VOLUME 10, NUMBER 21 NOVEMBER 5, 2015

MACROECONOMIC ADVISERS'
MACRO FOCUS

The Atlanta Fed's GDPNow and MA GDP Tracking: An Update

Back in May, we issued a note comparing and contrasting the Atlanta Fed's GDPNow methodology to the methodology underlying our GDP tracking.[1] While there are notable differences between the two methodologies, we concluded that (1) the similarities are probably more important than the differences, and (2) our track records are comparable. Since then, two additional quarters of GDP tracking have passed, and we thought it would be worthwhile to update and expand upon our previous note. In short, the same conclusions hold.

MA Tracking vs GDPNow

Mean Absolute Errors

	Just Prior to GDP		About 2½ Months Prior to GDP	
	MA	GDPNow	MA	GDPNow
Last 6 qtrs	0.6	0.6	0.7	0.9
Last 10 qtrs	0.6	0.5	0.8	1.1
All 17 qtrs	0.5	0.7	0.7	1.0

Median Absolute Errors

	Just Prior to GDP		About 2½ Months Prior to GDP	
	MA	GDPNow	MA	GDPNow
Last 6 qtrs	0.5	0.6	0.5	0.8
Last 10 qtrs	0.7	0.4	0.5	1.1
All 17 qtrs	0.5	0.4	0.4	0.7

Root Mean Squared Errors

	Just Prior to GDP		About 2½ Months Prior to GDP	
	MA	GDPNow	MA	GDPNow
Last 6 qtrs	0.7	0.7	1.0	1.2
Last 10 qtrs	0.7	0.6	1.1	1.3
All 17 qtrs	0.7	0.9	0.9	1.2

Notes: "Last 6 qtrs" covers 2014:Q2 - 2015:Q3. "Last 10 qtrs" covers 2013:Q2 - 2015:Q3. "All qtrs" covers 2011:Q3 - 2015:Q3.

There are many ways to evaluate the forecasting performance of a tracking methodology. In our previous *Macro Musing*, we highlighted three measures of forecast error at two different forecast horizons over three different tracking periods.[2] The nearby table updates these metrics to include the last two quarters of GDP tracking.[3] As was evident in our previous note, the tracking performance of the two methodologies is comparable, no matter which metric is chosen.

Consider, for example, the top panel, which reports mean absolute forecast errors. Over the last 6 quarters, for the short forecast horizon (just prior to the release of GDP), the mean absolute forecast error for our tracking and for GDPNow are equal (0.6 percentage point). Over the last 10 quarters, GDPNow marginally beats us. Over all quarters for which GDPNow has been live, we beat GDPNow. For the longer forecast horizon (about 2½ months prior to the release of GDP), we beat GDPNow for all tracking periods shown. But we wish to emphasis that these are small samples from which to draw conclusions, so it's not really clear from these figures alone that one methodology is better than the other.

[1] "The Atlanta Fed's GDPNow and MA GDP Tracking," *Macroeconomic Advisers' Macro Musing*, volume 8, number 3. May 21, 2015.

[2] The three measures of forecast error we highlighted were mean absolute error, median absolute error, and root mean squared error. The two forecast horizons were just prior to the release of advance GDP and about 2½ months prior to the release of advance GDP. The three periods over which we compared our tracking to GDPNow were the last four quarters, the last eight quarters, and the entire real-time history of GDPNow, which began with the tracking of 2011:Q3.

[3] Rather than rolling the metrics covering the last four and eight quarters forward, we expanded those recent tracking periods to include the last two tracking quarters.

BEN HERZON
(314) 721-4747
herzon@macroadvisers.com

231 SOUTH BEMISTON AVE.
SUITE 900
ST. LOUIS, MO 63105

E-MAIL
MAIL@MACROADVISERS.COM

VISIT US ON THE WEB
WWW.MACROADVISERS.COM

Another way to evaluate forecast performance is to integrate the forecast error over the entire tracking period. That is, while some may value forecast accuracy at a given forecast horizon (e.g., one day before GDP), others may value accuracy more generally over the entire tracking period. To get at this, we assembled the history for GDPNow and our tracking on every business day over the last six quarters (2014:Q2 – 2015:Q3). On business days for which there was no tracking update, the previous business day's value is repeated.

The nearby charts show these daily tracking histories. Also shown on the charts is BEA's advance estimate. One way to integrate the forecast errors over the tracking period is to calculate the average absolute daily error (AADE) within a quarter. That is, for every business day within a tracking quarter, we calculate the absolute difference between the GDP forecast on that day and BEA's eventual advance estimate.[4] The straight average of those forecast errors within a tracking quarter is the AADE.[5] For some quarters, it is evident from the chart which methodology produced a lower AADE, while in others, it's not as clear. Over the six quarters shown, GDPNow has a lower AADE in two quarters (2015:Q1 and 2015:Q3), while we have a lower AADE in the remaining four. Averaged over all business days across these six tracking quarters, our AADE is 0.59 percentage point, while GDPNow is 0.66 percentage point.[6]

As we noted in our early *Macro Musing*, the two methodologies analyzed here share important similarities that are manifested in similar track records. In this note, we expand the evaluating metrics to include the average absolute daily error, which implicitly assigns equal weight to absolute forecast errors at all horizons within a tracking quarter. Based on this metric, the two methodologies remain comparable, with perhaps a slight edge in recent quarters to our tracking.

Other integrated metrics can be imagined that assign weights that vary with the forecast horizon. The above table shows very similar track records at a short forecast horizon (just before GDP) and perhaps a slight edge to our tracking at a longer forecast horizon (about 2½ months prior to GDP). Therefore, we expect that any integrated metric that assigns more weight to short horizons will favor neither tracking methodology, while any integrated metric that assigns more weight to longer horizons might favor our tracking methodology.

