

# NOWCASTING REPORT

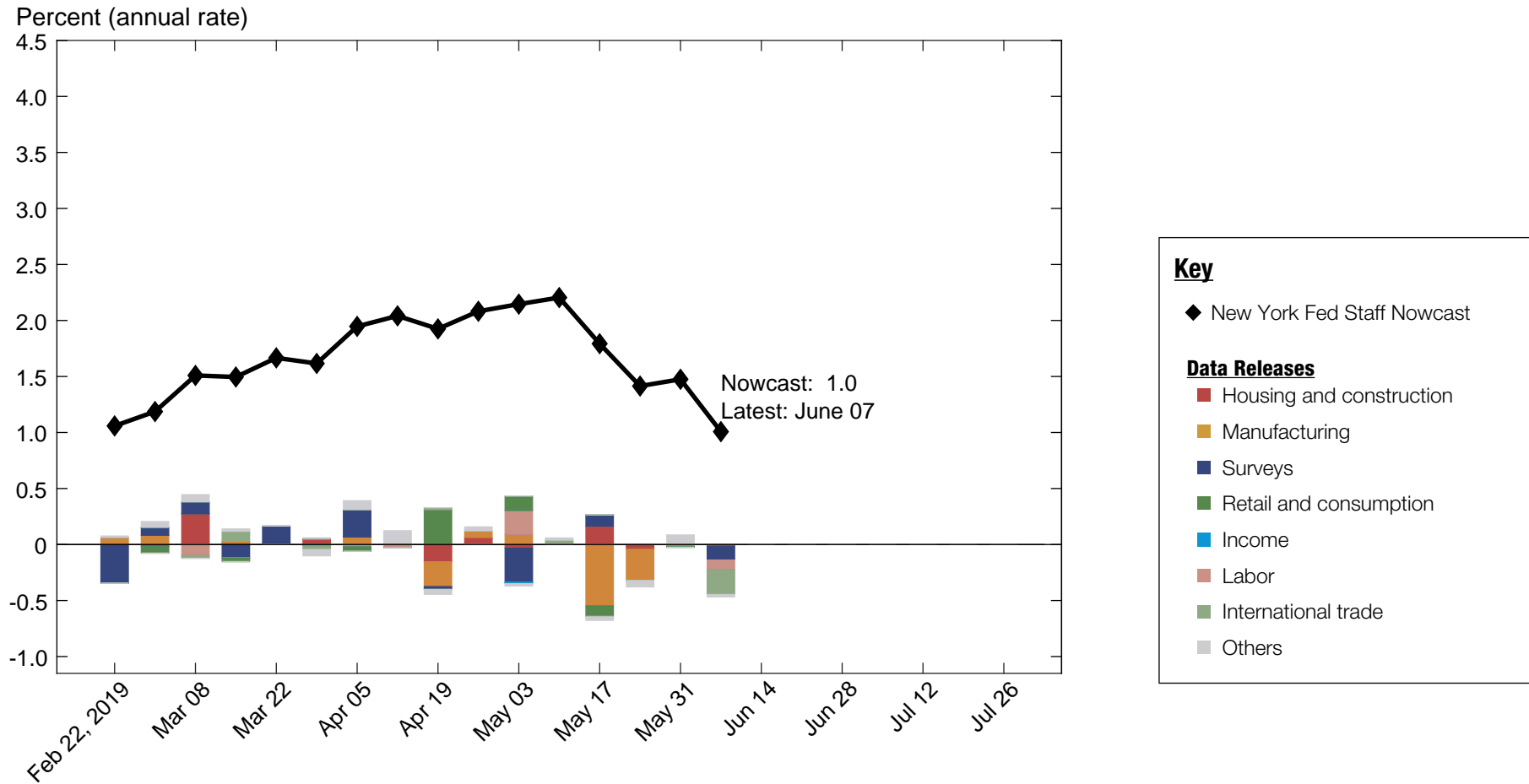
Updated: June 7, 2019

- The New York Fed Staff Nowcast stands at 1.0% for 2019:Q2 and 1.3% for 2019:Q3.
- News from this week's data releases decreased the nowcast for 2019:Q2 by 0.5 percentage point and decreased the nowcast for 2019:Q3 by 0.7 percentage point.
- Negative surprises from the ISM manufacturing survey, employment data, and international trade data drove most of the decrease.

---

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:Q2 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.

