

# NOWCASTING REPORT

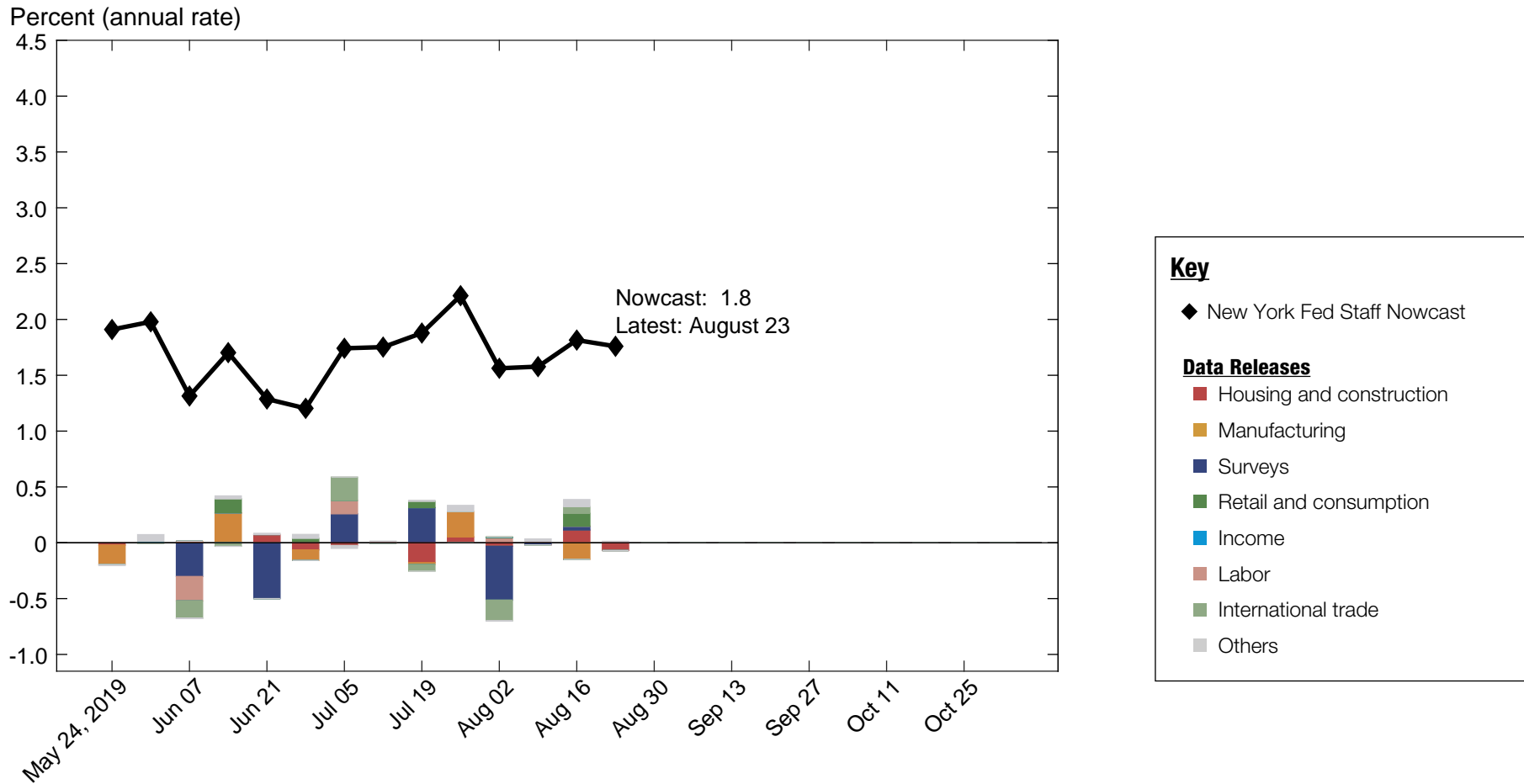
Updated: August 23, 2019

- The New York Fed Staff Nowcast stands at 1.8% for 2019:Q3.
- News from housing data were small, leaving the nowcast broadly unchanged.

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The New York Fed Staff Nowcast is not an official forecast of the Federal Reserve Bank of New York, its president, the Federal Reserve System, or the Federal Open Market Committee (FOMC).

