Quarterly Financial Statistics: Refreshing samples

Statistics South Africa (Stats SA) conducts a quarterly survey that provides private sector enterprises financial information on selected income and expenditure items, inventories, capital expenditure, the carrying value of assets and selected operating financial ratios. These estimates are used by the private sector for various purposes, including that of comparative business and industry performance analyses. Furthermore, enterprises can assess their own performance against that of their industry, in terms of a range of operating ratios. The Quarterly Financial Statistics (QFS) is also used by the national accountants for the purposes of compiling the estimates of the Gross Domestic Product (GDP). Other users determine size and other trends from the QFS.

The estimates in the QFS are based on a sample of about 5000 enterprises drawn from a population of VAT registered enterprises. The sample is drawn each year for a variety of reasons, such as removing dead units, reducing respondent burden on smaller businesses, and thus ensuring the sample profile takes into cognisance an evolving economy. The shift to the new sample is conducted with the aim of obtaining an updated and more representative sample. The new sample reflects a business population incorporating changes due to economic conditions, quality improvements to the business sampling frame, restructuring of enterprises and sample processing improvements.

The QFS is based substantially on larger businesses (referred to as size group 1, or S1, companies), comprising 56% of the sample, while the remaining portion of the sample consists of medium, small and very small businesses (referred to as size groups 2, 3, and 4 companies – S2, S3 and S4 respectively). The S1 enterprises generally remain in the QFS sample year after year; while the S2, S3, and S4 enterprises tend to drop in and out (rotate) of the sample every few years.

The December 2012 publication contains estimates for the quarter ending September 2012 and December 2012, based on the newly drawn 2012 sample (the QFS 2012 sample). Samples are normally drawn each year and the resulting level changes in estimates are indicated when the new sample is implemented. The new sample was implemented in September 2012. To determine the level change in turnover between the new and old samples, the September 2012 quarter was investigated, while estimates for the December 2012 quarter was generated only on the new sample.

The level of turnover for the quarter ending September 2012, based on the QFS 2012 sample, closely tracks the turnover of the QFS sample drawn in 2011. The total turnover for the September 2012 quarter of the new sample is 1,9% lower than

the total turnover estimated for the same quarter based on the old sample, as indicated in Figure 1.