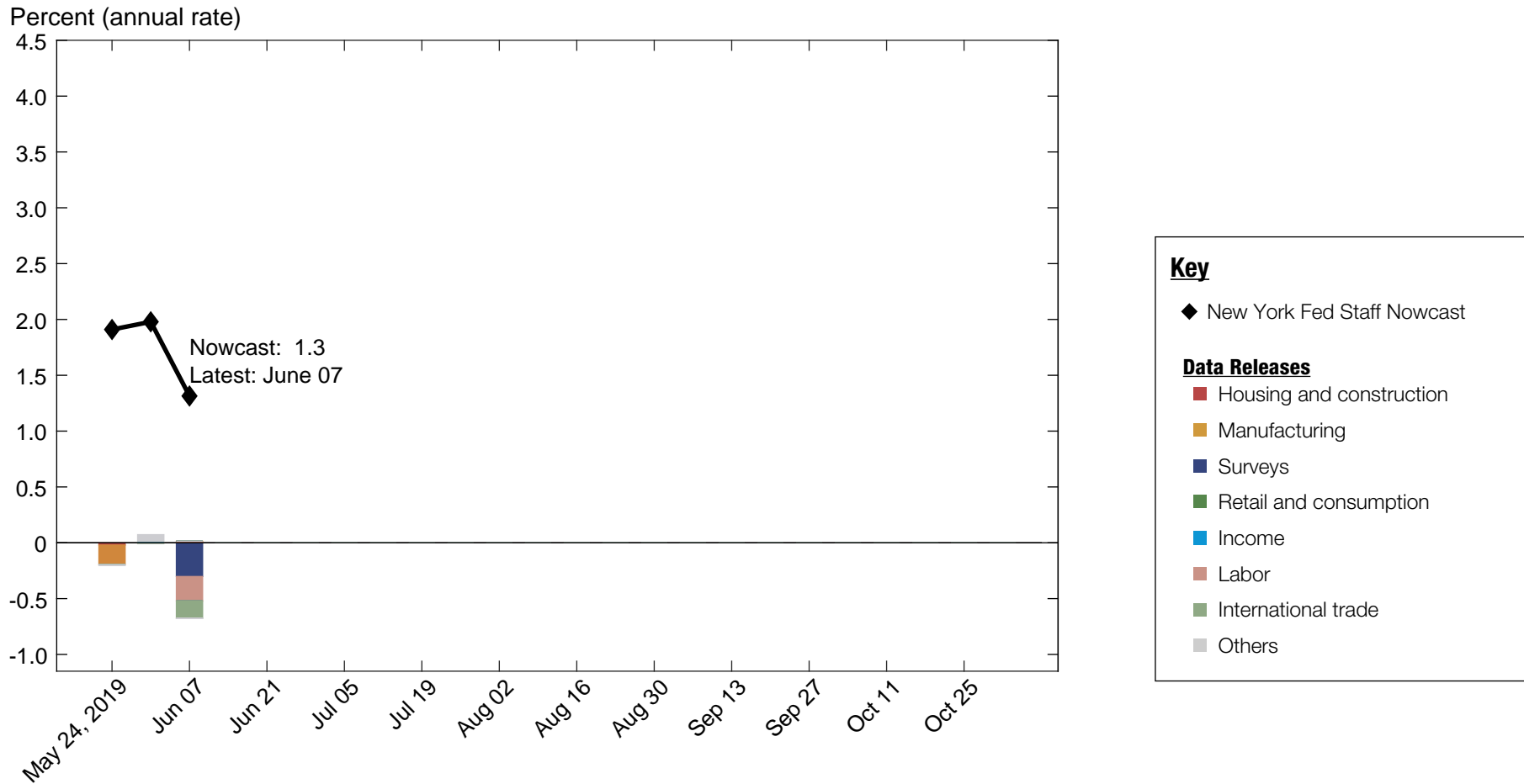
# 1.1 | Nowcast Detail

<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)]	
May 10									<b>2.20</b>
	8:30 AM May 14	<span style="color: #6aa84f;">■</span> Import price index	Apr	MoM % chg.	0.331	0.237	0.037	-0.003	
	8:30 AM May 14	<span style="color: #6aa84f;">■</span> Export price index	Apr	MoM % chg.	0.281	0.236	0.064	-0.003	
	8:30 AM May 15	<span style="color: #008000;">■</span> Retail sales and food services	Apr	MoM % chg.	0.197	-0.189	0.232	-0.090	
	8:30 AM May 15	<span style="color: #000080;">■</span> Empire State Mfg. Survey: General business conditions	May	Index	9.46	17.8	0.008	0.067	
	9:10 AM May 15	<span style="color: #e69d00;">■</span> Industrial production index	Apr	MoM % chg.	0.194	-0.511	0.356	-0.251	
	9:20 AM May 15	<span style="color: #e69d00;">■</span> Capacity utilization	Apr	Ppt. chg.	0.111	-0.535	0.462	-0.299	
	8:30 AM May 16	<span style="color: #c00000;">■</span> Housing starts	Apr	MoM % chg.	-0.979	5.74	0.019	0.126	
	8:30 AM May 16	<span style="color: #000080;">■</span> Phila. Fed Mfg. business outlook: Current activity	May	Index	10.8	16.6	0.006	0.034	
	8:30 AM May 16	<span style="color: #c00000;">■</span> Building permits	Apr	Level chg. (thousands)	-8.98	8.00	0.002	0.038	
		<span style="color: #cccccc;">■</span> Data revisions						-0.031	
May 17									<b>1.79</b>
	10:00 AM May 23	<span style="color: #c00000;">■</span> New single family houses sold	Apr	MoM % chg.	-2.39	-6.92	0.009	-0.043	
	8:30 AM May 24	<span style="color: #e69d00;">■</span> Manufacturers' new orders: Durable goods	Apr	MoM % chg.	-0.490	-2.11	0.019	-0.031	
	8:30 AM May 24	<span style="color: #e69d00;">■</span> Manufacturers' shipments: Durable goods	Apr	MoM % chg.	0.360	-1.56	0.117	-0.226	
	8:30 AM May 24	<span style="color: #e69d00;">■</span> Mfrs.' unfilled orders: All manufacturing industries	Apr	MoM % chg.	0.322	-0.062	-0.020	0.008	
	8:30 AM May 24	<span style="color: #e69d00;">■</span> Manufacturers' inventories: Durable goods	Apr	MoM % chg.	0.296	0.435	-0.219	-0.030	
		<span style="color: #cccccc;">■</span> Data revisions						-0.057	
May 24									<b>1.41</b>
	8:30 AM May 30	<span style="color: #cccccc;">■</span> Real gross domestic income	Q1	QoQ % chg. AR	1.29	1.42	0.013	0.002	
