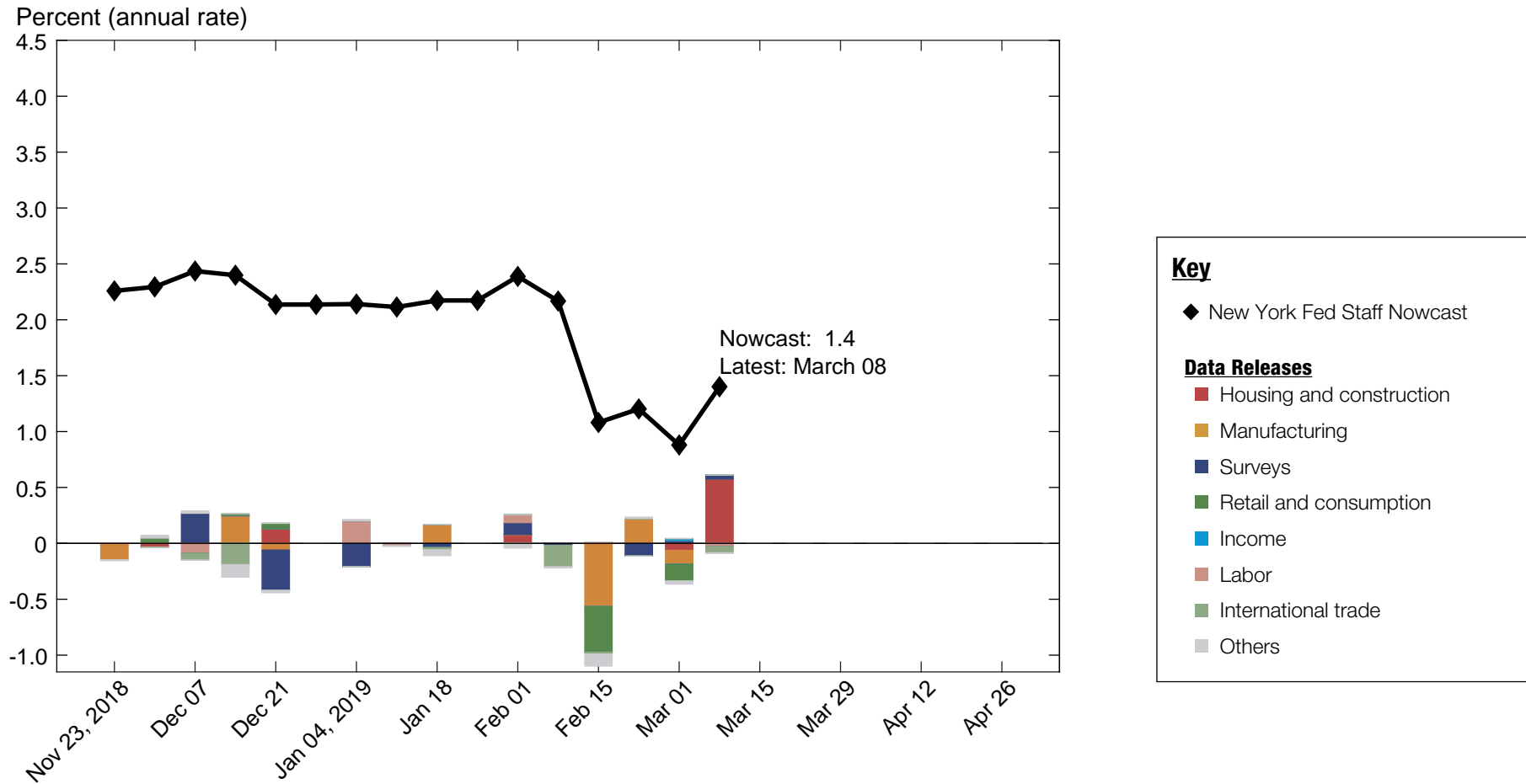# NOWCASTING REPORT

Updated: March 8, 2019

- The New York Fed Staff Nowcast stands at 1.4% for 2019:Q1 and 1.5% for 2019:Q2.

