

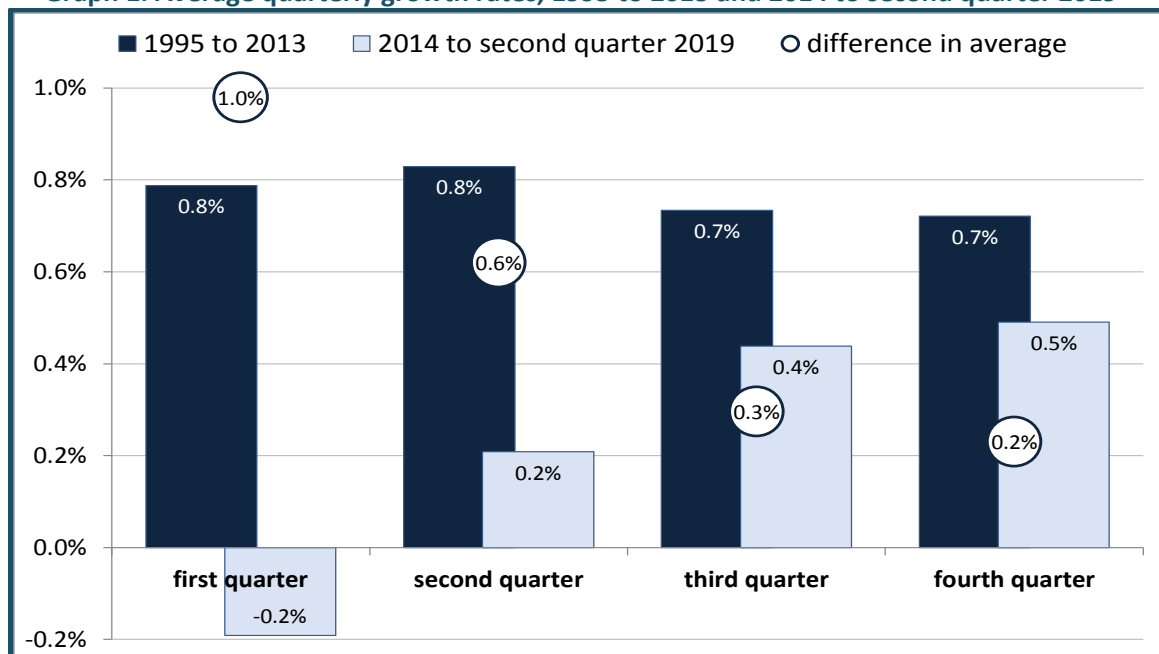
Briefing Note: Seasonality in the GDP Data

According to official Statistics South Africa GDP data, even after adjusting the data to remove seasonal variations, the economy contracted in the first quarter of 2019 in five of the six years from 2014 to 2019. In contrast, the economy reportedly shrank just twice in the second quarter, once in the third quarter, and not at all in the fourth.

These data point to an extraordinary shift in the GDP data, with the emergence of an annual cycle in the seasonally adjusted quarterly figures. Yet seasonal adjustment should compensate for regular seasonal changes such as the growing cycle in agriculture, the holiday sales for retail, and closedown periods in mining, manufacturing and construction. By extension, after the adjustment there should not be a regular significant variation between the quarters in the average growth figures.

In practice, as the following graph shows, from 1995 to 2013 the seasonally adjusted data saw a uniform average rate of growth across all four quarters, ranging from 0.7% to 0.8% a quarter (in actual, not annualised, terms). In contrast, from 2014 a marked quarterly variation has emerged even after the data have been seasonally adjusted. From the first quarter of 2014 to the second quarter of 2019, the economy reportedly shrank 0.1% in the first quarter; then grew by 0.3% in the second quarter; 0.4% in the third; and 0.5% in the fourth.