	8:30 AM May 30	<span style="color: #e69d00;">■</span> Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.510	0.652	-0.133	-0.019	
	8:30 AM May 31	<span style="color: #000080;">■</span> Real disposable personal income	Apr	MoM % chg.	0.217	0.123	0.023	-0.002	
	8:30 AM May 31	<span style="color: #cccccc;">■</span> PCE less food and energy: Chain price index	Apr	MoM % chg.	0.131	0.247	0.259	0.030	
	8:30 AM May 31	<span style="color: #cccccc;">■</span> PCE: Chain price index	Apr	MoM % chg.	0.149	0.312	0.146	0.024	
	8:30 AM May 31	<span style="color: #008000;">■</span> Real personal consumption expenditures	Apr	MoM % chg.	-0.016	-0.028	0.296	-0.004	
		<span style="color: #cccccc;">■</span> Data revisions						0.030	
May 31									<b>1.48</b>
	10:00 AM Jun 03	<span style="color: #000080;">■</span> ISM mfg.: PMI composite index	May	Index	54.8	52.1	0.050	-0.136	
	10:00 AM Jun 03	<span style="color: #000080;">■</span> ISM mfg.: Prices index	May	Index	53.5	53.2	0.006	-0.002	
	10:00 AM Jun 03	<span style="color: #000080;">■</span> ISM mfg.: Employment index	May	Index	53.8	53.7	0.026	-0.002	
	10:00 AM Jun 03	<span style="color: #c00000;">■</span> Value of construction put in place	Apr	MoM % chg.	0.055	-0.047	0.022	-0.002	
	10:00 AM Jun 04	<span style="color: #e69d00;">■</span> Inventories: Total business	Apr	MoM % chg.	0.335	0.459	-0.093	-0.012	
	8:05 AM Jun 05	<span style="color: #a52a2a;">■</span> ADP nonfarm private payroll employment	May	Level chg. (thousands)	213.5	28.0	*0.527	-0.098	
	10:00 AM Jun 05	<span style="color: #000080;">■</span> ISM nonmanufacturing: NMI composite index	May	Index	55.2	56.9	0.009	0.016	
	11:50 AM Jun 06	<span style="color: #008000;">■</span> Exports: Goods and services	Apr	MoM % chg.	0.005	-2.16	0.064	-0.138	
	11:50 AM Jun 06	<span style="color: #008000;">■</span> Imports: Goods and services	Apr	MoM % chg.	-0.335	-2.16	0.044	-0.080	
	8:30 AM Jun 07	<span style="color: #a52a2a;">■</span> All employees: Total nonfarm	May	Level chg. (thousands)	80.8	75.0	*0.344	-0.002	
	8:30 AM Jun 07	<span style="color: #a52a2a;">■</span> Civilian unemployment rate	May	Ppt. chg.	0.041	0.000	-0.234	0.010	
		<span style="color: #cccccc;">■</span> Data revisions						-0.021	
Jun 07									<b>1.01</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: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.