- News from this week's data releases increased the nowcast for 2019:Q1 by 0.5 percentage point and increased the nowcast for 2019:Q2 by 0.3 percentage point.

- The increase was driven by positive surprises from housing data and the ISM non-manufacturing survey, which was only partially offset by negative surprises from labor data.

Percent (annual rate)

Nowcast: 1.4
Latest: March 08

Key

◆ New York Fed Staff Nowcast

Data Releases
- ■ Housing and construction
- ■ Manufacturing
- ■ Surveys
- ■ Retail and consumption
- ■ Income
- ■ Labor
- ■ International trade
- ■ Others

Source: Authors' calculations, based on data accessed through Haver Analytics.
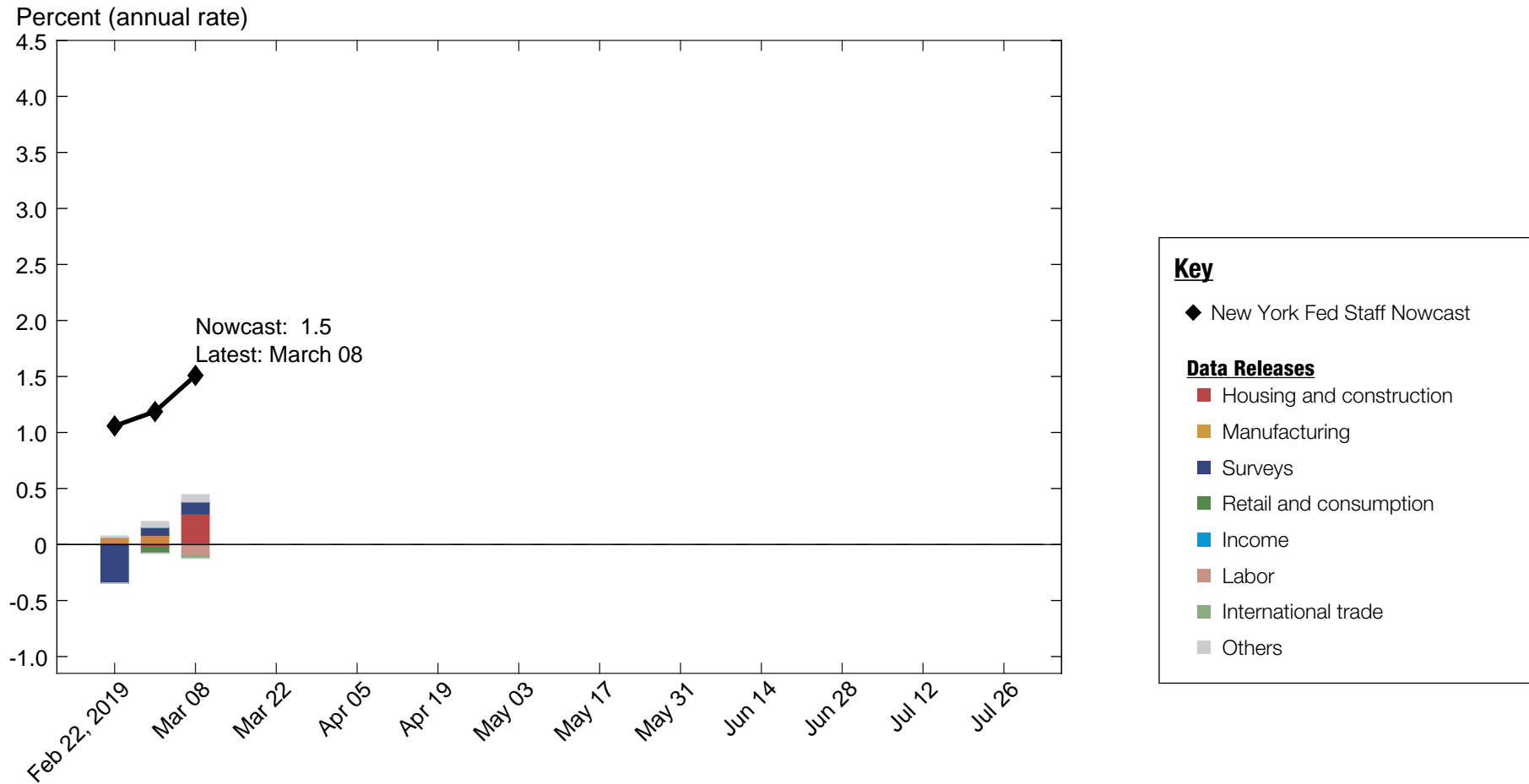Note: Colored bars reflect the impact of each data release on the nowcast.