# 1 | 2019:Q3 GDP Growth



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

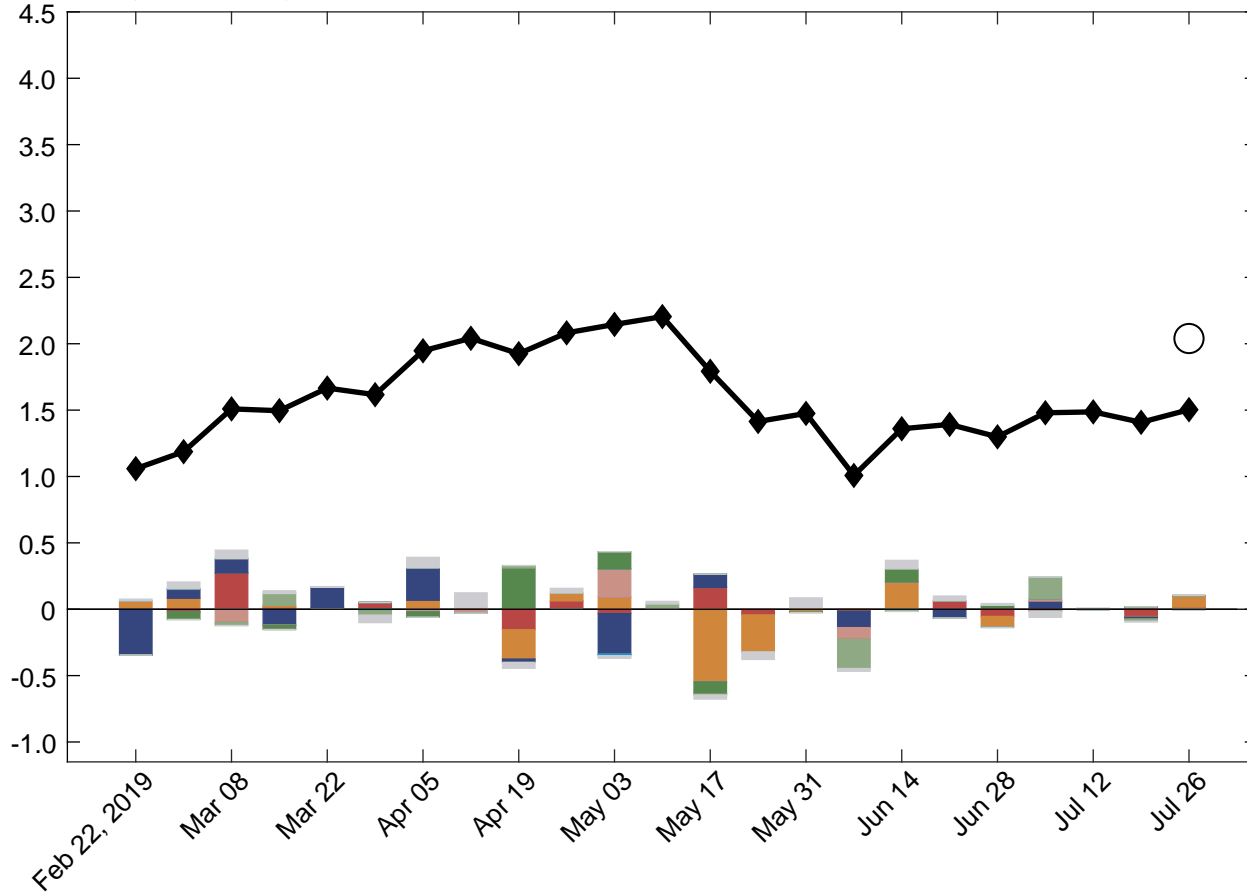
<span style="color: #c00000;">■</span> Housing and construction <span style="color: #e69d00;">■</span> Manufacturing <span style="color: #000080;">■</span> Surveys <span style="color: #008000;">■</span> Retail and consumption <span style="color: #00b0f0;">■</span> Income <span style="color: #a52a2a;">■</span> Labor <span style="color: #6aa84f;">■</span> International trade <span style="color: #cccccc;">■</span> Others									
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b - a)]	
Jul 26									<b>2.21</b>
	8:30 AM Jul 30	<span style="color: #008000;">■</span> Real personal consumption expenditures	Jun	MoM % chg.	0.143	0.162	0.280	0.005	
	8:30 AM Jul 30	<span style="color: #00b0f0;">■</span> Real disposable personal income	Jun	MoM % chg.	0.184	0.304	0.020	0.002	
	8:30 AM Jul 30	<span style="color: #cccccc;">■</span> PCE less food and energy: Chain price index	Jun	MoM % chg.	0.138	0.248	0.283	0.031	
	8:30 AM Jul 30	<span style="color: #cccccc;">■</span> PCE: Chain price index	Jun	MoM % chg.	0.120	0.121	0.173	0.000	
	8:05 AM Jul 31	<span style="color: #a52a2a;">■</span> ADP nonfarm private payroll employment	Jul	Level chg. (thousands)	132.1	156.0	*1.468	0.035	
	10:00 AM Aug 01	<span style="color: #000080;">■</span> ISM mfg.: PMI composite index	Jul	Index	54.4	51.2	0.086	-0.278	
	10:00 AM Aug 01	<span style="color: #000080;">■</span> ISM mfg.: Employment index	Jul	Index	54.7	51.7	0.037	-0.111	
	10:00 AM Aug 01	<span style="color: #c00000;">■</span> Value of construction put in place	Jun	MoM % chg.	-0.132	-1.26	0.027	-0.031	
	10:10 AM Aug 01	<span style="color: #000080;">■</span> ISM mfg.: Prices index	Jul	Index	52.2	45.1	0.013	-0.095	
	8:30 AM Aug 02	<span style="color: #a52a2a;">■</span> Civilian unemployment rate	Jul	Ppt. chg.	0.003	0.000	-0.303	0.001	
	8:30 AM Aug 02	<span style="color: #008000;">■</span> Exports: Goods and services	Jun	MoM % chg.	0.084	-2.08	0.064	-0.138	
	8:30 AM Aug 02	<span style="color: #008000;">■</span> Imports: Goods and services	Jun	MoM % chg.	-0.816	-1.72	0.051	-0.046	
	8:30 AM Aug 02	<span style="color: #a52a2a;">■</span> All employees: Total nonfarm	Jul	Level chg. (thousands)	157.8	164.0	*0.551	0.003	
	10:00 AM Aug 02	<span style="color: #e69d00;">■</span> Inventories: Total business	Jun	MoM % chg.	0.169	0.099	-0.071	0.005	
