data. Methods and standards are broadly comparable, but users should be made aware of the limitations."

7 Trade-offs between Output Quality Components

Trade-offs are the extent to which different aspects of quality are balanced against each other.

Assessment by the Author:

The main users want the figures to be available as soon as possible after the period to which they refer. Estimates are published as soon as validation is finished and quality assurance is completed. As a result, revisions are an inevitable consequence of the trade-off between timeliness and accuracy.

8 Assessment of User Needs and Perceptions

The processes for finding out about users and uses, and their views on the statistical products.

Assessment by the Author:

ELMS, NISRA has a programme of scheduled Economy and Labour Market Statistics Users meetings. (The last meeting was February 2020). These meetings allow users to give feedback on their needs and perceptions of ELMS surveys and publications.

From attendance at the statistics users meetings it is clear that users are primarily government officials, academics and economic analysts. It is likely that members of the general public access our data via the website.

Additionally NISRA runs an annual NISRA-wide customer satisfaction survey which incorporates ELM statistics.

9 Performance, Cost and Respondent Burden

The effectiveness, efficiency and economy of the statistical output.

Assessment by the Author:

The estimated respondent burden for survey reference year 2018 is £136,083. The Quinquennial review also includes a survey of businesses in the NIABI (and hence NIETS) sample to identify any problems with the data collection element of the survey from the contributors' point of view. The aim is to improve the process to reduce respondent burden.

10 Confidentiality, Transparency and Security

The procedures and policy used to ensure sound confidentiality, security and transparent practices.

Assessment by the Author:

The data are held on a network that is accredited to the security level of the data and is accessible only to staff involved in the production process. During the publication process all hard copies of interim results are locked away or shredded.

The data are collected under the [Statistics of Trade and Employment \(Northern Ireland\) Order 1988](#).

This requires the Department to ensure the confidentiality of the data. Staff are trained and reminded of the protocols for ensuring the data remain confidential. This covers physical security, IT security and data disclosure issues.

A summary of [NISRA ELMS' confidentiality policy](#) can be found on the website.