

# Impact of quarterly employment question on monthly survey response

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## Executive Summary

A number of ONS business surveys collect monthly information on turnover. Once a quarter, data are also collected on employment from a large number of reporting units, in addition to the turnover data. The UK Statistics Authority has recently expressed concern about the possibility that asking both questions in the same month might lead to a drop in response rate, hence also quality of turnover data. In order to investigate this possibility, response rates were analysed for the Retail Sales Survey, Monthly Business Survey and the Monthly Construction Survey. Data were analysed to investigate unit non-response to the questionnaire (unweighted response rate) and item non-response to the turnover question (weighted response rate) for evidence of an effect arising from the inclusion of the employment question. In addition, data on the number of calls made during each round were analysed for evidence that the extra question was causing additional response chasing requirement.

The evidence of the investigation does not support the hypothesis that collection of employment data in a “quarter” month adversely impacts the weighted response rates.

## Introduction

Non-response bias can occur in a survey when sampled reporting units fail to respond to survey questions or the response provided is unusable. Non-response bias occurs in statistical surveys if the answers of respondents differ from the potential answers of those who did not respond. Maximising survey response rates is the best protection against non-response bias and, consequently, the introduction of a practice which reduces response rates requires strong justification to maintain.

A study was undertaken in response to the concern expressed by the Statistics Authority of the potential for a reduced response rate, for the turnover sample in quarter months (i.e. March, June, September and December). The study examined data from monthly business surveys: monthly data were provided for a two year period from January 2012 to December 2013 for the Retail Sales Survey, Monthly Business Survey and the Construction Survey. The data included information on various response rates and management information, including ‘overall forms response rate on results day’, ‘turnover response rate on results day’, and ‘calls made during the round’. Response rates were analysed to investigate whether or not the quarterly employment question impacts response. The response rates alone do not inform whether questionnaires were returned with or without employment data, therefore the number of calls made during the round for each month were also analysed to investigate whether additional response chasing was required in employment months.

## Results

### Retail Sales

Figure 1 shows unweighted and weighted response rates for the Retail Sales on results day. The unweighted response rates are the percentage of forms returned by results day. The weighted response rates take into account the size of the reporting unit and represent percentage of IDBR turnover on results day. If the quarter months including employment questions are having an adverse effect on response rates, a consistently lower response would be expected in these months relative to non-quarter months. Conversely, if quarter months require consistently higher response chasing then greater numbers of calls would be expected in quarter months relative to non-quarter months. As is shown in Figures 1-6 below, no evidence is found to support the hypothesis of an adverse impact on response from including employment questions in the quarter months.

**Figure 1:** Unweighted and weighted (turnover) response rates on Retail Sales Survey results day (the darker shaded points refer to quarter months)

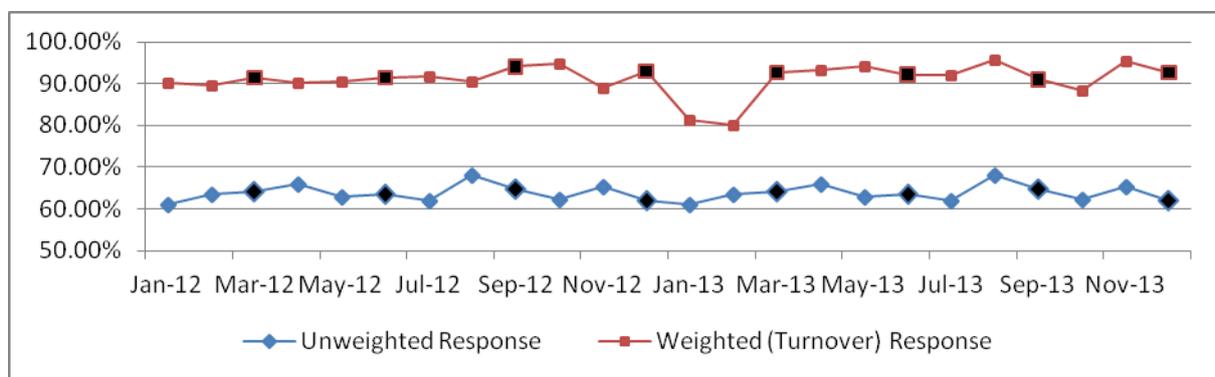


Figure 1 illustrates that there are no clear troughs in the employment months for either unweighted or weighted response rates.