		<span style="color: #cccccc;">■</span> Data revisions						-0.035	
Aug 02									<b>1.56</b>
	10:00 AM Aug 05	<span style="color: #000080;">■</span> ISM nonmanufacturing: NMI composite index	Jul	Index	55.1	53.7	0.014	-0.018	
	10:00 AM Aug 06	<span style="color: #a52a2a;">■</span> JOLTS: Job openings: Total	Jun	Level chg. (thousands)	-12.2	-36.0	*0.047	-0.001	
	8:30 AM Aug 09	<span style="color: #cccccc;">■</span> PPI: Final demand	Jul	MoM % chg.	0.113	0.169	0.086	0.005	
		<span style="color: #cccccc;">■</span> Data revisions						0.029	
Aug 09									<b>1.58</b>
	8:40 AM Aug 13	<span style="color: #cccccc;">■</span> CPI-U: All items	Jul	MoM % chg.	0.089	0.335	0.128	0.031	
	8:40 AM Aug 13	<span style="color: #cccccc;">■</span> CPI-U: All items less food and energy	Jul	MoM % chg.	0.200	0.291	0.153	0.014	
	8:30 AM Aug 14	<span style="color: #008000;">■</span> Import price index	Jul	MoM % chg.	-0.713	0.159	0.035	0.031	
	8:30 AM Aug 14	<span style="color: #008000;">■</span> Export price index	Jul	MoM % chg.	-0.237	0.238	0.062	0.029	
	8:30 AM Aug 15	<span style="color: #008000;">■</span> Retail sales and food services	Jul	MoM % chg.	0.159	0.703	0.210	0.114	
	8:30 AM Aug 15	<span style="color: #000080;">■</span> Empire State Mfg. Survey: General business conditions	Aug	Index	4.98	4.80	0.007	-0.001	
	8:30 AM Aug 15	<span style="color: #000080;">■</span> Phila. Fed Mfg. business outlook: Current activity	Aug	Index	10.5	16.8	0.005	0.035	
	8:30 AM Aug 15	<span style="color: #a52a2a;">■</span> Nonfarm business sector: Unit labor cost	Q2	QoQ % chg. AR	0.358	2.35	0.001	0.001	
	9:10 AM Aug 15	<span style="color: #e69d00;">■</span> Industrial production index	Jul	MoM % chg.	-0.061	-0.218	0.338	-0.053	
	9:10 AM Aug 15	<span style="color: #e69d00;">■</span> Capacity utilization	Jul	Ppt. chg.	-0.086	-0.304	0.439	-0.096	
	8:30 AM Aug 16	<span style="color: #c00000;">■</span> Housing starts	Jul	MoM % chg.	0.748	-4.03	0.019	-0.091	
	8:30 AM Aug 16	<span style="color: #c00000;">■</span> Building permits	Jul	Level chg. (thousands)	11.3	104.0	0.002	0.205	
		<span style="color: #cccccc;">■</span> Data revisions						0.018	
Aug 16									<b>1.82</b>
	10:00 AM Aug 23	<span style="color: #c00000;">■</span> New single family houses sold	Jul	MoM % chg.	-5.88	-12.8	0.010	-0.069	
		<span style="color: #cccccc;">■</span> Data revisions						0.013	
Aug 23									<b>1.76</b>

