
Director General for Regulation

Jonathan Athow
Director General for Economic Statistics
Office for National Statistics

7 March 2019

Dear Jonathan

**NATIONAL STATISTICS STATUS OF CONSTRUCTION PRICES AND COST INDICES,
CONSTRUCTION OUTPUT AND NEW ORDERS STATISTICS**

Thank you to you and your teams for engaging effectively with us as you have developed your construction statistics following our assessment.

On behalf of the Board of the Statistics Authority, I am pleased to confirm the re-designation of Construction Output Price Indices, GB Construction Output Statistics and Construction New Orders as National Statistics. We will reconsider the re-designation of sub-national estimates of construction output, once further development work has been undertaken.

Since de-designation in December 2014¹ and our assessment², we are pleased that ONS has improved many aspects of this suite of statistics. ONS has improved their accessibility and transparency by publishing detail on the strengths and limitations of these data and publishing all industry data in one location on its website. Guided by requests from stakeholders and in collaboration with industry experts, ONS has enhanced its analysis and supporting commentary of developments in the construction industry and within the wider context of short-term economic indicators. ONS's work with its stakeholders through the Construction Statistics Steering Group (CSSG) and with industry experts via the Consultative Committee on Construction Statistics (CCCIS) has been positive, yielding significant improvements in the quality assurance of data and the development of methodologies, concepts and interpretation of construction statistics respectively. Further details on actions taken by ONS to address the requirements of the assessment report are provided in the annex to this letter.

The April 2014 assessment report, and ongoing reviews of development work, raised several areas of concern relating to data quality which formed the basis of our considerations. These included concerns over the quality of construction output price indices, bias in early estimates of the output measures, the divergence between new orders and output series and movements in sub-national construction output statistics.

We considered at length ONS's response to the assessment report and these concerns. In particular, I welcome the work to improve construction price data, through the introduction of a new construction output prices index, incorporating the input costs of labour, materials and plant, supplemented by a proxy for margin; this has improved accuracy, transparency and accessibility of these price estimates for users.

¹ https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/12/letterfromedhumpersontojohnpullinger11122014withattachmentlettertosiohancareybi_tcm97-44274.pdf

² https://www.statisticsauthority.gov.uk/wp-content/uploads/2015/11/images-assessmentreport280statisticsonconstructionoutputandneworder_tcm97-43729.pdf

Working closely with users and methods experts, ONS has improved the early estimates of construction output by introducing an improved method to impute data for businesses that have not yet returned their survey responses, along with a further adjustment to address additional potential bias in early estimates. This has allowed those engaged in industry and wider economic planning to obtain an earlier, more stable, view of the industry's performance. Further support has been provided to industry analysts through the clarification of the scope and coverage of the new orders and output series. Conventionally, analysts have focused their work on the assumption that these two series are directly comparable, often using new orders data as a leading indicator of the performance of the construction industry and the wider economy. Publishing detail on the make-up and coverage of these data however, has assisted users in understanding the relationship between new orders and output data, and re-defined the use of these data in analysis.

Sub-national and sub-sectoral estimates of construction output

ONS has worked closely with CSSG and CCCIS on improving sub-national and sub-sectoral breakdowns of construction output. Whilst these users have acknowledged the improvements ONS has introduced to the modelling of these estimates, some users remain uncomfortable with the path of sub-national estimates of construction output. Consequently, these detailed breakdowns were excluded from consideration for re-designation. We welcome your ongoing work to improve these detailed estimates of construction output and look forward to considering the National Statistics status in due course. To make it clear to users, ONS should therefore prominently flag within published statistics that these sub-national and sub-sectoral estimates of construction output do not carry National Statistics status.

Given the importance of construction statistics to those engaged in industry and wider economic planning, we support ONS's plans to continue to work closely with its stakeholders and industry experts to determine what further insights can be generated into the performance of the construction industry more widely. These might include, for example, capturing aspects of "off-site" activity as part of a wider definition of the construction industry, measuring the impact of improvements in the quality of building materials and productivity developments arising from better building and construction design.

