Northern Ireland Index of Services Quality Report

Introduction

This report covers the Northern Ireland Index of Services (IOS) 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
http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-RA-08-015

From 1st April 2011, responsibility for the production of official statistics on the economy and labour market will be the responsibility of Department of Finance and Personnel (DFP). Those powers previously exercised by the Department of Enterprise, Trade and Investment (DETI) under the Statistics of Trade and Employment (Northern Ireland) Order 1988 will be exercised by DFP from this date, as a result of the The Departments (Transfer of Functions) (No.2) Order (Northern Ireland) 2011. While DFP will 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 DFP.

In the short-term the statistics will continue to be published on the DETI website.

Publication Name: Northern Ireland Index of Services
Department Responsible: Department of Finance and Personnel
Release Date: Quarterly – January, April, July, October
Web link to main publication: http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-ios.htm
Quality report last updated: April 2013

Dimension	Assessment by the Author
Relevance	**The degree to which the statistical product meets user needs in both coverage and content.** The IOS is intended to provide a general measure of quarterly changes in the output of the private service sector industries. This is defined as those private sector businesses in sectors G to S of the Standard industrial Classification 2007 (SIC07). As well as the overall index of services there are four separate indices: for Wholesale and retail trade, repair of motor vehicles and motorcycles, accommodation and food service activities, for Transport, storage, information & communication, for Business services and finance and for Other

Services. The report provides UK figures for comparative purposes. The Northern Ireland Index of Services was first published in 2005. Data back to Quarter 1, 2002 are available.

Its primary use is as a short-term economic indicator, being used as an indicator of industrial activity.

All of the data are obtained from the statutory Quarterly Inquiry into the Distribution and Services Sector in Northern Ireland (DSS Inquiry).

There are a variety of users of the NI IOS data – local government, economic analysts, academics, businesses and the general public. Through our regular Economic and Labour Market Statistics Users meetings users have raised the need for a Retail Services Index (we currently report on wholesale and retail distribution). As a result we amended our sample design to enable us to produce such an index in the future.

A full summary of usage of the Index is available on the website at http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-ios.htm

Within government it is used in policy formation, in response to Assembly questions and in presentations to the Executive Sub Committee on the Economy and the independent Economic Advisory Group which includes economists and business leaders. Companies use it to, for example, identify growth in specific areas of the service sector for recruitment purposes.

Accuracy	**The proximity between an estimate and the unknown true value.**

The Index of Services is a volume index which measures turnover (deflated to a constant price). The methodology is contained in the background notes of the statistics bulletin. http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-ios.htm

The accuracy of the Index is affected by a range of issues. Some of these are related to the fact that the data are collected from a sample of businesses and some relate to the other processes involved in calculating the index.

Coverage errors: The sample is designed to cover all private businesses in the service sector and is drawn from the Inter Departmental Business Register. http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-inter-dept-bus-register.htm

The sample was refreshed for Q2, 2011 and was drawn on a SIC07 basis. Due, in part, to the significant number of companies which fall into the census element, approximately 50% of businesses in the new sample were also in the old sample.

Non-response errors: Not all businesses respond to the survey. The characteristics of these businesses may be different from those that do respond. However, as the size and industrial classification of

the non-responding businesses are known we are able to account for that in the grossing methodology and this has a limited impact on the overall Index.

Sampling error: An estimate drawn from a sample is subject to sampling error, which is dependent on the sample size and the inherent variability of the population characteristic being measured. The IOS sample size is now approximately 20% bigger at nearly 1,900 businesses, balancing both the need for reliable estimates with the resources available to manage the survey. It comprises a census of all businesses in the private services sector with 100 or more employees and also high turnover low employment companies. This census element currently accounts for around 59% of turnover in the private service industries according to the IDBR. The remaining selected businesses were then are allocated to industry strata on the basis of a Neyman allocation to maximise the precision of the sampled element of the survey. Neyman allocation is a sample allocation method that may be used with stratified samples. The purpose is to maximise survey precision (here, of total turnover), given a fixed sample size. It is actually a special case of optimal allocation where one assumes that the cost of sampling is the same for each stratum.

Considering the importance of the IOS inquiry DETI agreed in consultation with the Statistics Advisory Committee that as of September 2010 the IOS survey should become a statutory inquiry carried out under the provision of Article 5 of the Statistics of Trade and Employment (NI) Order 1988. Therefore results from Quarter 3 2010 onwards are based on the statutory survey.

This change has seen response rates increase from 63% in 2009 to 71% in 2010, 77% in Q3 2010 and has remained above 80% since Q2 2011.

Processing errors: The data may be entered incorrectly into the system. Again, the validation procedures will highlight these and a check can be made to see if this is data input error or the provision of incorrect data. This has negligible impact on the Index.

Measurement errors: A business may provide incorrect data to the turnover question – for example providing the exact amount in £s rather than in £,000s. Validation checks are applied to the raw data from the DSS Inquiry 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 data to the Northern Ireland Annual Business Inquiry (ABI) the information from the DSS Inquiry can be compared to the ABI. This information is used to understand and explain movements in the data. This has negligible impact on the Index.