1.1 | Nowcast Detail

Legend: ■ Housing and construction ■ Manufacturing ■ Surveys ■ Retail and consumption ■ Income ■ Labor ■ International trade ■ Others

Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b − a)]	
Feb 08									**2.17**
	10:00 AM Feb 12	■ JOLTS: Job openings: Total	Dec	Level chg. (thousands)	43.3	169.0	*0.061	0.008	
	8:40 AM Feb 13	■ CPI-U: All items	Jan	MoM % chg.	0.109	-0.020	0.133	-0.017	
	8:40 AM Feb 13	■ CPI-U: All items less food and energy	Jan	MoM % chg.	0.168	0.240	0.170	0.012	
	8:30 AM Feb 14	■ Retail sales and food services	Dec	MoM % chg.	0.418	-1.24	0.245	-0.408	
	8:30 AM Feb 14	■ PPI: Final demand	Jan	MoM % chg.	0.109	-0.085	0.085	-0.016	
	10:00 AM Feb 14	■ Inventories: Total business	Nov	MoM % chg.	0.320	-0.099	-0.011	0.004	
	8:30 AM Feb 15	■ Import price index	Jan	MoM % chg.	-0.495	-0.480	0.024	0.000	
	8:30 AM Feb 15	■ Export price index	Jan	MoM % chg.	-0.153	-0.555	0.044	-0.018	
	8:30 AM Feb 15	■ Empire State Mfg. Survey: General business conditions	Feb	Index	8.36	8.80	0.008	0.003	
	9:20 AM Feb 15	■ Industrial production index	Jan	MoM % chg.	-0.010	-0.579	0.437	-0.248	
	9:20 AM Feb 15	■ Capacity utilization	Jan	Ppt. chg.	-0.044	-0.609	0.569	-0.322	
		■ Data revisions						-0.086	
Feb 15									**1.08**
	8:30 AM Feb 21	■ Manufacturers' new orders: Durable goods	Dec	MoM % chg.	-0.653	1.18	0.018	0.033	
	8:30 AM Feb 21	■ Manufacturers' shipments: Durable goods	Dec	MoM % chg.	-0.526	0.796	0.107	0.142	
	8:30 AM Feb 21	■ Mfrs.' unfilled orders: All manufacturing industries	Dec	MoM % chg.	0.265	-0.097	-0.026	0.010	
	8:30 AM Feb 21	■ Manufacturers' inventories: Durable goods	Dec	MoM % chg.	0.344	0.210	-0.280	0.038	
	8:30 AM Feb 21	■ Phila. Fed Mfg. business outlook: Current activity	Feb	Index	16.6	-4.10	0.005	-0.114	
		■ Data revisions						0.013	
Feb 22									**1.20**
	10:00 AM Feb 25	■ Merchant wholesalers: Inventories: Total	Dec	MoM % chg.	0.358	1.09	-0.145	-0.106	
	8:30 AM Feb 26	■ Housing starts	Dec	MoM % chg.	-1.44	-11.2	0.011	-0.112	
