

# NOWCASTING REPORT

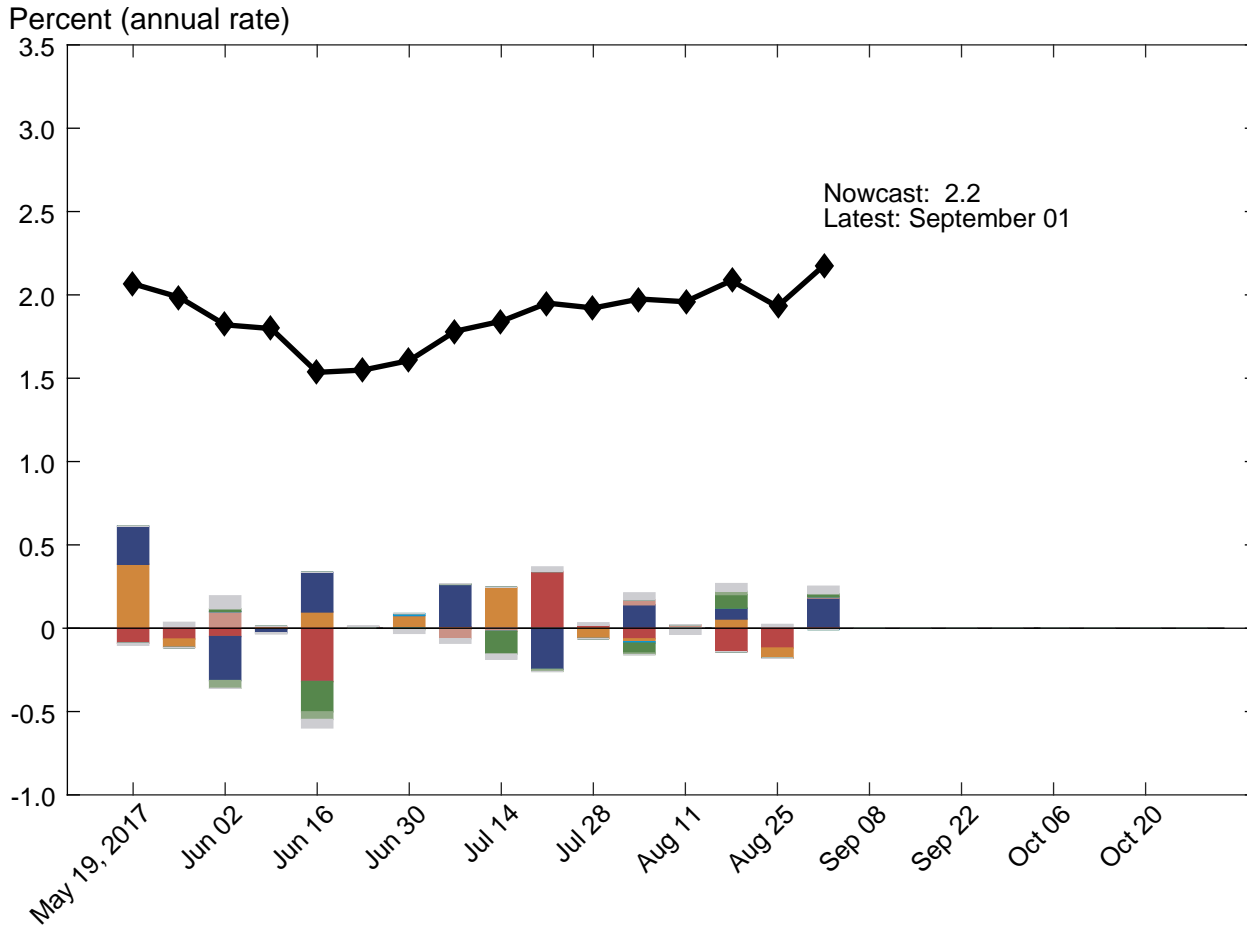
Updated: September 1, 2017

- The New York Fed Staff Nowcast stands at 2.2% for 2017:Q3.
- News from this week's data releases increased the nowcast by 0.3 percentage point.
- Positive news from the ISM manufacturing report accounted for most of the increase.