I am copying this letter to Frances Pottier at (BEIS) as the chair of CCCIS and to Grant Fitzner, ONS's Chief Economist and Craig McLaren and Ceri Lewis of ONS's construction statistics team.

Yours sincerely



Ed Humpherson
Director General for Regulation

Annex: Review of actions taken in response to Assessment Report 280

Requirement	Actions taken by ONS to meet Requirements	Office for Statistics Regulation’s evaluation of evidence in meeting Requirements
<p>Requirement 1</p> <p>ONS should:</p> <p>(a) Take further steps to develop a greater understanding of the use made of these statistics and document more fully the types of decision they inform; and</p> <p>(b) review users’ experiences of Construction and publish the outcomes, including information about how those outcomes will inform the development of the statistics. This would be particularly valuable for the new order statistics. (para 3.3).</p>	<p>ONS published its Construction Statistics Development Programme Work Plan in 2015, taking account of users’ priorities and issues raised in Assessment Report 280. Delivery of the work programme has been steered by the Construction Statistics Steering Group (CSSG), chaired by ONS and comprising representation from the Bank of England, HM Treasury (HMT) and the Office for Budget Responsibility (OBR). ONS is also part of the Consultative Committee on Construction Statistics (CCCIS), which is chaired by the Department for Business, Energy and Industrial Strategy (BEIS) and whose membership comprises industry experts and academics.</p> <p>CCCIS meets twice a year to discuss issues relating to the collection and dissemination of UK Construction Statistics. The committee discusses and proposes solutions on development issues, including work on measures of “margin” and the development of sub-national models of construction output.</p>	<p>ONS has made significant strides to understand the needs and uses of construction statistics by its users. As well as engaging with users through the CCCIS, ONS has published a range of analytical articles to support users’ understanding and developed a new price index for construction output prices. These activities have improved the transparency and understanding of these statistics, bolstering users’ trust, following the removal of National Statistics status.</p> <p>ONS continues to listen to the views of industry experts. For example, in September 2018, industry representatives made a series of suggestions to improve the analysis of new orders and output data. Consequently, ONS published an article on this issue, examining the comparability of these data and providing guidance on their use in an analytical context.</p> <p>Users have given us strong positive feedback on ONS’s engagement activities and the process by which their views have been incorporated into the developments of these statistics. Users have been particularly impressed by the work on the new methodology for construction output prices.</p>
<p>Requirement 2</p> <p>ONS should:</p>	<p>ONS has introduced commentary in its Construction Output in Great Britain publications on the process for revising estimates, and periods for which estimates are subject to revision. ONS</p>	<p>Working with users, ONS quickly identified the main source of the revision bias and designed an improved way to impute values for businesses yet to return their survey</p>

<p>Improve the explanation of the nature of revisions alongside the construction statistics (para 3.7).</p>	<p>has also improved the accessibility of revisions triangles data (both for 1 month & 3 month growth rates).</p> <p>Through its engagement with users ONS has addressed a bias in the early estimates of construction output. Solutions to this bias and details of the new imputation method were discussed in its 2018 paper, Improvements to construction statistics, and in the Quality and Methodology Information (QMI).</p>	<p>responses. The team's work was agile, resulting in a solution being introduced quickly.</p> <p>Users told us that they were happy with the solution and the pace at which it had been delivered. The new imputation method has improved the quality of construction output statistics and enhanced their value to key stakeholders, particularly those using the data for macroeconomic forecasting and industry planning.</p>
<p>Requirement 3</p> <p>ONS should:</p> <p>(a) Provide users with sufficient information about corrections resulting from identified errors in order to aid their understanding of impact on the statistics; and</p> <p>(b) publish details of the quality assurance arrangements for Construction, including information about how these procedures have been strengthened to minimise the risk of errors (para 3.9).</p>	<p>As part of its development plan, ONS has improved its data management and the probability of identifying errors. The plan covers the treatment of outliers, coherence of industry data with official estimates and quality assurance of nominal construction output data. Results and the impacts of these improvements were reported in a 2017 Construction development paper.</p> <p>ONS also published its Quality Assurance of Administrative Data (QAAD) report in line with The UK Statistics Authority QAAD Framework in 2018. The report provides reassurance on the approach to data assurance, although there is scope for further improvement on risk assessment, in particular to reflect the importance of these statistics in the context of Gross Domestic Product.</p>	<p>ONS has made significant efforts to reduce the risks of errors arising in the production and publication of estimates of construction output, through its own data collection and via the data provided to ONS by external suppliers such as Barbour ABI.</p> <p>Since the launch of the development plan, the incidence of errors in published estimates has been low. Any such issues have been minor and have related to typographical, rather than data quality errors. ONS continues to focus on data assurance issues and works closely with Barbour ABI on new orders data.</p> <p>Users have been appreciative of ONS's work on data assurance, coherence (comparing developments in official estimates with those of the Chartered Institute of Procurement & Supply) and explaining the appropriate use of data within the suite of construction statistics.</p>