	8:30 AM Feb 26	■ Building permits	Dec	Level chg. (thousands)	-31.7	4.00	0.001	0.049	
	10:00 AM Feb 27	■ Inventories: Total business	Dec	MoM % chg.	0.384	0.639	-0.074	-0.019	
	8:40 AM Feb 28	■ Real gross domestic product	Q4	QoQ % chg. AR	2.26	2.56	-0.023	-0.007	
	8:30 AM Mar 01	■ PCE less food and energy: Chain price index	Dec	MoM % chg.	0.146	0.187	0.199	0.008	
	8:30 AM Mar 01	■ PCE: Chain price index	Dec	MoM % chg.	0.103	0.058	0.112	-0.005	
	8:30 AM Mar 01	■ Real disposable personal income	Dec	MoM % chg.	0.107	1.04	0.020	0.018	
	8:30 AM Mar 01	■ Real personal consumption expenditures	Dec	MoM % chg.	0.052	-0.596	0.230	-0.149	
	10:00 AM Mar 01	■ ISM mfg.: PMI composite index	Feb	Index	53.6	54.2	0.050	0.029	
	10:00 AM Mar 01	■ ISM mfg.: Prices index	Feb	Index	48.3	49.4	0.006	0.006	
	10:00 AM Mar 01	■ ISM mfg.: Employment index	Feb	Index	52.7	52.3	0.028	-0.011	
		■ Data revisions						-0.024	
Mar 01									**0.88**
	10:00 AM Mar 04	■ Value of construction put in place	Dec	MoM % chg.	0.249	-0.603	0.022	-0.019	
	10:00 AM Mar 05	■ ISM nonmanufacturing: NMI composite index	Feb	Index	55.4	59.7	0.008	0.036	
	10:00 AM Mar 05	■ New single family houses sold	Dec	MoM % chg.	-4.49	3.67	0.005	0.043	
	8:05 AM Mar 06	■ ADP nonfarm private payroll employment	Feb	Level chg. (thousands)	224.4	183.0	*0.629	-0.026	
	8:30 AM Mar 06	■ Exports: Goods and services	Dec	MoM % chg.	0.092	-1.89	0.053	-0.105	
	8:30 AM Mar 06	■ Imports: Goods and services	Dec	MoM % chg.	0.786	2.13	0.039	0.052	
	8:30 AM Mar 07	■ Nonfarm business sector: Unit labor cost	Q4	QoQ % chg. AR	0.769	1.95	0.001	0.001	
	8:30 AM Mar 08	■ All employees: Total nonfarm	Feb	Level chg. (thousands)	184.3	20.0	*0.333	-0.055	
	8:30 AM Mar 08	■ Civilian unemployment rate	Feb	Ppt. chg.	0.006	-0.200	-0.234	0.048	
	8:30 AM Mar 08	■ Housing starts	Jan	MoM % chg.	0.788	18.6	0.022	0.395	
	8:30 AM Mar 08	■ Building permits	Jan	Level chg. (thousands)	-39.3	19.0	0.003	0.156	
		■ Data revisions						-0.006	
Mar 08									**1.40**