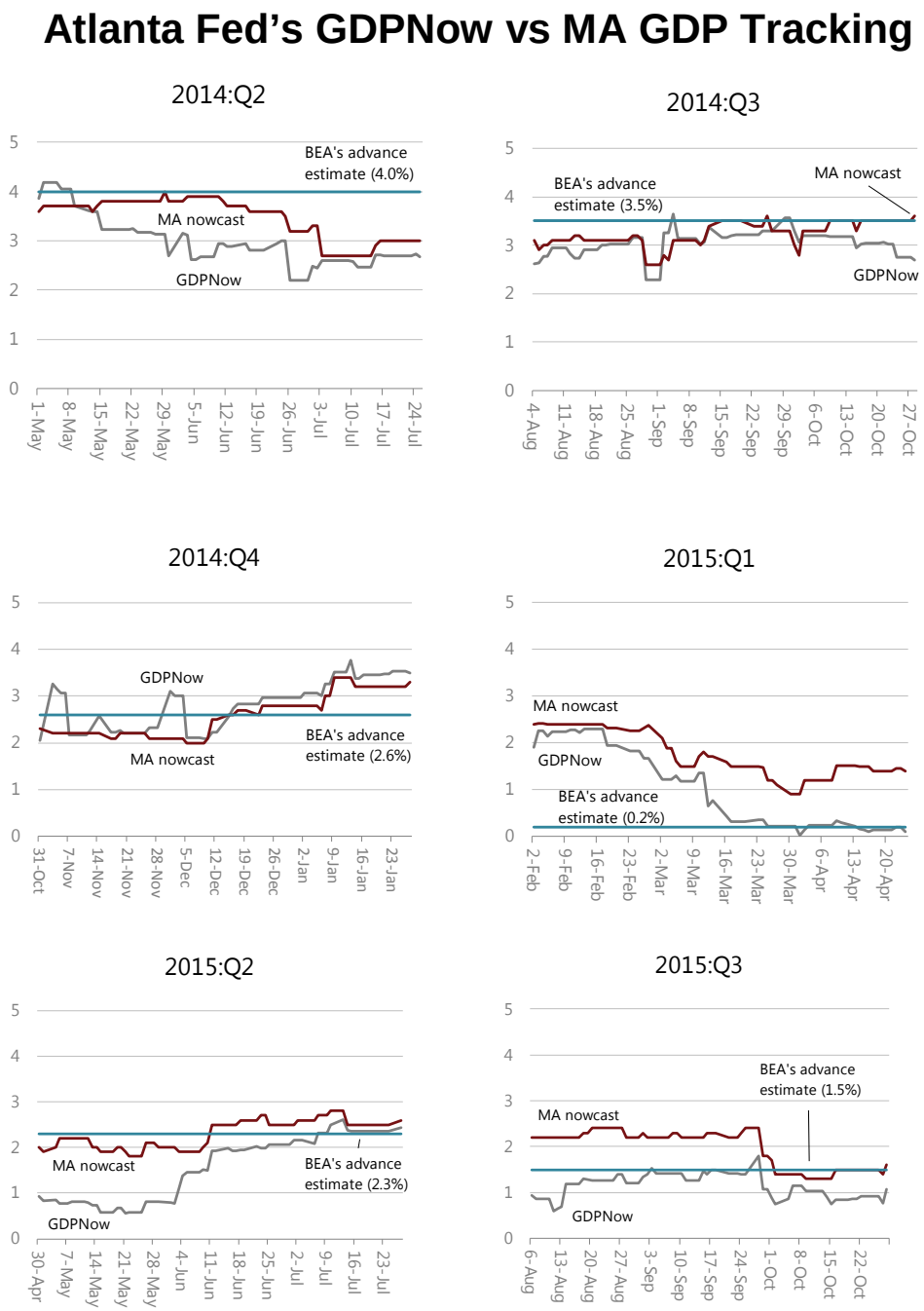
In any event, the bottom line remains the same as in our previous *Macro Musing*. We like GDPNow, and we are beginning a process of refining our methodology to take advantage of the novel elements of GDPNow that we believe will improve our forecasting performance. But based on the track record to date, neither methodology clearly dominates the other.

---

[4] By "tracking quarter," we mean the period over which GDP tracking is live for a given quarter. In particular, we are defining tracking quarters to include the period over which GDPNow produces a nowcast for a given calendar quarter. By this definition, a tracking quarter typically begins one month following the beginning of a calendar quarter and concludes roughly one month following the end of the calendar quarter, when the advance estimate of GDP is released.

[5] This is just one way to do it. Those more concerned with forecast errors early in the tracking quarter could up-weight those errors, while those more concerned with forecast errors late in the tracking quarter could up-weight those errors. Those who wish to assign an increasing "cost" to larger forecast errors at any point in time could calculate the RMSE instead of the average absolute daily error. The appropriate metric is determined by the loss function of the consumer of the forecast.

[6] We have not calculated the AADE for periods prior to the last six tracking quarters. However, we expect to see similar results. A very rough estimate of the AADE can be gleaned from the table above by calculating the straight average of the mean absolute error just prior to GDP and about 2½ months prior to GDP. For all periods shown — last 6 quarters, last 10 quarters, all 17 quarters — this average is lower for our tracking than for GDPNow.



Source: Macroeconomic Advisers, Federal Reserve Bank of Atlanta, and Bureau of Economic Analysis