Better Measure of Output: GDP or GDI?

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By Michael T. Owyang

The Bureau of Economic Analysis (BEA) produces two measures of national output which, in theory, should be equivalent. In practice, however, there are often substantive differences.

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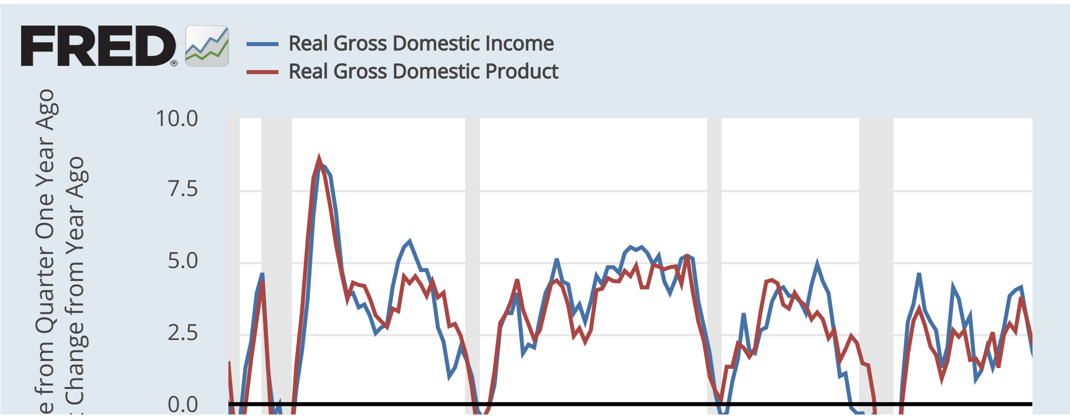
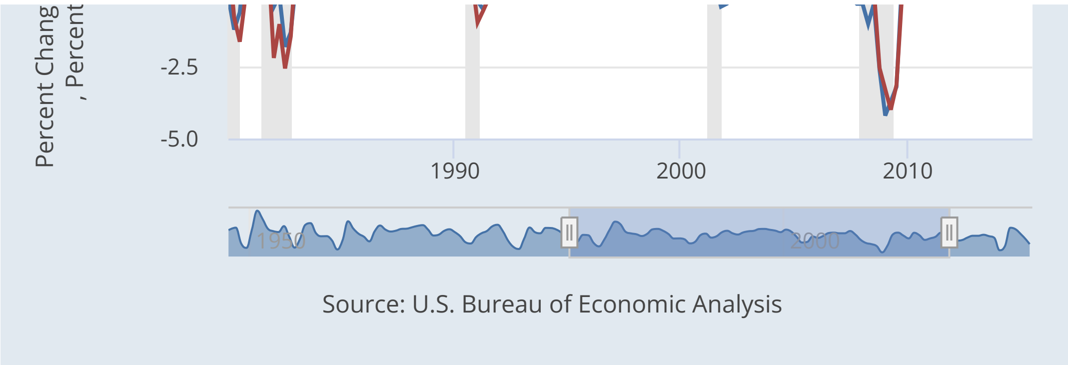
The first measure of output produced by the BEA is the well-known gross domestic product (GDP). GDP is defined as the value of final goods and services and is measured on the production side. One typical method of measuring GDP is to measure the total value of all goods and services and then subtract the value of the intermediate consumption. The result is the value added during the quarter.

The second measure of output produced by the BEA is gross domestic income (GDI) and is measured by summing of wages, profits, interest payments and investments.

In principle, these two series measure the same object.[1] Indeed, the figure below shows that the two series have very similar dynamics. The blue line plots the percent change in GDI from 1980 to the present; the red line shows the percent change in GDP for the same period.