Figure 1: September 2012, QFS Turnover – Comparison of the 2011 and 2012 sample
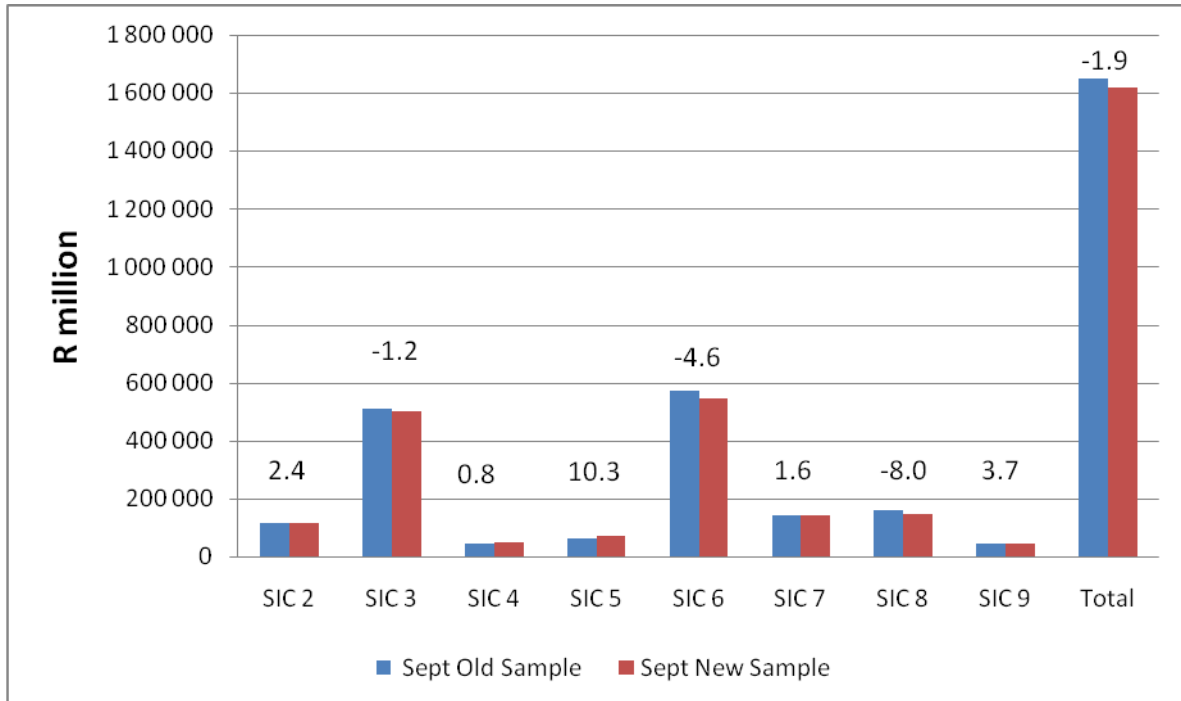
Investigations indicate differences in the level of estimates associated with the QFS 2012 sample when compared to estimates generated for the same quarter based on the QFS2011 sample – these differences can be attributed to various factors such as different final weights and the response of the new, non-overlapping enterprises in the 2012 sample in smaller size groups. The enterprises from the 2011 sample in these smaller size groups had either not responded or were dead units (closed down, dormant, liquidated, etc.) and as a result no data was received.
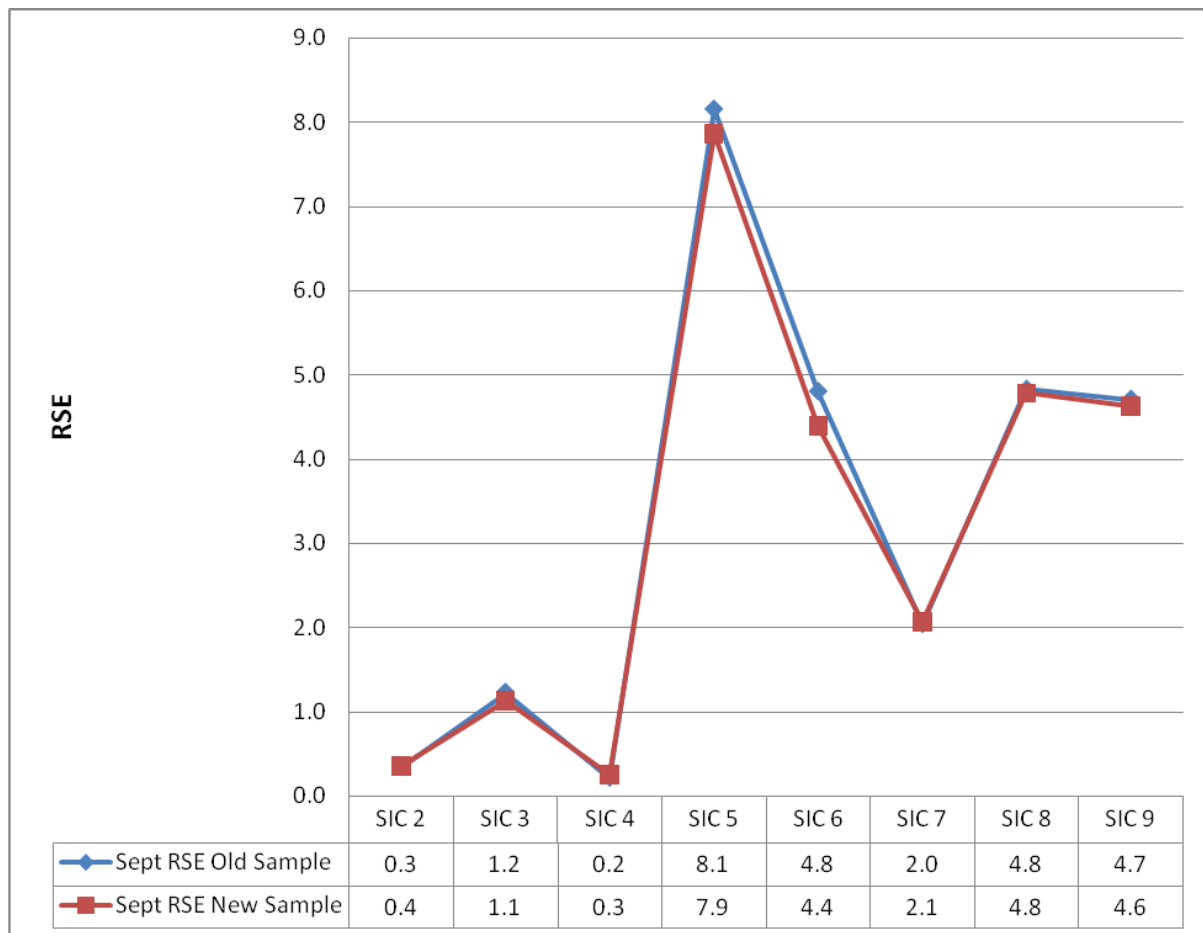
The differences in estimates for the same quarter between the two samples are mainly due to:

  a. The presence of non-overlapping enterprises.
  b. A change in the composition of the population results in different design weights between the two samples.
  c. A difference in response rates between the two samples within stratum resulting in a difference in final weights.
  d. The exit and entry of large units between the samples. This could be due to a change in structure of the enterprise, reclassifications or the enterprise no longer having a Business Frame turnover large enough to be considered a size group 1 which is fully enumerated.
  e. Differences in classification of overlapping enterprises between the two samples.
  f. A change in size group of overlapping enterprises resulting in different weighted data between the two samples despite the actual data being the same.