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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 | 2017:Q3 GDP Growth



**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

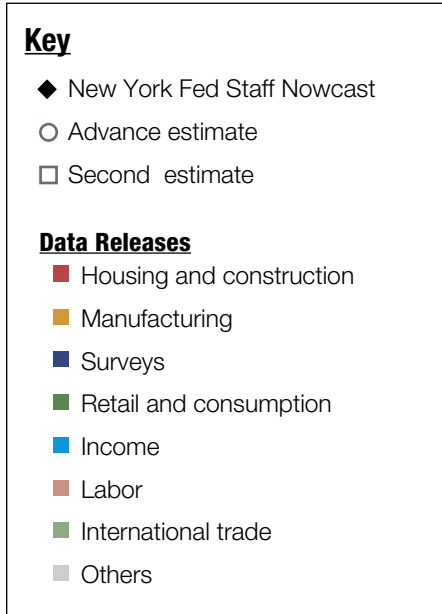
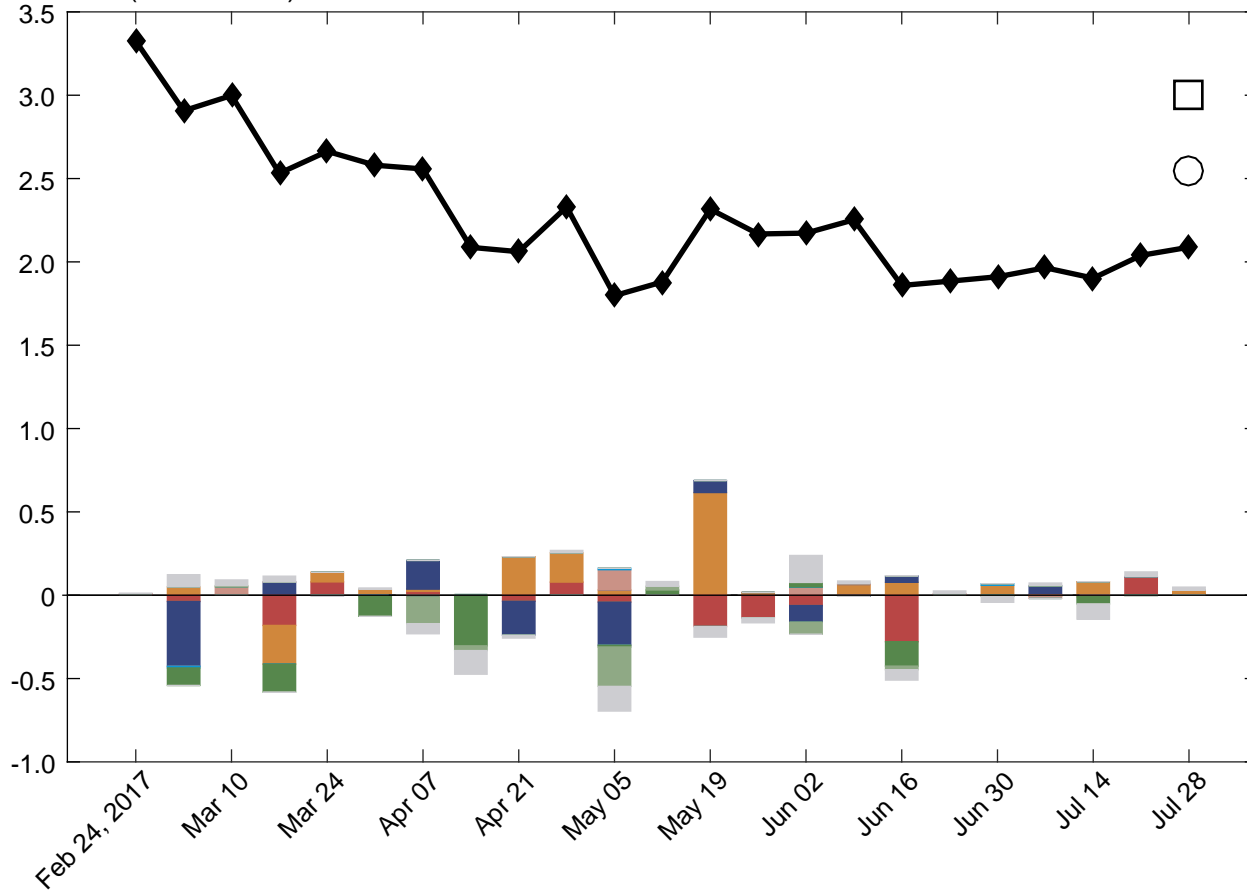
| <span style="color: #A52A2A;">■</span> Housing and construction <span style="color: #DAA520;">■</span> Manufacturing <span style="color: #191970;">■</span> Surveys <span style="color: #3CB371;">■</span> Retail and consumption <span style="color: #1E90FF;">■</span> Income <span style="color: #A0522D;">■</span> Labor <span style="color: #6B8E23;">■</span> International trade <span style="color: #A9A9A9;">■</span> Others |                 |  |                  |                        |          |        |        |            |                    |
|---|-----------------|--|------------------|------------------------|----------|--------|--------|------------|--------------------|
| Update  | Release Date    | Data Series  | Reference Period | Units                  | Forecast | Actual | Weight | Impact     | Nowcast GDP Growth |
|   |                 |  |                  |                        | [a]      | [b]    | [c]    | [c(b - a)] |                    |
| Aug 04  | 10:00 AM Aug 08 | <span style="color: #A52A2A;">■</span> JOLTS: Job openings: Total                            | Jun              | Level chg. (thousands) | 136.6    | 461.0  | 0.058* | 0.019      | <b>1.98</b>        |
|   | 8:30 AM Aug 09  | <span style="color: #A52A2A;">■</span> Nonfarm business sector: Unit labor cost              | Q2               | QoQ % chg. AR          | -0.277   | 0.626  | 0.001  | 0.001      |                    |
|   | 8:30 AM Aug 10  | <span style="color: #A9A9A9;">■</span> PPI: Final demand                                     | Jul              | MoM % chg.             | 0.127    | -0.089 | 0.049  | -0.011     |                    |
