

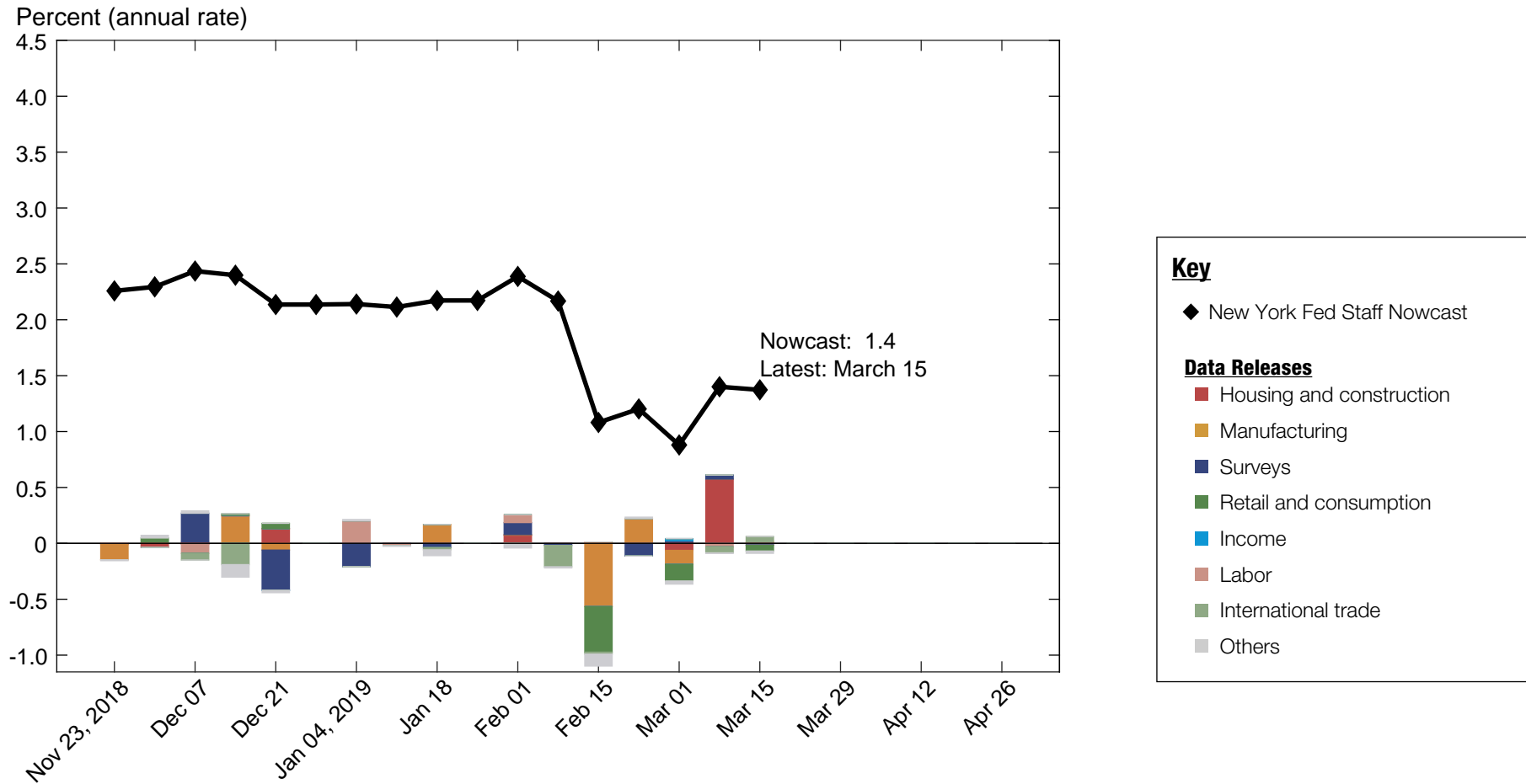
NOWCASTING REPORT

Updated: March 15, 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 left the nowcast for both quarters broadly unchanged.
- Positive surprises from export and import prices data roughly offset negative surprises from retail sales data and the Empire State Manufacturing Survey.

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:Q1 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