**Figure 2:** Number of calls made in round for Retail Sales Survey (the darker shaded points refer to quarter months)

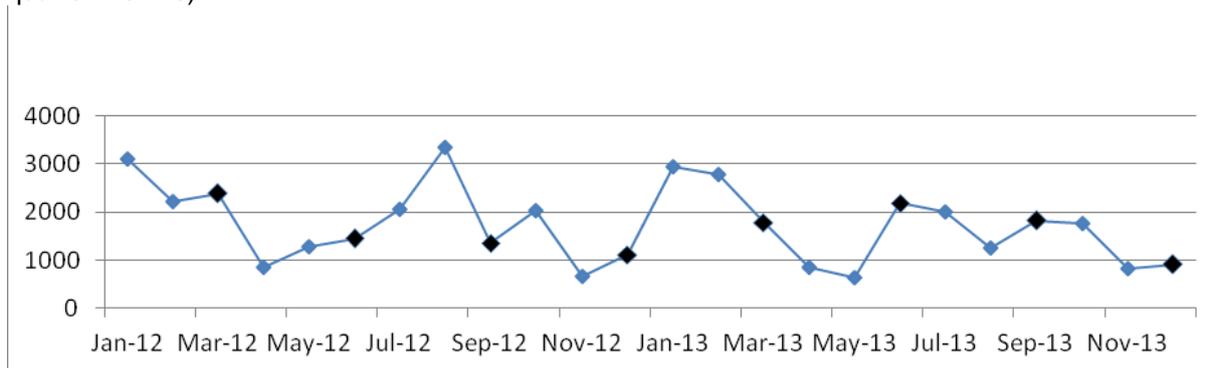


Figure 2 illustrates that there is no significant increase in the number of calls in the round in employment months in comparison to non-employment months.

## Monthly Business Survey

**Figure 3:** Unweighted and weighted (turnover) response rates on Monthly Business Survey results day (the darker shaded points refer to quarter months)

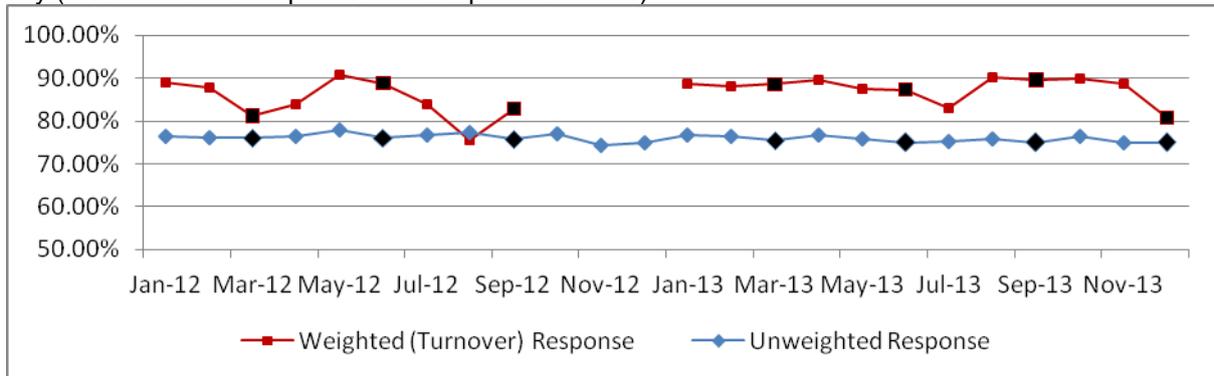


Figure 3 illustrates that there are no clear troughs in the employment months for either unweighted or weighted response rates. Weighted response data was not provided for October 2012 to December 2012.

**Figure 4:** Number of calls made in the round for Monthly Business Survey (the darker shaded points refer to quarter months)

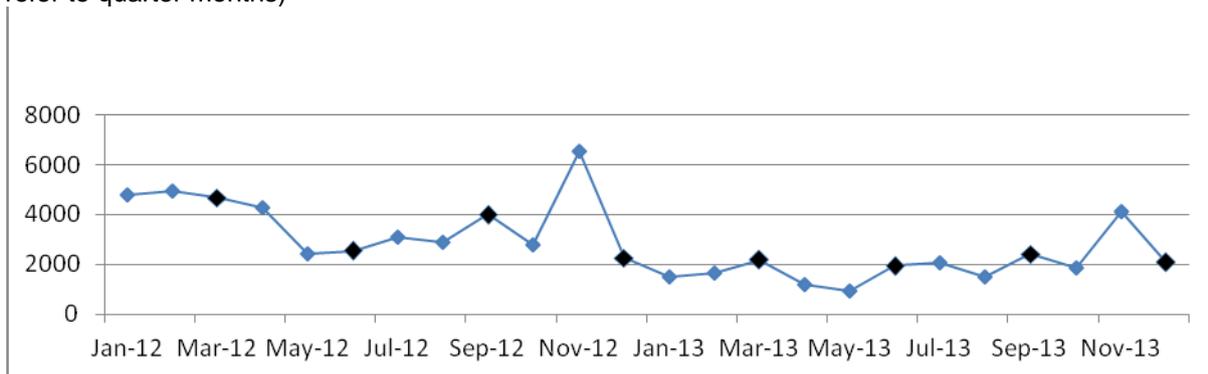


Figure 4 illustrates that there is no significant increase in the number of calls in the round in employment months in comparison to non-employment months.