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.

## 2 | 2019:Q2 GDP Growth

Percent (annual rate)



### Key

- ◆ New York Fed Staff Nowcast
- Advance estimate

### 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

<span style="color: #c00000;">■</span> Housing and construction <span style="color: #e69d00;">■</span> Manufacturing <span style="color: #000080;">■</span> Surveys <span style="color: #008000;">■</span> Retail and consumption <span style="color: #00b0f0;">■</span> Income <span style="color: #a52a2a;">■</span> Labor <span style="color: #6aa84f;">■</span> International trade <span style="color: #cccccc;">■</span> Others										
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth	
					[a]	[b]	[c]	[c(b - a)]		
Jun 28										<b>1.30</b>
	10:00 AM Jul 01	<span style="color: #000080;">■</span> ISM mfg.: PMI composite index	Jun	Index	50.8	51.7	0.020	0.018		
	10:00 AM Jul 01	<span style="color: #000080;">■</span> ISM mfg.: Prices index	Jun	Index	50.9	47.9	0.003	-0.008		
	10:00 AM Jul 01	<span style="color: #c00000;">■</span> Value of construction put in place	May	MoM % chg.	0.191	-0.777	0.014	-0.013		
	10:00 AM Jul 01	<span style="color: #000080;">■</span> ISM mfg.: Employment index	Jun	Index	50.1	54.5	0.012	0.052		
	8:05 AM Jul 03	<span style="color: #a52a2a;">■</span> ADP nonfarm private payroll employment	Jun	Level chg. (thousands)	44.4	102.0	*0.185	0.011		
	8:30 AM Jul 03	<span style="color: #6aa84f;">■</span> Exports: Goods and services	May	MoM % chg.	0.476	2.05	0.041	0.065		
	8:30 AM Jul 03	<span style="color: #6aa84f;">■</span> Imports: Goods and services	May	MoM % chg.	0.628	3.31	0.036	0.097		
	10:00 AM Jul 03	<span style="color: #000080;">■</span> ISM nonmanufacturing: NMI composite index	Jun	Index	55.3	55.1	0.002	-0.000		
	10:00 AM Jul 03	<span style="color: #e69d00;">■</span> Inventories: Total business	May	MoM % chg.	0.257	0.362	-0.013	-0.001		
	8:30 AM Jul 05	<span style="color: #a52a2a;">■</span> All employees: Total nonfarm	Jun	Level chg. (thousands)	90.3	224.0	*0.150	0.020		
	8:30 AM Jul 05	<span style="color: #a52a2a;">■</span> Civilian unemployment rate	Jun	Ppt. chg.	0.007	0.100	-0.136	-0.013		
		<span style="color: #cccccc;">■</span> Data revisions						0.002		
		<span style="color: #cccccc;">■</span> Parameter revisions						-0.048		
Jul 05										<b>1.48</b>
	10:00 AM Jul 09	<span style="color: #a52a2a;">■</span> JOLTS: Job openings: Total	May	Level chg. (thousands)	39.5	-49.0	*0.026	-0.002		
	8:40 AM Jul 11	<span style="color: #cccccc;">■</span> CPI-U: All items	Jun	MoM % chg.	0.104	0.059	0.045	-0.002		
	8:40 AM Jul 11	<span style="color: #cccccc;">■</span> CPI-U: All items less food and energy	Jun	MoM % chg.	0.144	0.294	0.056	0.008		