Graph 1. Average quarterly growth rates, 1995 to 2013 and 2014 to second quarter 2019

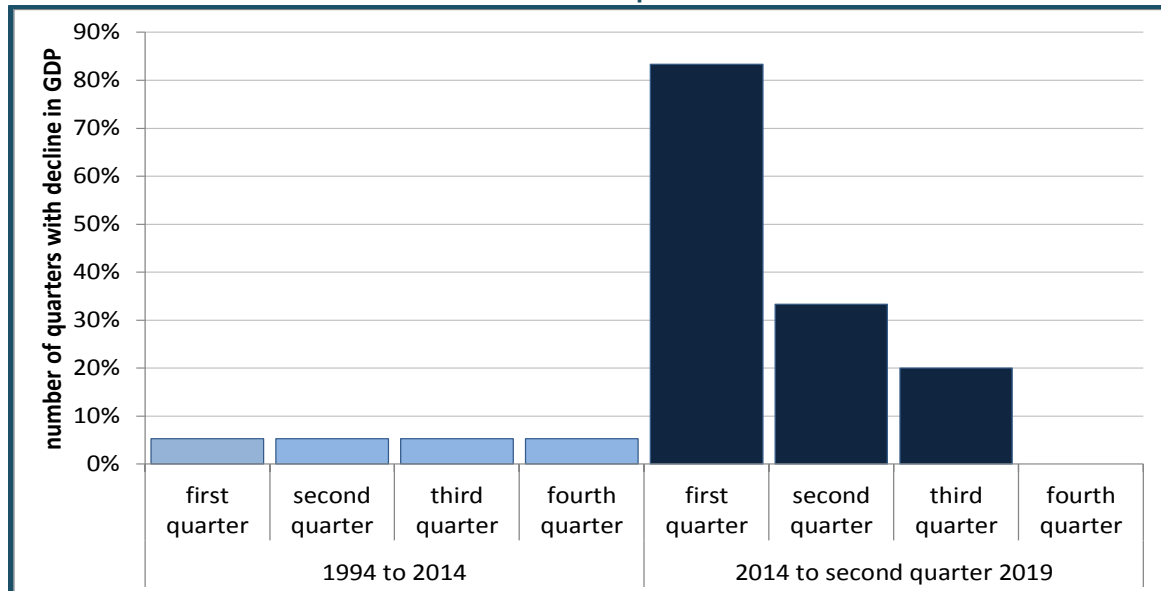


Source: StatsSA GDP quarterly figures. Excel spreadsheet (previous format) downloaded from www.statssa.gov.za in June 2019

The following graph compares the reported economic contractions by quarter from 1995 to 2013 and from 2014 to the second quarter of 2019.

For each quarter, it shows the percentage of quarters reporting a decline in the GDP. In the first period, there is no difference across the quarters; in the second, an unambiguous cyclical variation emerges.

Graph 2. Share of quarters reporting a decline in GDP, by quarter, 1995 to 2013 and 2014 to second quarter 2019