## Construction Survey

**Figure 5:** Unweighted and weighted (turnover) response rates on Construction Survey results day (the darker shaded points refer to quarter months)

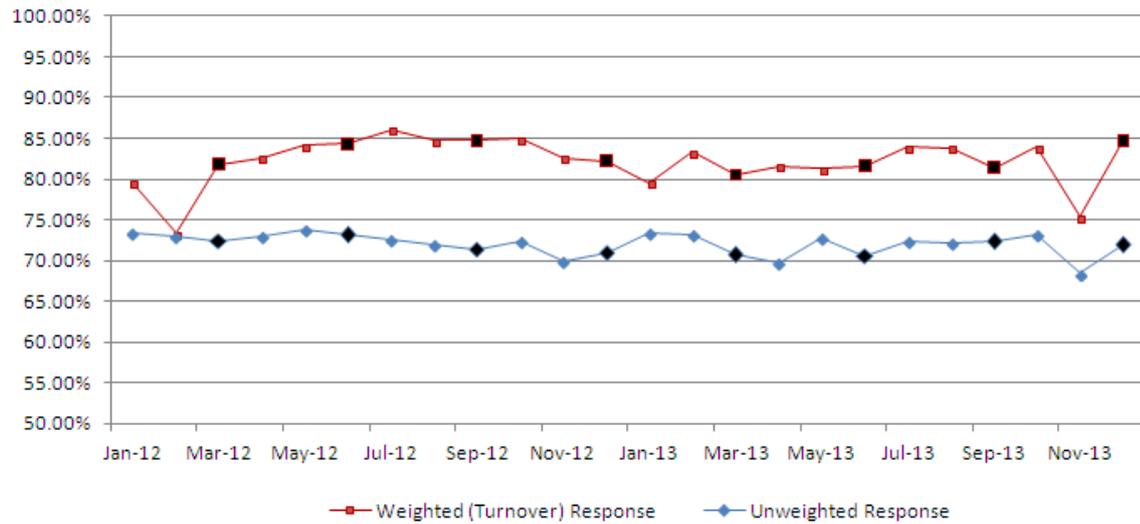


Figure 5 illustrates that there are no clear troughs in the employment months for either unweighted or weighted response rates. The biggest drops occur in February 2012 and November 2013 which are both non-employment months

**Figure 6:** Number of calls made in the round for Construction Survey (the darker shaded points refer to quarter months)

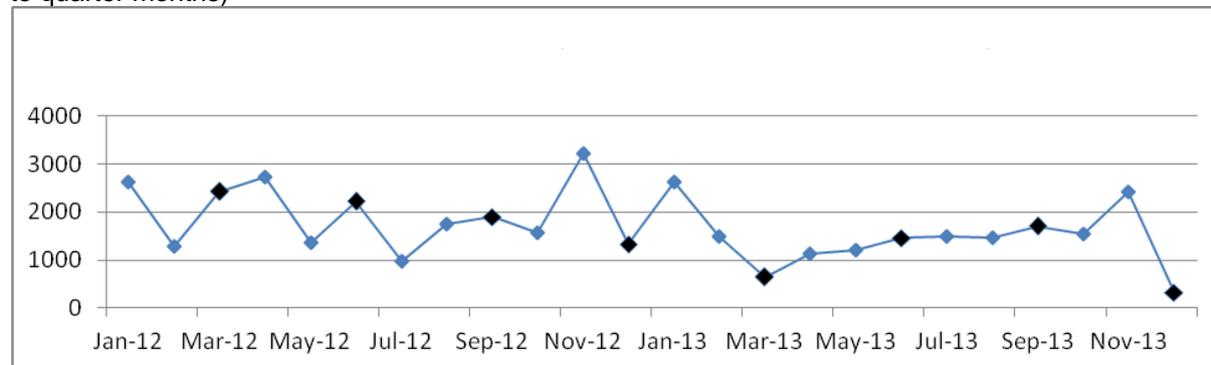


Figure 6 illustrates that there is no significant increase in the number of calls in the round in employment months in comparison to non-employment months. The number of calls made in December 2013 is in fact lower than other months, which is attributed to efforts by ONS staff in educating responders.

## **Conclusion**

The investigation of Retail Sales Survey, Monthly Business Survey and Construction Survey response rates and calls made during each round identified no real trend in the series. Therefore, from the analysis undertaken here, there is no evidence that the collection of employment data in quarter months impacts on response rates or the level of response chasing required to meet targets.

## **References**

Cotterell, B. *Investigating the Effect of Quarterly Collection of Employee Jobs data on the Estimated Standard Error of Change for Total Turnover on the Monthly Business Survey, 2014*