<p>Requirement 4</p> <p>ONS should:</p> <p>(a) Publish terms of reference for the short term economic output indicators and quarterly National Accounts review meetings;</p> <p>(b) make the date of publication of any minutes transparent; and</p> <p>(c) document how those who produce the statistics are protected from any political pressures that might influence the production or presentation of the statistics (para 3.11).</p>	<p>ONS published the Terms of Reference of the Short-Term Output Indicators (STOI) Group.</p> <p>The Minutes of the STOI meetings and the dates of future meetings were published, along with the agreed change to the structure of the meetings, agreed with stakeholders in July 2015.</p>	<p>ONS set up the Short-Term Output Indicators Group to establish a forum for key stakeholders to engage on the official short-term estimates of economic output. This ensured that key stakeholders have been kept well informed on the short-term estimates of output, and stakeholders' priorities have been taken into consideration when designing the development programme. Key stakeholders have also acted as a quality assurance panel for the development of short-term output indicators.</p> <p>ONS's use of this engagement structure ensured increased transparency in the production and development of this important short-term economic indicator.</p>
<p>Requirement 5</p> <p>ONS should:</p> <p>Update the published information about methods and quality to reflect the latest developments in the construction output statistics, and provide better information about the strengths and limitations of the statistics (para 3.14).</p>	<p>ONS has kept information on quality current in its QMI, including information on the strengths and limitations of construction output data.</p>	<p>Since producing its development plan, ONS has brought significant clarity to the strengths and limitations of this data, publishing detail in the QMI and through specific articles covering issues such as the relationship between new orders and output, sub-national estimates and bias in early estimates of construction output.</p>
<p>Requirement 6</p> <p>ONS should:</p> <p>(a) Publish information about the strengths and limitations of the new orders statistics in relation to their use, including information about the steps ONS has taken to assure itself of the validity of the data;</p> <p>(b) ensure that users are informed of all main sources of error and bias; and</p>	<p>ONS has completed a large body of analytical work on the relationship between construction new orders and output series, culminating in the recent publications on the comparability of these datasets.</p> <p>The incoherence first came to light in 2014, when in his Doctoral Thesis, The Economics of Construction Price Inflation Dr Yu concluded that "<i>The construction new orders series published by ONS are reviewed as a</i></p>	<p>ONS dedicated significant research resource to analyse and understand the incoherence between construction new orders and construction output data.</p> <p>As well as consulting with the CSSG on the re-modelling of new orders to output, a significant piece of work, promoted by CCCIS and OSR analysis, was conducted on the "gap" analysis between the two series.</p> <p>Industry experts subsequently provided guidance on the efficacy of the measures ONS proposed to make the two series comparable, but ultimately, for the reasons outlined this was not possible, resulting in the publication of the</p>