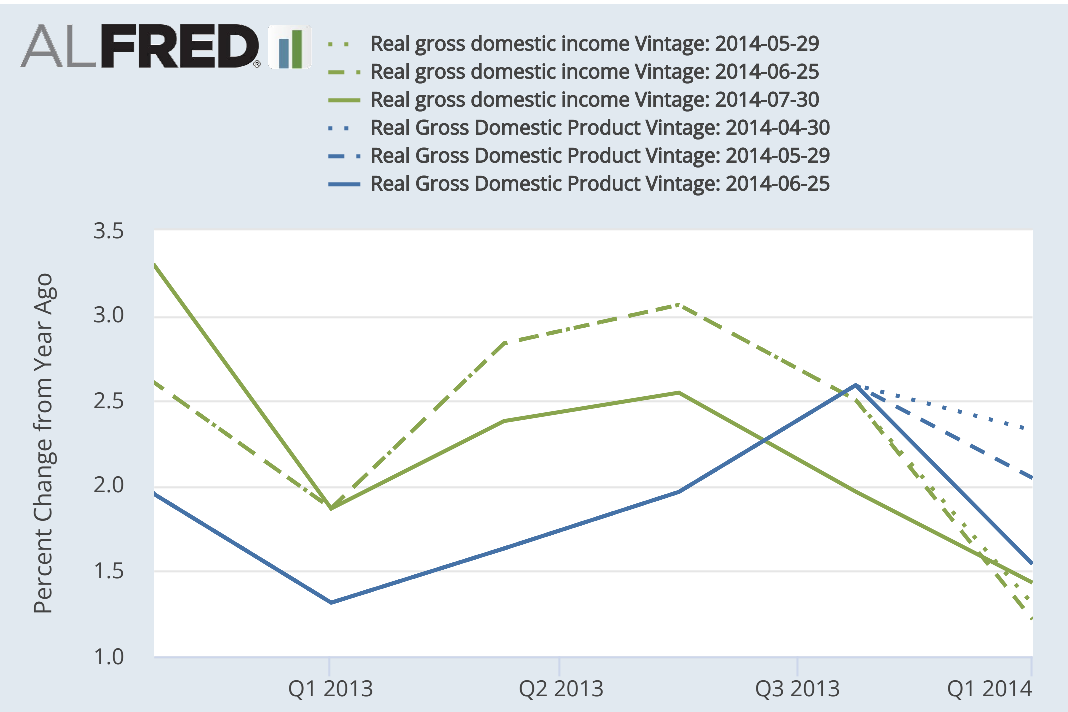


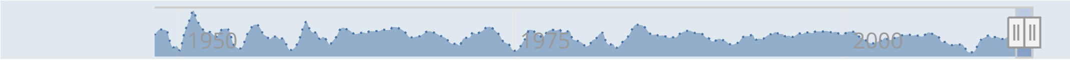
While the difference between the two series is usually small, it can vary up to a full percentage point for some quarters. The difference also varies over time, suggesting that the difference is made up of more than minor accounting differences.

Because the two series are measured differently, their measurement error varies over time. This is partly because components of one are more easily (or more timely) estimated than the other. Some forecasters have attempted to exploit these changes in the measurement error, suggesting that there may be a systematic variation over the business cycle.

Federal Reserve economist Jeremy Nalewaik explored the differences between GDP and GDI in greater detail. Nalewaik argued that GDI might be a better indicator, as advance estimates of GDI are closer to the final estimates of both measures. Nalewaik evaluated GDP and GDI by comparing vintages of the (unrevised) data to show that early estimates of GDI captured the downturn in the 2007-09 recession better than GDP, which could have given policymakers advance notice.

Using data from ALFRED (the St. Louis Fed's database for archival economic data), the figure below shows GDP and GDI vintages for the first quarter of 2014 as an example. The green lines are GDI, and the blue lines are GDP. Dots represent the advance estimate, dashes represent the second estimate, and solid lines represent the final estimate.





GDI was estimated initially at 1.31 percent, revised down slightly to 1.22 percent and finally revised up to 1.43 percent for a net change of 0.12 percentage points. GDP started at 2.33 percent, and was revised down 0.79 percentage points to 1.54 percent in the final estimate. As Nalewaik suggested, the initial estimates of GDI were closer to the final estimate of both measures.[2]

For now, GDP remains the prominent measure of output cited by both the media and policymakers. In the end, however, it may be prudent to use both series (or perhaps a measurement combining both) to measure output.

Notes and References

[1] There are minor accounting differences in the two series, including indirect taxes and transfers and depreciation.

[2] Garcia, Cardiff. "The Case for GDI: a Q&A with Jeremy Nalewaik." *FT Alphaville*, Sept. 26, 2011.

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About the Author

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