Because the entire population is not surveyed, the published estimates are subject to sampling error. In calculating the standard error for the statistics in the QFS publication, it is preferred to produce a smoothed standard error using the measure of size variable i.e. turnover as this approach takes account of the variability in standard error estimates for quarterly statistics. This estimated standard error would then be used as an indication of the sampling error for the current published series.

Figure 2 for the quarter ending September 2012, indicates the relative standard error obtained for the 2011 and 2012 samples. The overall average relative standard error on turnover improved by -3,0 percent when comparing estimates derived from the 2012 sample to that of the 2011 sample, this improvement indicates a more representative sample.

Figure 3: Relative Standard Error for 2011 and 2012 samples

	SIC 2	SIC 3	SIC 4	SIC 5	SIC 6	SIC 7	SIC 8	SIC 9
Sept RSE Old Sample	0.3	1.2	0.2	8.1	4.8	2.0	4.8	4.7
Sept RSE New Sample	0.4	1.1	0.3	7.9	4.4	2.1	4.8	4.6

The latest *Quarterly financial statistics* (QFS) of the private sector for the quarter ended December 2012 was published on 28 March 2013 and indicates a 2,0% increase in enterprise turnover when compared to the quarter ended September 2012. The trade, manufacturing, transport, storage and communication and community, social and personal services industries reported a combined increase of 3,9%. The trade reflected the largest increase between the September and December 2012 quarters.

The seasonal increase in demand for goods and services, especially in the trade, manufacturing and telecommunication sectors, following the quarter ended December 2012 together with higher production levels increased turnover, which is evident in four of the eight industries covered by the survey (see Figure 3). Decreases in the remaining industries were attributed to industrial strike action in the mining sector, decrease in electricity consumption and decrease in the demand for selected health care services.

Figure 3: QFS Turnover – December 2012 compared to September 2012
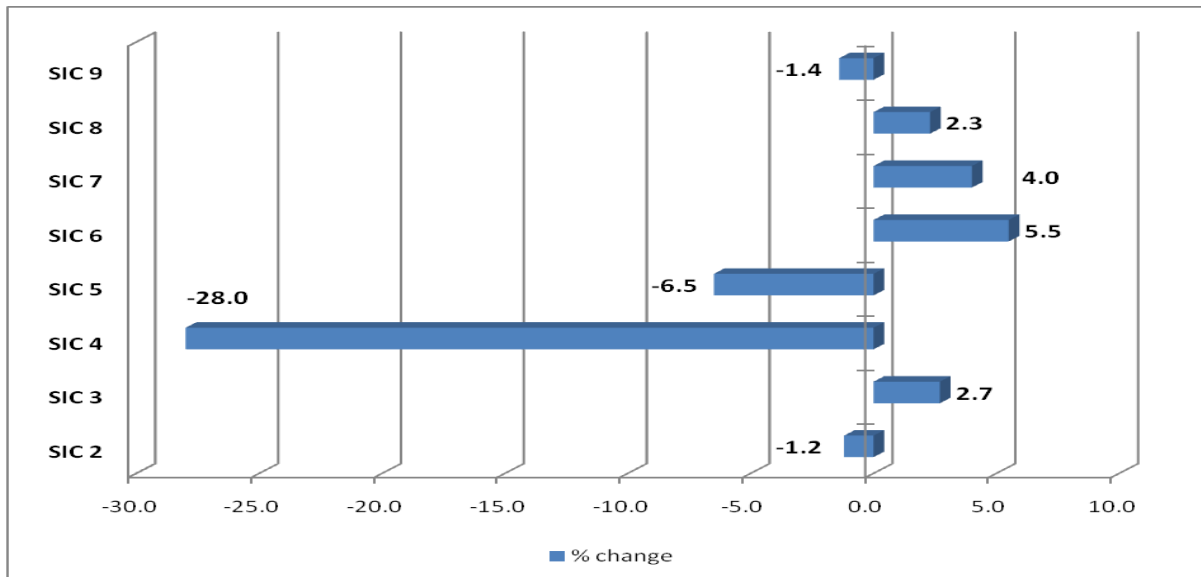
Data source: *Quarterly Financial Statistics* (P0044), obtainable from the Stats SA website: www.statssa.gov.za

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