<p>(c) present any breaks in the time series clearly and publish plans for providing users with a consistent historic time series (para 3.16).</p>	<p><i>possible measure of demand and predictor of quantity of construction output, and are shown to be unfit for either purpose.</i>”. Several observations were offered to support this assertion, including the persistent lower level of new orders relative to output, which was thought to be illogical, as some proportion of new orders will be cancelled and subsequently will not be reflected in output figures.</p> <p>In response to these findings ONS first re-examined the model using new orders data to produce sub-national estimates of construction output. Specifically, ONS aimed to address the following model assumptions:</p> <ol style="list-style-type: none"> 1. All projects within a sector have the same length 2. All projects start work as soon as they have been ordered 3. All projects that are ordered will be built. <p>by using the start date of the project, as opposed to the date of the new order and spreading the value of the new order across the duration of the project using project cost distributions.</p> <p>The outcomes of the new model suggested that while there had been an improvement in the relationship between the output and new orders series at sub-national level, it was clear that the aggregate “gap” persisted and was increasing in size. One of the key features of these new outcomes was</p>	<p>article in October 2018 recommending that the series should not be considered comparable.</p> <p>Following publication of this article OSR sought feedback from key stakeholders on ONS’s findings. In general users indicated that the work had been helpful in clarifying the status of these data.</p> <p>There was widespread appreciation of the work the ONS completed on re-modelling new orders to output data and for the high level of support and openness offered by the construction statistics team as part of the efforts to develop construction statistics.</p> <p><u>Future Considerations</u></p> <p>ONS should continue to gain further intelligence on the business factors impacting construction new orders and output data, as outlined in its October 2018 article, and use the information to further develop these series in order that the full value of these leading and performance indicators can be realised.</p>
--	--	--

	<p>that the two series started to diverge in 2013.</p> <p>On further inspection it became clear that there had been a change in the methodology for capturing new orders data. The threshold for capturing new orders had increased from £25K to £100K.</p> <p>ONS re-examined the “gap” between the output and new orders series, concluding that the two series were not comparable, since there are “clear conceptual & methodological differences”.</p> <p>These findings led ONS to recommend to its users that these two series should not be compared for analytical purposes.</p>	
<p>Requirement 7</p> <p>ONS should:</p> <p>Discuss with users the type of information they require about the quality and uncertainty of the estimates and use the feedback to inform the continuous improvement plans for Construction and the suite of short-term economic output indicators (para 3.17).</p>	<p>Following publication of Assessment Report 280, ONS engaged with its users on the interim method for construction output prices, gathering feedback on the methods used and suggestions on how interim solutions could be improved upon.</p> <p>As part of the CSSG and the CCCIS, users from government, industry and academia provided input to the development of deflation methods, along with advice on the re-modelling of the new orders to output relationship for sub-national estimates, and latterly the analytical work aimed at understanding the relationship between these two series.</p>	<p>Following the transfer of responsibility for construction price statistics in 2014, ONS’s engagement with key users of construction prices data has been notable. As well as working in close partnership with academia, industry and government departments on the development of a “mark-up”, the statistical team has consistently taken on board the views and suggestions of key users in the development of construction statistics over the last four years.</p> <p>Feedback from key stakeholders has been very positive. Users are appreciative of the efforts made by ONS’s construction statistics team to tackle challenging issues and to ensure that the views of users have been at the heart of development work.</p>

<p>Requirement 8</p> <p>ONS should:</p> <p>Investigate the impact of lower response rates on the short-term economic output indicators and if significant, establish whether there are any improvements that ONS might introduce to improve the response rates in those months when employment questions are asked, and publish its plans (para 3.23).</p>	<p>ONS has investigated the impact of lower response rates on estimates of construction output. As part of the monthly statistical bulletins, ONS now publishes response rates by number of returned questionnaires, and the proportion of industry turnover covered. ONS published data from 2014 that illustrates that while the response rate for questionnaires has declined over time, the turnover coverage rate has remained stable. Similarly, a comparison of the first and second month response rates with the response rate for the third month (when additional data on employment are requested) reveals little adverse impact on response rates. ONS has taken this analysis further to examine the impacts of changes to the GDP publication schedule and found that while there is an adverse impact on turnover response rates, this is offset by targeted data validation.</p>	<p>ONS's analysis has revealed that there are few adverse impacts on the quality of construction output estimates arising from lower response rates.</p> <p>ONS has anticipated the needs of its stakeholders and extended this analysis to include the impacts of the recent change in the timing of GDP publication, illustrating that whilst there has been an impact on response rates, concerns around data quality have been underwritten by enhanced data validation.</p> <p>We consider that the actions taken by ONS to address these data quality issues have maintained the value of these statistics for users.</p>
<p>Requirement 9</p> <p>ONS should:</p> <p>Present evidence that ONS's recruitment and retention arrangements ensure that appropriately skilled people are employed and retained in the production of the short-term economic output indicators, and are based on an appropriate competence framework (para 3.25).</p>	<p>In December 2014 a development team, comprising a researcher, economist and analytical support was set up to take forward the research work required to improve methodologies, and to develop understanding of Industry dynamics.</p> <p>Recruitment for these posts followed ONS's standard policies for recruiting analytical professions. It is a necessary requirement, however, that those in specialist analytical roles rotate to other posts within ONS, as part of their</p>	<p>Since September 2017 we have discussed analytical issues with several different specialist ONS staff in the construction statistics team. Each of these members of staff has been helpful and knowledgeable in addressing and resolving complex statistical and economic issues, reflecting the effectiveness of the recruitment, retention and rotation policy the ONS now has in place.</p> <p>We are reassured that ONS's construction statistics team is well resourced to address development, production and publication of these statistics.</p>

