

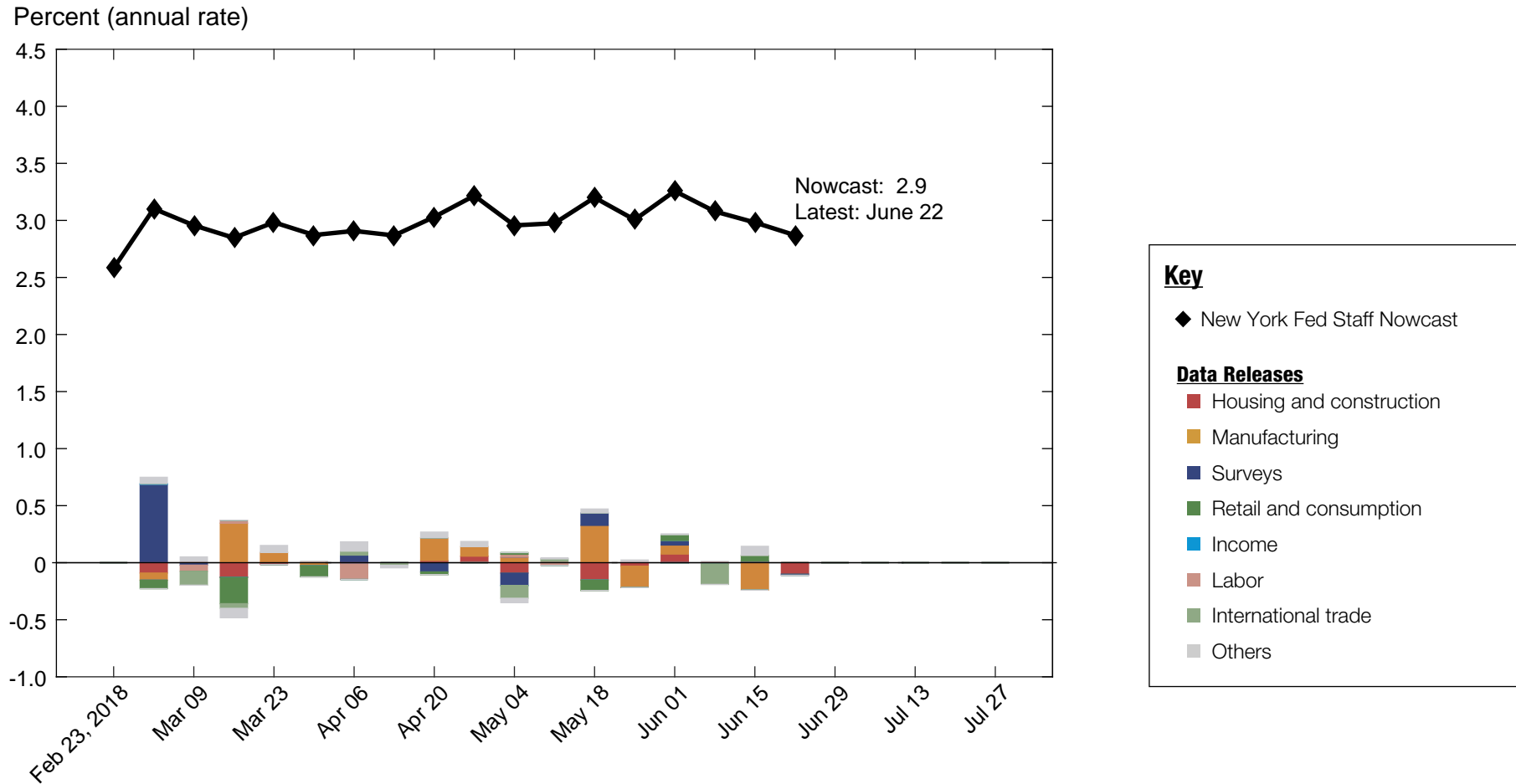
NOWCASTING REPORT

Updated: June 22, 2018

- The New York Fed Staff Nowcast stands at 2.9% for 2018:Q2 and 2.6% for 2018:Q3.
- News from this week's data releases decreased the nowcast for 2018:Q2 by 0.1 percentage point and decreased the nowcast for 2018:Q3 by 0.2 percentage point.
- Negative surprises from building permits data and the Philadelphia Fed Manufacturing survey accounted for 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 | 2018: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