Source: Authors' calculations, based on data accessed through Haver Analytics.

Notes: MoM % chg. indicates month over month percentage change. QoQ % chg. indicates quarter over quarter percentage change. The weights with the asterisk are multiplied by 1,000 for legibility.

Percent (annual rate)

Nowcast: 1.5
Latest: March 08

Key

◆ New York Fed Staff Nowcast

Data Releases
- ■ Housing and construction
- ■ Manufacturing
- ■ Surveys
- ■ Retail and consumption
- ■ Income
- ■ Labor
- ■ International trade
- ■ Others

Source: Authors' calculations, based on data accessed through Haver Analytics.
Note: Colored bars reflect the impact of each data release on the nowcast.

2.1 | Nowcast Detail

Legend: ■ Housing and construction ■ Manufacturing ■ Surveys ■ Retail and consumption ■ Income ■ Labor ■ International trade ■ Others

Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b − a)]	
Feb 08									1.96
	10:00 AM Feb 12	■ JOLTS: Job openings: Total	Dec	Level chg. (thousands)	43.3	169.0	*0.076	0.010	
	8:40 AM Feb 13	■ CPI-U: All items	Jan	MoM % chg.	0.109	-0.020	0.162	-0.021	
	8:40 AM Feb 13	■ CPI-U: All items less food and energy	Jan	MoM % chg.	0.168	0.240	0.205	0.015	
	8:30 AM Feb 14	■ Retail sales and food services	Dec	MoM % chg.	0.418	-1.24	0.100	-0.166	
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	8:30 AM Feb 15	■ Empire State Mfg. Survey: General business conditions	Feb	Index	8.36	8.80	0.021	0.009	
	9:20 AM Feb 15	■ Industrial production index	Jan	MoM % chg.	-0.010	-0.579	0.257	-0.146	
	9:20 AM Feb 15	■ Capacity utilization	Jan	Ppt. chg.	-0.044	-0.609	0.331	-0.187	
		■ Data revisions						-0.021	
Feb 15									1.33
	8:30 AM Feb 21	■ Manufacturers' new orders: Durable goods	Dec	MoM % chg.	-0.653	1.18	0.007	0.013	
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	10:00 AM Mar 05	■ New single family houses sold	Dec	MoM % chg.	-4.49	3.67	0.001	0.012	
	8:05 AM Mar 06	■ ADP nonfarm private payroll employment	Feb	Level chg. (thousands)	224.4	183.0	*1.508	-0.062	
	8:30 AM Mar 06	■ Exports: Goods and services	Dec	MoM % chg.	0.092	-1.89	0.023	-0.046	
	8:30 AM Mar 06	■ Imports: Goods and services	Dec	MoM % chg.	0.786	2.13	0.018	0.024	
	8:30 AM Mar 07	■ Nonfarm business sector: Unit labor cost	Q4	QoQ % chg. AR	0.769	1.95	0.001	0.001	
	8:30 AM Mar 08	■ All employees: Total nonfarm	Feb	Level chg. (thousands)	184.3	20.0	*0.686	-0.113	
	8:30 AM Mar 08	■ Civilian unemployment rate	Feb	Ppt. chg.	0.006	-0.200	-0.359	0.074	
	8:30 AM Mar 08	■ Housing starts	Jan	MoM % chg.	0.788	18.6	0.011	0.194	
	8:30 AM Mar 08	■ Building permits	Jan	Level chg. (thousands)	-39.3	19.0	0.001	0.078	
		■ Data revisions						0.063	
Mar 08									1.51

Source: Authors' calculations, based on data accessed through Haver Analytics.

Notes: MoM % chg. indicates month over month percentage change. QoQ % chg. indicates quarter over quarter percentage change. The weights with the asterisk are multiplied by 1,000 for legibility.

Nowcasting Report Q&A

1. What is the ultimate goal of the exercise?

Our model produces a "nowcast" of GDP growth, incorporating a wide range of macroeconomic data as it becomes available. With this approach, we aim to read the real-time flow of information and evaluate its effects on current economic conditions. The platform provides a model-based counterpart to the more routine analysis at the bank, which has traditionally been based on expert knowledge.

2. What is the modeling strategy?

The platform employs Kalman-filtering techniques and a dynamic factor model. The approach has a number of desirable features. It is based on:

- a reliable big data framework that captures in a parsimonious way the salient features of macroeconomic data dynamics;
- a design that digests the data as "news," mimicking the way markets work.

3. What are the input data? What has been driving the data selection?

We include all the market-moving indicators—the same data that are also constantly monitored by market participants and commentators.

4. Why should we trust the model?

Extensive back-testing of the model, research, and practical experience have shown that the platform is able to approximate best practices in macroeconomic forecasts. The model produces forecasts that are as accurate as, and strongly correlated with, predictions based on best judgment.

The methodology has been tested for accuracy in many countries, including large developed economies (the Euro area, Italy, France, Germany, Spain, the United Kingdom, Japan, and Canada), small open economies (Australia, Ireland, Belgium, New Zealand, the Czech Republic, and Scotland), fast-growing economies (Brazil, Russia, India, China, and South Africa), and developing economies (Mexico, Indonesia, and Argentina).

5. How should we read the output of the model?

- The model produces forecasts for all variables taking into account their dynamic interactions.