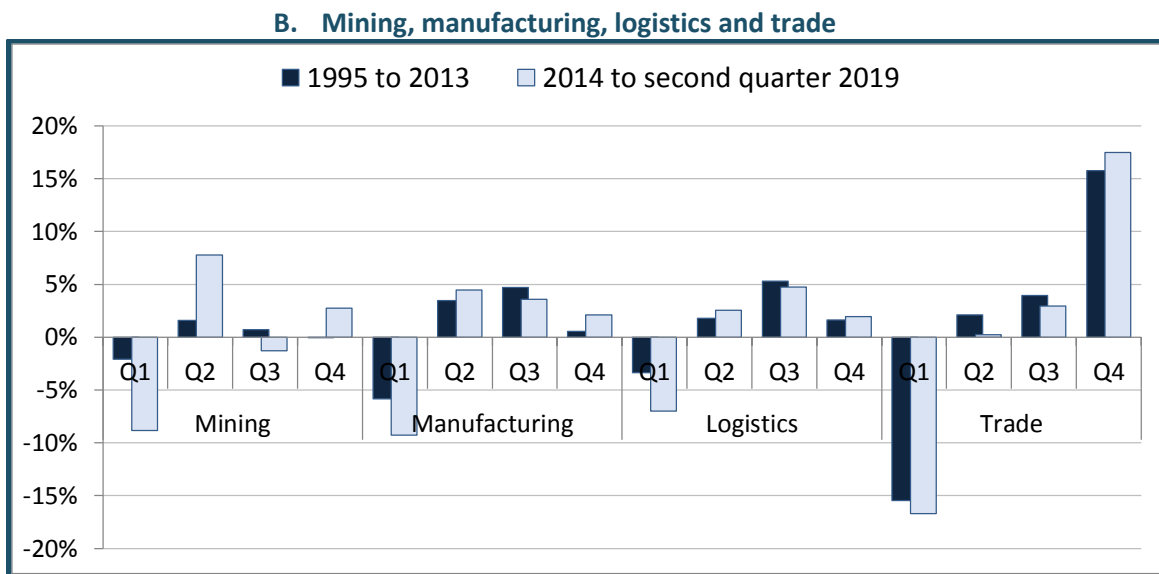
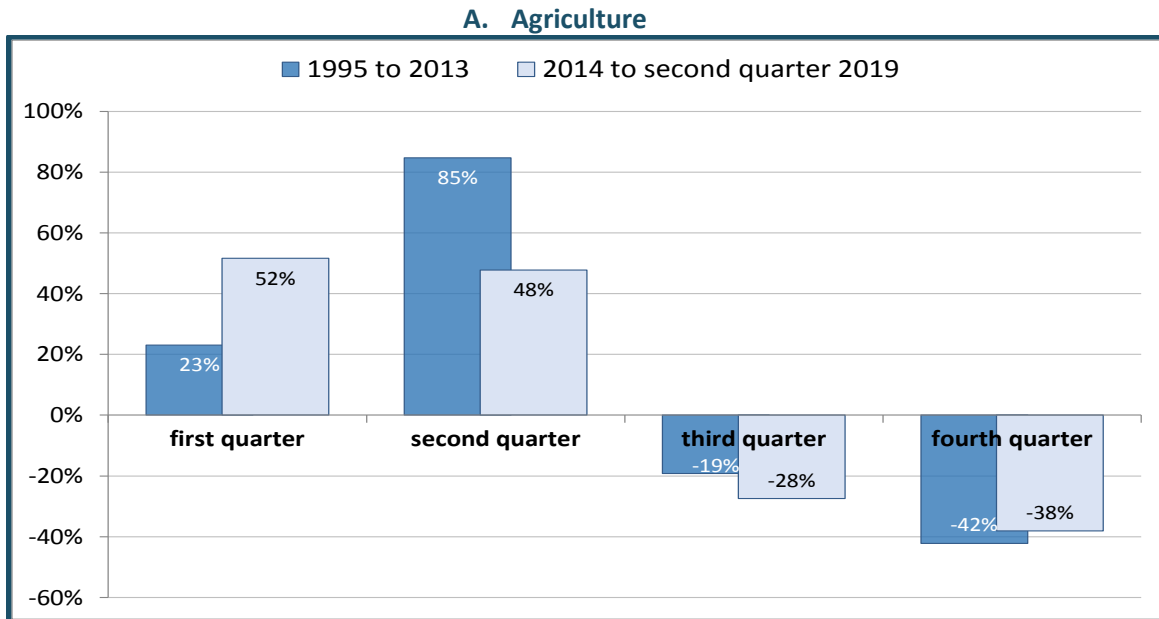


Source: StatsSA GDP quarterly figures. Excel spreadsheet (previous format) downloaded from www.statssa.gov.za in June 2019.

The difficulties with the seasonal adjustment of GDP data may arise from changing seasonal production patterns in major industries. These changes have been most obvious in agriculture but are also visible in mining, manufacturing, trade and telecommunications, and retail and wholesale trade.

As the following graphs show, there was a significant change in all these industries in the quarterly average growth rates from 2014 to 2019 compared to 1995 to 2013.

Graph 3. Changes in actual (not seasonally adjusted) average quarterly growth rate by industry, 1995 to 2013 and 2014 to second quarter 2019



Source: StatsSA GDP quarterly figures. Excel spreadsheet (previous format) downloaded from www.statssa.gov.za in June 2019.

Figures on quarterly GDP growth are building blocks in economic decisions across government and the private sector. Moreover, it does not help the confidence of either business or citizens to be told repeatedly that the economy has contracted. It is therefore particularly important that the quarterly GDP data provide an accurate representation of the underlying growth trends, stripped of seasonal variations.