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

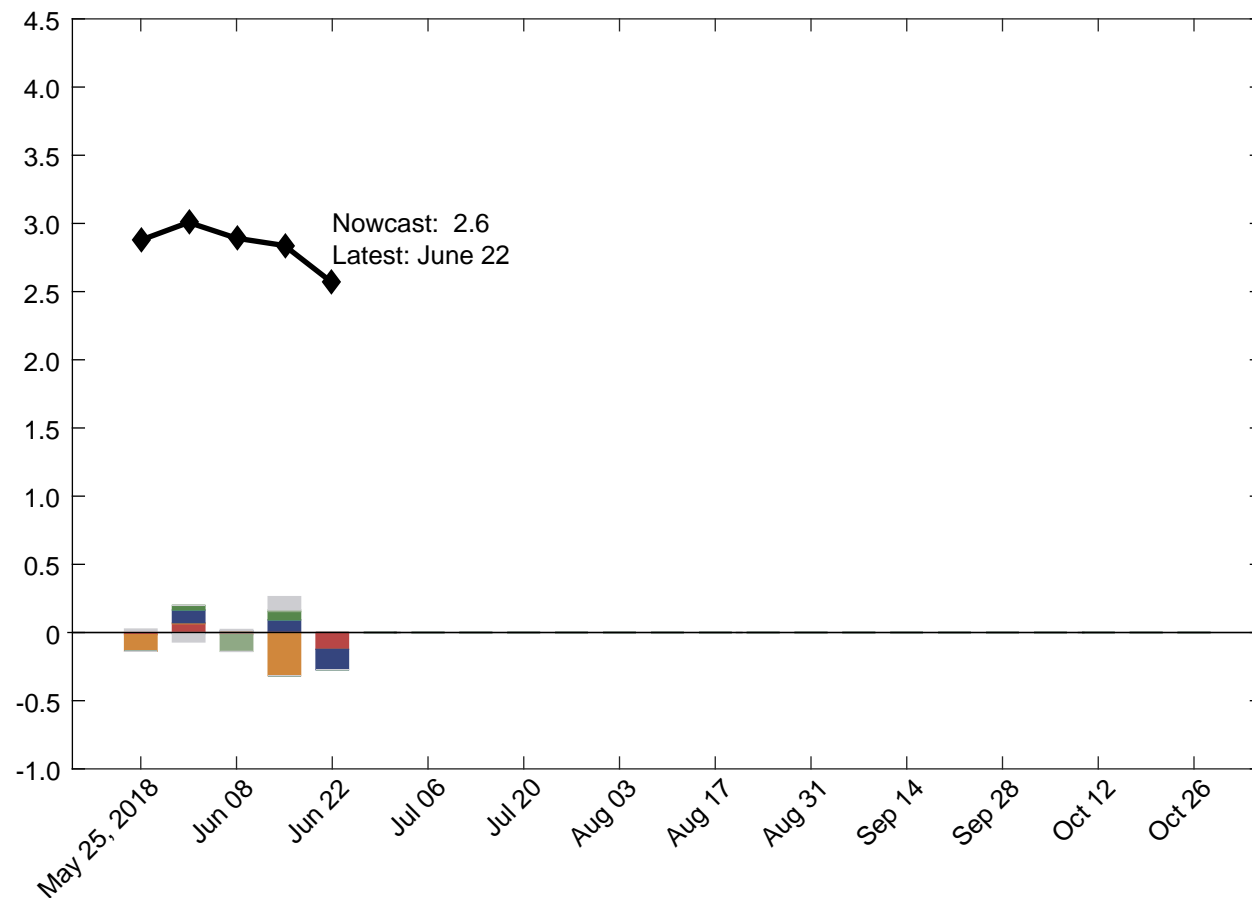
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b - a)]	
May 25	8:05 AM May 30	ADP nonfarm private payroll employment	May	Level chg. (thousands)	193.6	178.0	1.013*	-0.016	3.01
	8:30 AM May 30	Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.441	0.024	-0.190	0.079	
	8:30 AM May 30	Real gross domestic income	Q1	QoQ % chg. AR	2.56	2.77	0.012	0.003	
	8:30 AM May 31	Real disposable personal income	Apr	MoM % chg.	0.245	0.188	0.029	-0.002	
	8:30 AM May 31	PCE less food and energy: Chain price index	Apr	MoM % chg.	0.148	0.157	0.238	0.002	
	8:30 AM May 31	PCE: Chain price index	Apr	MoM % chg.	0.118	0.222	0.141	0.015	
	8:30 AM May 31	Real personal consumption expenditures	Apr	MoM % chg.	0.202	0.354	0.338	0.051	
	8:30 AM Jun 01	All employees: Total nonfarm	May	Level chg. (thousands)	195.2	223.0	0.323*	0.009	
	8:30 AM Jun 01	Civilian unemployment rate	May	Ppt. chg.	-0.029	-0.100	-0.114	0.008	
	10:00 AM Jun 01	ISM mfg.: Pmi composite index	May	Index	58.3	58.7	0.053	0.023	
	10:00 AM Jun 01	ISM mfg.: Prices index	May	Index	78.0	79.5	0.007	0.011	
	10:00 AM Jun 01	Value of construction put in place	Apr	MoM % chg.	-0.441	1.84	0.033	0.076	
	10:00 AM Jun 01	ISM mfg.: Employment index	May	Index	56.0	56.3	0.021	0.005	
		Data revisions						-0.012	
Jun 01									3.26
	10:00 AM Jun 04	Inventories: Total business	Apr	MoM % chg.	0.313	0.302	-0.159	0.002	