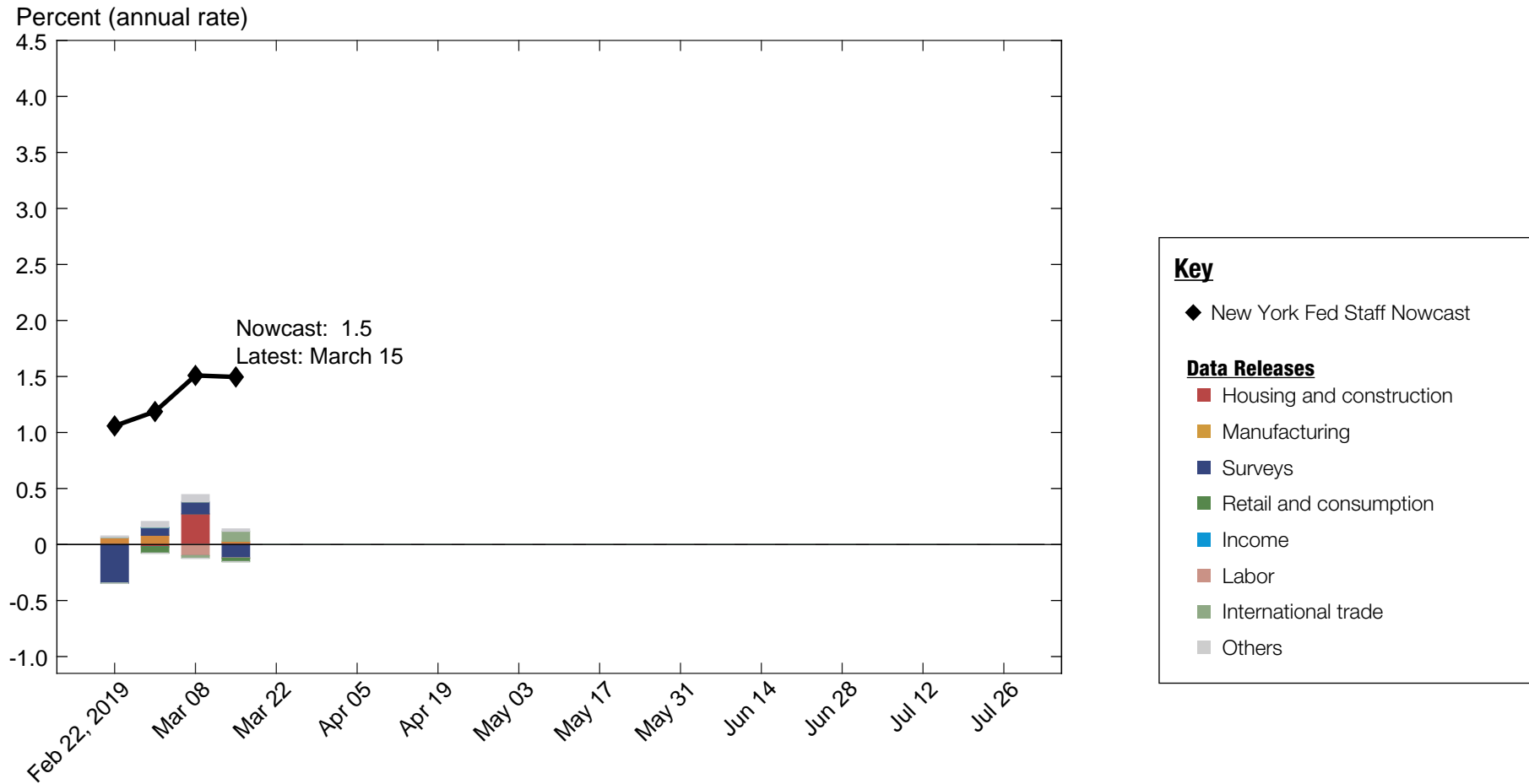
■ Housing and construction
 ■ Manufacturing
 ■ Surveys
 ■ Retail and consumption
 ■ Income
 ■ Labor
 ■ International trade
 ■ Others

Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth		
					[a]	[b]	[c]	[c(b - a)]			
Feb 15	8:30 AM Feb 21	Manufacturers' new orders: Durable goods	Dec	MoM % chg.	-0.653	1.18	0.018	0.033	1.08		
	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	10:00 AM Feb 25	Merchant wholesalers: Inventories: Total	Dec	MoM % chg.	0.358	1.09	-0.145	-0.106	1.20		
	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	10:00 AM Mar 04	Value of construction put in place	Dec	MoM % chg.	0.249	-0.603	0.022		-0.019	0.88
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		8:30 AM Mar 11	Retail sales and food services	Jan	MoM % chg.	0.469	0.211	0.198	-0.051	1.40	
		8:30 AM Mar 12	CPI-U: All items	Feb	MoM % chg.	0.071	0.174	0.085	0.009		
	8:30 AM Mar 12	CPI-U: All items less food and energy	Feb	MoM % chg.	0.183	0.110	0.111	-0.008			
	8:30 AM Mar 13	Manufacturers' new orders: Durable goods	Jan	MoM % chg.	-1.00	0.351	0.020	0.027			
	8:30 AM Mar 13	PPI: Final demand	Feb	MoM % chg.	0.093	0.085	0.059	-0.000			
	8:30 AM Mar 13	Manufacturers' shipments: Durable goods	Jan	MoM % chg.	-0.444	-0.485	0.120	-0.005			
	8:30 AM Mar 13	Mfrs.' unfilled orders: All manufacturing industries	Jan	MoM % chg.	0.317	0.117	-0.023	0.005			
	8:30 AM Mar 13	Manufacturers' inventories: Durable goods	Jan	MoM % chg.	0.341	0.413	-0.267	-0.019			
	10:00 AM Mar 13	Value of construction put in place	Jan	MoM % chg.	-0.158	1.31	0.027	0.039			
	8:30 AM Mar 14	Import price index	Feb	MoM % chg.	-0.025	0.562	0.021	0.013			
	8:30 AM Mar 14	Export price index	Feb	MoM % chg.	-0.151	0.638	0.042	0.033			
	10:00 AM Mar 14	New single family houses sold	Jan	MoM % chg.	-2.45	-6.90	0.008	-0.036			
	8:30 AM Mar 15	Empire State Mfg. Survey: General business conditions	Mar	Index	9.72	3.70	0.003	-0.016			
	9:20 AM Mar 15	Industrial production index	Feb	MoM % chg.	0.067	0.148	0.269	0.022			
	9:20 AM Mar 15	Capacity utilization	Feb	Ppt. chg.	0.014	-0.034	0.349	-0.017			
	10:00 AM Mar 15	JOLTS: Job openings: Total	Jan	Level chg. (thousands)	162.9	102.0	*0.030	-0.002			
		Data revisions						-0.021			
Mar 15								1.37			

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



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

Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth		
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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			
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			Data revisions					0.019			
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Source: Authors' calculations, based on data accessed through Haver Analytics.

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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