- Since it is a fully specified dynamic model, the platform provides an intuitive reading of the incoming data as "news."

- The difference between two consecutive forecasts (that is, the forecast revision) is the weighted average of the news during the week.

- News is defined as the difference between released data and model predictions. The weights account for the information content as well as the timeliness of the data releases.

- The contribution of new data to the forecast revision is reported in the two charts with colored bars. To make the charts easier to read, we grouped variables in a few broad categories. Detailed information about the composition of the groupings is provided in the accompanying tables.

References

■ *Banbura, M., D. Giannone, M. Modugno, and L. Reichlin*. 2013. "Nowcasting and the Real-Time Data Flow." In G. Elliott and A. Timmermann, eds., *Handbook of Economic Forecasting*, Vol. 2. Amsterdam: Elsevier-North Holland.

■ *Bok, B., D. Caratelli, D. Giannone, A. Sbordone, and A. Tambalotti.* 2017. "Macroeconomic Nowcasting and Forecasting with Big Data." *Federal Reserve Bank of New York Staff Reports,* no. 830, November.

■ *Giannone, D., L. Reichlin, and D. Small.* 2008. "Nowcasting: The Real-Time Informational Content of Macroeconomic Data." *Journal of Monetary Economics* 55, no.4 (May): 665-76.

Nowcasting Report FAQs

1. What is the schedule for reporting and updating the nowcast for each quarter?

We start reporting the nowcast of GDP growth for a reference quarter one week after the publication of the second official GDP estimate for two quarters prior. For example, we began reporting the nowcast for 2017:Q2 on Friday, March 10, 2017, following the government's second estimate of 2016:Q4 GDP on Tuesday, February 28, 2017. We continue to update the nowcast for a reference quarter until the release of the advance GDP estimate, roughly one month after the end of the quarter. For 2017:Q2, this occurred on July 28, 2017, at which point we stopped updating the nowcast for this quarter. We retain the reference quarter's progression plot and detail table in the Nowcasting Report until the publication of the second GDP estimate, roughly two months after the end of the quarter. Following the second estimate of 2017:Q2 GDP on August 30, 2017, we removed 2017:Q2 from the Nowcasting Report and began reporting the nowcast for 2017:Q4.

2. What are the major conceptual differences between the New York Fed Staff Nowcast and the Atlanta Fed's Nowcast?

The New York Fed Staff Nowcast and the Atlanta Fed's GDPNow are both based on statistical filtering techniques applied to a dynamic factor model. These techniques are very common in big data analytics since they effectively summarize the information contained in large data sets through a small number of common factors. The general framework for macroeconomic nowcasting has been developed in the academic literature over the past ten years, as discussed in the Q&A included in this report. The New York Fed Staff Nowcast is a straightforward application of the most advanced techniques developed in this academic literature. GDPNow adapts these techniques to mimic the methods used by the BEA to estimate real GDP growth, as well explained by GDPNow's own FAQs.

Because GDPNow and the New York Fed Staff Nowcast are different models, they can generate different forecasts of real GDP growth. Our policy is not to comment on or interpret any differences between the forecasts of these two models.

3. Is the "annual rate" the y/y growth rate?

No. We track the annualized quarterly ("q/q") growth rate of real GDP, not the four-quarter ("y/y") growth rate.

4. Can we obtain the data underlying this analysis?

To make it easier for nowcast followers to better understand and replicate our results, we share the MATLAB code for our model and a snapshot of data sets from the past year on Github at https://github.com/FRBNY-TimeSeriesAnalysis/Nowcasting. The newest releases for all data series are publicly available from source websites; real-time historical data for most series can be retrieved from the St. Louis Fed's ALFRED database. Unfortunately, we cannot provide the complete data set used in our model because the historical data for a handful of series (including the ISM manufacturing and nonmanufacturing indexes) are proprietary. As a consequence, the replication files do not exactly reproduce the published version of the New York Fed Staff Nowcast.

Authors

New York Fed Time-Series Analysis Team