	10:00 AM Jun 05	JOLTS: Job openings: Total	Apr	Level chg. (thousands)	-123.6	65.0	-0.069*	-0.013	
	10:00 AM Jun 05	ISM nonmanufacturing: NMI composite index	May	Index	58.1	58.6	0.007	0.004	
	9:00 AM Jun 06	Exports: Goods and services	Apr	MoM % chg.	0.965	0.278	0.075	-0.052	
	9:00 AM Jun 06	Imports: Goods and services	Apr	MoM % chg.	1.98	-0.165	0.059	-0.126	
		Data revisions						0.006	
Jun 08									3.08
	8:40 AM Jun 12	CPI-U: All items	May	MoM % chg.	0.248	0.209	0.086	-0.003	
	8:40 AM Jun 12	CPI-U: All items less food and energy	May	MoM % chg.	0.147	0.171	0.110	0.003	
	8:30 AM Jun 13	PPI: Final demand	May	MoM % chg.	0.184	0.519	0.105	0.035	
	8:30 AM Jun 14	Retail sales and food services	May	MoM % chg.	0.639	0.827	0.244	0.046	
	8:30 AM Jun 14	Import price index	May	MoM % chg.	0.673	0.629	0.020	-0.001	
	8:30 AM Jun 14	Export price index	May	MoM % chg.	0.443	0.630	0.039	0.007	
	8:30 AM Jun 15	Empire State Mfg. Survey: General business conditions	Jun	Index	20.6	25.0	0.003	0.014	
	9:10 AM Jun 15	Industrial production index	May	MoM % chg.	0.269	-0.092	0.276	-0.100	
	9:10 AM Jun 15	Capacity utilization	May	Ppt. chg.	0.180	-0.203	0.367	-0.140	
			Data revisions						
Jun 15									2.98
	8:30 AM Jun 19	Housing starts	May	MoM % chg.	3.27	4.98	0.014	0.024	
	8:30 AM Jun 19	Building permits	May	Level chg. (thousands)	10.4	-63.0	0.002	-0.124	
	8:30 AM Jun 21	Philadelphia Fed Mfg. business outlook: Current activity	Jun	Index	28.8	19.9	0.001	-0.011	
		Data revisions						-0.001	
Jun 22								2.87	