	development. Sufficient time is allowed to ensure knowledge transfer and skills development.	
<p>Requirement 10</p> <p>ONS should:</p> <p>Improve the commentary in Construction to aid user interpretation of the statistics, drawing on information gathered about users' experiences of these statistics. As part of meeting this Requirement ONS should consider the points detailed in annex 1 and annex 2 (para 3.28).</p>	<p>ONS publishes articles and commentary relating to the Construction industry which is linked to commentary on short-term economic indicators.</p> <p>Detail on the uncertainty around estimates, methods and quality, revisions and deflators is provided in the Construction Output QMI.</p>	<p>Articles on the development of construction statistics have been informed by users' experiences through consultation with the CSSG and the CCCIS. ONS has taken the opportunity to use the development outcomes to improve the commentary and detail in the monthly and annual statistical bulletins.</p> <p><u>Future Considerations</u></p> <p>ONS should continue to use the outcomes of its future analytical work with the CSSG to develop its monthly and annual statistical bulletins.</p>
<p>Requirement 11</p> <p>ONS should:</p> <p>Improve the accessibility of <i>Construction Output and New Orders</i> through ONS's website, including: moving away from having separate web pages for construction output and new orders; and making it clear to users how the statistical report relates to the other short-term economic output indicators (para 3.29).</p>	<p>ONS now publishes all statistical bulletins, datasets (including new orders and output), methodological papers, articles and commentary on the construction industry in one location.</p>	<p>ONS has improved the accessibility of construction statistics significantly. Users now face few problems in analysing the performance of the construction industry and its position within the context of all short-term economic indicators. Simultaneously the user can consider the strengths and limitations of these data in each context.</p>
<p>Requirement 12</p> <p>ONS should:</p> <p>Ensure that construction output and new orders statistics and associated supplementary tables are disseminated</p>	<p>All aspects of data related to the construction industry, including supplementary tables are now provided in one location.</p>	<p>ONS's website has improved the mechanisms for downloading data and gathering all metadata and revisions triangles in one place.</p> <p>Clear signposting, consistent table-numbering and clear labelling encourage analysis and re-use of this data by users.</p>

<p>in forms that encourage analysis and re-use (para 3.30).</p>		
<p>Requirement 13 ONS should: Ensure that all the administrative data sources used in the production of Construction are listed in ONS's Statement of Administrative Sources and publish information about the quality audit arrangements for these sources (para 3.34).</p>	<p>ONS updated its Statement of Administrative Sources in 2016 and published its documentation about the quality assurance of these data in 2018, as discussed at Requirement 3.</p> <p>In addition, ONS has listed all its administrative data sources alongside the statistics. ONS has also drawn together documentation regarding its administrative and survey sources policies in one location.</p>	<p>ONS has improved the transparency of the data sources used in the compilation of construction statistics and has enhanced users' understanding of the trustworthiness of these data by publishing quality assurance material alongside these sources.</p>