## 2.1 | Nowcast Detail

<span style="color: red;">■</span> Housing and construction <span style="color: orange;">■</span> Manufacturing <span style="color: blue;">■</span> Surveys <span style="color: green;">■</span> Retail and consumption <span style="color: cyan;">■</span> Income <span style="color: brown;">■</span> Labor <span style="color: olive;">■</span> International trade <span style="color: gray;">■</span> Others									
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b - a)]	
May 10									<b>2.18</b>
	8:30 AM May 14	Import price index	Apr	MoM % chg.	0.331	0.237	0.044	-0.004	
	8:30 AM May 14	Export price index	Apr	MoM % chg.	0.281	0.236	0.071	-0.003	
	8:30 AM May 15	Retail sales and food services	Apr	MoM % chg.	0.197	-0.189	0.139	-0.054	
	8:30 AM May 15	Empire State Mfg. Survey: General business conditions	May	Index	9.46	17.8	0.022	0.182	
	9:10 AM May 15	Industrial production index	Apr	MoM % chg.	0.194	-0.511	0.226	-0.160	
	9:20 AM May 15	Capacity utilization	Apr	Ppt. chg.	0.111	-0.535	0.291	-0.188	
	8:30 AM May 16	Housing starts	Apr	MoM % chg.	-0.979	5.74	0.009	0.061	
	8:30 AM May 16	Phila. Fed Mfg. business outlook: Current activity	May	Index	10.8	16.6	0.017	0.100	
	8:30 AM May 16	Building permits	Apr	Level chg. (thousands)	-8.98	8.00	0.001	0.019	
		Data revisions						-0.018	
May 17									<b>2.11</b>
	10:00 AM May 23	New single family houses sold	Apr	MoM % chg.	-2.39	-6.92	0.004	-0.020	
	8:30 AM May 24	Manufacturers' new orders: Durable goods	Apr	MoM % chg.	-0.490	-2.11	0.012	-0.019	
	8:30 AM May 24	Manufacturers' shipments: Durable goods	Apr	MoM % chg.	0.360	-1.56	0.080	-0.153	
	8:30 AM May 24	Mfrs.' unfilled orders: All manufacturing industries	Apr	MoM % chg.	0.322	-0.062	0.011	-0.004	
	8:30 AM May 24	Manufacturers' inventories: Durable goods	Apr	MoM % chg.	0.296	0.435	0.015	0.002	
		Data revisions						-0.009	
May 24									<b>1.91</b>
	8:30 AM May 30	Real gross domestic income	Q1	QoQ % chg. AR	1.29	1.42	0.002	0.000	
	8:30 AM May 30	Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.510	0.652	0.028	0.004	
	8:30 AM May 31	Real disposable personal income	Apr	MoM % chg.	0.217	0.123	0.012	-0.001	
	8:30 AM May 31	PCE less food and energy: Chain price index	Apr	MoM % chg.	0.131	0.247	0.288	0.034	
	8:30 AM May 31	PCE: Chain price index	Apr	MoM % chg.	0.149	0.312	0.175	0.029	
	8:30 AM May 31	Real personal consumption expenditures	Apr	MoM % chg.	-0.016	-0.028	0.193	-0.002	
		Data revisions						0.006	
May 31									<b>1.98</b>
	10:00 AM Jun 03	ISM mfg.: PMI composite index	May	Index	54.8	52.1	0.124	-0.337	
	10:00 AM Jun 03	ISM mfg.: Prices index	May	Index	53.5	53.2	0.017	-0.006	
	10:00 AM Jun 03	ISM mfg.: Employment index	May	Index	53.8	53.7	0.053	-0.004	
	10:00 AM Jun 03	Value of construction put in place	Apr	MoM % chg.	0.055	-0.047	0.020	-0.002	
	10:00 AM Jun 04	Inventories: Total business	Apr	MoM % chg.	0.335	0.459	0.114	0.014	
	8:05 AM Jun 05	ADP nonfarm private payroll employment	May	Level chg. (thousands)	213.5	28.0	*1.235	-0.229	
	10:00 AM Jun 05	ISM nonmanufacturing: NMI composite index	May	Index	55.2	56.9	0.027	0.047	
	11:50 AM Jun 06	Exports: Goods and services	Apr	MoM % chg.	0.005	-2.16	0.045	-0.097	
	11:50 AM Jun 06	Imports: Goods and services	Apr	MoM % chg.	-0.335	-2.16	0.031	-0.057	
	8:30 AM Jun 07	All employees: Total nonfarm	May	Level chg. (thousands)	80.8	75.0	*0.718	-0.004	
	8:30 AM Jun 07	Civilian unemployment rate	May	Ppt. chg.	0.041	0.000	-0.347	0.014	
		Data revisions						-0.003	
Jun 07									<b>1.31</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.

# 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