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 | 2018:Q3 GDP Growth

Percent (annual rate)



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

		■ 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)]				
May 25	8:05 AM May 30	ADP nonfarm private payroll employment	May	Level chg. (thousands)	193.6	178.0	2.558*	-0.040	2.88			
	8:30 AM May 30	Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.441	0.024	-0.017	0.007				
	8:30 AM May 30	Real gross domestic income	Q1	QoQ % chg. AR	2.56	2.77	0.004	0.001				
	8:30 AM May 31	Real disposable personal income	Apr	MoM % chg.	0.245	0.188	0.017	-0.001				
	8:30 AM May 31	PCE less food and energy: Chain price index	Apr	MoM % chg.	0.148	0.157	0.266	0.002				
	8:30 AM May 31	PCE: Chain price index	Apr	MoM % chg.	0.118	0.222	0.165	0.017				
	8:30 AM May 31	Real personal consumption expenditures	Apr	MoM % chg.	0.202	0.354	0.222	0.034				
	8:30 AM Jun 01	All employees: Total nonfarm	May	Level chg. (thousands)	195.2	223.0	0.695*	0.019				
	8:30 AM Jun 01	Civilian unemployment rate	May	Ppt. chg.	-0.029	-0.100	-0.202	0.014				
	10:00 AM Jun 01	ISM mfg.: Pmi composite index	May	Index	58.3	58.7	0.121	0.052				
	10:00 AM Jun 01	ISM mfg.: Prices index	May	Index	78.0	79.5	0.021	0.030				
	10:00 AM Jun 01	Value of construction put in place	Apr	MoM % chg.	-0.441	1.84	0.028	0.064				
	10:00 AM Jun 01	ISM mfg.: Employment index	May	Index	56.0	56.3	0.045	0.011				
											-0.082	
Jun 01										3.01		
	10:00 AM Jun 04	Inventories: Total business	Apr	MoM % chg.	0.313	0.302	0.054	-0.001				
	10:00 AM Jun 05	JOLTS: Job openings: Total	Apr	Level chg. (thousands)	-123.6	65.0	-0.078*	-0.015				
	10:00 AM Jun 05	ISM nonmanufacturing: NMI composite index	May	Index	58.1	58.6	0.022	0.012				
	9:00 AM Jun 06	Exports: Goods and services	Apr	MoM % chg.	0.965	0.278	0.053	-0.036				
	9:00 AM Jun 06	Imports: Goods and services	Apr	MoM % chg.	1.98	-0.165	0.041	-0.087				
											0.011	
Jun 08										2.89		
	8:40 AM Jun 12	CPI-U: All items	May	MoM % chg.	0.248	0.209	0.159	-0.006				
	8:40 AM Jun 12	CPI-U: All items less food and energy	May	MoM % chg.	0.147	0.171	0.195	0.005				
	8:30 AM Jun 13	PPI: Final demand	May	MoM % chg.	0.184	0.519	0.175	0.059				
	8:30 AM Jun 14	Retail sales and food services	May	MoM % chg.	0.639	0.827	0.323	0.061				
	8:30 AM Jun 14	Import price index	May	MoM % chg.	0.673	0.629	0.045	-0.002				
	8:30 AM Jun 14	Export price index	May	MoM % chg.	0.443	0.630	0.074	0.014				
	8:30 AM Jun 15	Empire State Mfg. Survey: General business conditions	Jun	Index	20.6	25.0	0.021	0.093				
	9:10 AM Jun 15	Industrial production index	May	MoM % chg.	0.269	-0.092	0.364	-0.132				
	9:10 AM Jun 15	Capacity utilization	May	Ppt. chg.	0.180	-0.203	0.483	-0.185				
												0.041
Jun 15										2.84		
	8:30 AM Jun 19	Housing starts	May	MoM % chg.	3.27	4.98	0.016	0.028				
	8:30 AM Jun 19	Building permits	May	Level chg. (thousands)	10.4	-63.0	0.002	-0.152				
	8:30 AM Jun 21	Philadelphia Fed Mfg. business outlook: Current activity	Jun	Index	28.8	19.9	0.017	-0.150				
											0.001	
Jun 22										2.57		

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?

We are not making the underlying data available at this time. The tables list the data series employed in calculating our estimates. Sources include the U.S. Bureau of Labor Statistics, Institute for Supply Management, U.S. Census Bureau, U.S. Bureau of Economic Analysis, the New York and Philadelphia Feds, the Fed Board of Governors, and the ADP (Automatic Data Processing, Inc.).

Authors

New York Fed Time-Series Analysis Team