Changes in the seasonal pattern of the data: The seasonal pattern in a series may change fundamentally if there is a major economic or measurement change. This would mean that the existing parameters set for the X12 ARIMA seasonal adjustment

	package may no longer be optimal. Observations after such a change, although they might be following the new pattern in a normal regular fashion, could be viewed as extreme values (outliers) by the seasonal adjustment programme. The effect could be a highly volatile series, subject to large oscillations and revisions. If such a case arose then the seasonal adjustment pattern would need to be reviewed to optimise it. The IOS moved from X11ARIMA to X12ARIMA in October 2010 and the seasonal adjustment parameters were reviewed and optimised at that time. With the move to SIC07 the seasonal adjustment parameters have been reviewed and optimised for the Q2 2011 results and backseries. **Provision of revised data**: Revisions to data occur for a number of reasons: late returned questionnaires, incorrect estimates, revised back data, changes in coverage as a result of changes to the Standard Industrial Classification and revisions to seasonal adjustment factors (which are re-estimated every quarter). The IOS revisions policy is published on the IOS section of the website. http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-ios/revisions-to-ios.htm One dimension of measuring accuracy is reliability, which can be measured using evidence from the analyses of revisions to assess the closeness of early estimates to subsequently estimated values. Historically, the IOS bulletin has contained information on Revisions Triangles. These triangles presented a summary of the differences between the first estimates of growth published and those published 3 years later for the same reference period. A statistical test has been applied to the average revisions to growth to find out if it is statistically significantly different from zero. In Q2 2011 we moved to publishing on a SIC07 basis. As the coverage of the Index (and the broad industry groupings) is different between SIC03 and SIC07 it is not possible to compare the results provided in this bulletin with those published in July 2011. In Q2 2011 the data for Q1 2011 and earlier have been converted to approximate the SIC07 coverage and are therefore not strictly revisions. As a result no Revisions Triangles are available this quarter. Further information on the construction of SIC07 revisions triangles will be announced in due course.
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.** The Economic and Labour Market Statistics (ELMS) publications schedule is available on the DETI website and provides twelve months advance notice of releases. http://www.detini.gov.uk/deti-stats-index.htm The Quarterly IOS is published in January, April, July and October and the publication dates are fixed to coincide with the release of the Labour Market Statistics. Every effort is made to meet the publication deadline and the IOS has always been published to the scheduled

	timetable since it was introduced. In the unlikely event of a change to the pre-announced release schedule, public attention would 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 Official Statistics. The Quarterly IOS is usually published 3.5 months after the end of the reference period. It is published as a Statistical Bulletin on the DETI website.
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.** IOS statistical bulletins contain tables, graphs and text and conform to the standards set out in the Code of Practice for Official 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 IOS statistical bulletin is available on the DETI website and free to download at 09:30 on the day of publication The ELMS Helpline can be contacted either by phone (028 9052 9311) or by email (statistics@dfpni.gov.uk) Enquiries from the media are directed through the DETI Press Office. NISRA operates a policy whereby publications are available on request in alternative formats such as Braille, large print and minority ethnic languages. A timetable of future changes to the IOS is available from the IOS website at http://www.detini.gov.uk/deti-stats-index/stats-surveys/stats-ios/revisions-to-ios.htm
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.** The NI IOP and NI IOS both measure like phenomena – the output of businesses in Northern Ireland, and might be expected to behave in a similar fashion. However, since they measure different sectors of the NI economy the indices will not necessarily follow the same trend. The data used to calculate the IOS are sourced from the DSS Inquiry. There is no comparable source but when the Northern Ireland Annual Business Inquiry data are available checks can be undertaken to ensure consistency between the four quarterly returns and the data returns from the ABI.

	Every effort is made to ensure that the series is comparable over time, and a comparable time series is available back to Q1 2002. Where possible, changes to the methodology are applied to the whole series to ensure this comparability is maintained. The Northern Ireland methodology is essentially comparable with the ONS UK, Welsh and Scottish methodologies. The data used are deflated turnover from monthly and/or quarterly surveys, with some industries measured by deflated production, direct volume measures or employment numbers. Component indices are aggregated by annual chain linking for the ONS UK, Welsh and Scottish methodologies and Northern Ireland moved to annual chain linking from the July 2011 publication. The Northern Ireland and Welsh Indices cover private sector businesses only, whilst the Scottish and ONS UK Indices include public sector services. Index of Services figures for the UK, Wales and Scotland, respectively, can be accessed through the following links http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=National+Income%2C+Expenditure+and+Output http://wales.gov.uk/topics/statistics/theme/economy/econ-indices/?lang=en http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GDP
Trade-offs between Output Quality Components	**Trade-offs are the extent to which different aspects of quality are balanced against each other.** As the IOS is a short-term indicator, the main users want the figures to be available as soon as possible after the period to which they refer. The main limiting factor is the availability of quarterly turnover data from businesses. 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.
Assessment of User Needs and Perceptions	**The processes for finding out about users and uses, and their views on the statistical products.** ELMS, NISRA has a programme of regular, scheduled Economy and Labour Market Statistics Users meetings. (The last meeting was 11 November 2011). The date of the next meeting is to be confirmed. http://www.detini.gov.uk/deti-stats-index/stats-national-statistics/user-consultation-and-information.htm 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. There is a specific feed back facility on the Index of Services web

	page. http://www.business.detini.gov.uk/IOS/IOSOpening.aspx Both of these allow users to give feedback on their needs and perceptions of the IOS. As the number of users leaving comments on the IOS website is small we have not published an analysis of the comments. Additionally NISRA runs an annual NISRA –wide customer satisfaction survey which incorporates ELM statistics.
Performance, Cost and Respondent Burden	**The effectiveness, efficiency and economy of the statistical output.** The process of producing the IOS is carried out in-house and costs approximately £154,000 per year to run. This is mostly staff costs but also includes the printing and postage of the survey forms. The estimated respondent burden for 2009 was £37,632 Full details on respondent burden for all formerly DETI surveys can be found at http://www.detini.gov.uk/compliance-report
Confidentiality, Transparency and Security	**The procedures and policy used to ensure sound confidentiality, security and transparent practices.** 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. Staff are trained and reminded of the protocols for ensuring the data remain confidential. This covers physical security, IT security and data disclosure issues.