	8:30 AM Jul 12	<span style="color: #cccccc;">■</span> PPI: Final demand	Jun	MoM % chg.	0.122	0.085	0.034	-0.001		
		<span style="color: #cccccc;">■</span> Data revisions						0.004		
Jul 12										<b>1.49</b>
	8:30 AM Jul 15	<span style="color: #000080;">■</span> Empire State Mfg. Survey: General business conditions	Jul	Index	-2.31	4.30	0.000	0.001		
	8:30 AM Jul 16	<span style="color: #008000;">■</span> Retail sales and food services	Jun	MoM % chg.	0.166	0.426	0.069	0.018		
	8:30 AM Jul 16	<span style="color: #6aa84f;">■</span> Import price index	Jun	MoM % chg.	-0.069	-0.946	0.006	-0.005		
	8:30 AM Jul 16	<span style="color: #6aa84f;">■</span> Export price index	Jun	MoM % chg.	-0.076	-0.710	0.016	-0.010		
	9:20 AM Jul 16	<span style="color: #e69d00;">■</span> Industrial production index	Jun	MoM % chg.	-0.075	-0.035	0.115	0.005		
	9:20 AM Jul 16	<span style="color: #e69d00;">■</span> Capacity utilization	Jun	Ppt. chg.	-0.097	-0.165	0.147	-0.010		
	8:30 AM Jul 17	<span style="color: #c00000;">■</span> Housing starts	Jun	MoM % chg.	0.156	-0.949	0.006	-0.007		
	8:30 AM Jul 17	<span style="color: #c00000;">■</span> Building permits	Jun	Level chg. (thousands)	-8.62	-79.0	0.001	-0.048		
	8:30 AM Jul 18	<span style="color: #000080;">■</span> Phila. Fed Mfg. business outlook: Current activity	Jul	Index	4.24	21.8	-0.001	-0.016		
		<span style="color: #cccccc;">■</span> Data revisions						-0.006		
Jul 19										<b>1.41</b>
	10:00 AM Jul 24	<span style="color: #c00000;">■</span> New single family houses sold	Jun	MoM % chg.	1.77	6.95	0.003	0.016		
	8:30 AM Jul 25	<span style="color: #e69d00;">■</span> Manufacturers' new orders: Durable goods	Jun	MoM % chg.	0.840	2.05	0.008	0.009		
	8:30 AM Jul 25	<span style="color: #e69d00;">■</span> Merchant wholesalers: Inventories: Total	Jun	MoM % chg.	0.322	0.239	-0.011	0.001		
	8:30 AM Jul 25	<span style="color: #e69d00;">■</span> Manufacturers' shipments: Durable goods	Jun	MoM % chg.	-0.288	1.39	0.048	0.080		
	8:30 AM Jul 25	<span style="color: #e69d00;">■</span> Mfrs.' unfilled orders: All manufacturing industries	Jun	MoM % chg.	-0.085	-0.670	0.004	-0.002		
	8:30 AM Jul 25	<span style="color: #e69d00;">■</span> Manufacturers' inventories: Durable goods	Jun	MoM % chg.	0.209	0.309	-0.014	-0.001		
		<span style="color: #cccccc;">■</span> Data revisions						-0.008		
Jul 26										<b>1.50</b>
	8:30 AM Jul 26	<span style="color: #cccccc;">■</span> Real gross domestic product (advance)	Q2	QoQ % chg. AR	1.50	<b>2.06</b>				
We have concluded our updates of the Q2 nowcast										

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