|   | 8:40 AM Aug 11  | <span style="color: #A9A9A9;">■</span> CPI-U: All items                                      | Jul              | MoM % chg.             | 0.102    | 0.106  | 0.101  | 0.000      |                    |
|   | 8:40 AM Aug 11  | <span style="color: #A9A9A9;">■</span> CPI-U: All items less food and energy                 | Jul              | MoM % chg.             | 0.146    | 0.114  | 0.115  | -0.004     |                    |
|   |                 | <span style="color: #A9A9A9;">■</span> Data revisions  |                  |                        |          |        |        | -0.022     |                    |
| Aug 11  | 8:30 AM Aug 15  | <span style="color: #3CB371;">■</span> Retail sales and food services                        | Jul              | MoM % chg.             | 0.375    | 0.602  | 0.359  | 0.082      | <b>1.96</b>        |
|   | 8:30 AM Aug 15  | <span style="color: #3CB371;">■</span> Import price index                                    | Jul              | MoM % chg.             | -0.029   | 0.082  | 0.024  | 0.003      |                    |
|   | 8:30 AM Aug 15  | <span style="color: #3CB371;">■</span> Export price index                                    | Jul              | MoM % chg.             | 0.038    | 0.411  | 0.045  | 0.017      |                    |
|   | 8:30 AM Aug 15  | <span style="color: #191970;">■</span> Empire State Mfg. Survey: General business conditions | Aug              | Index                  | 12.7     | 25.2   | 0.008  | 0.100      |                    |
|   | 8:30 AM Aug 16  | <span style="color: #A52A2A;">■</span> Housing starts  | Jul              | MoM % chg.             | -1.92    | -4.78  | 0.031  | -0.090     |                    |
|   | 8:30 AM Aug 16  | <span style="color: #A52A2A;">■</span> Building permits                                      | Jul              | Level chg. (thousands) | -34.7    | -52.0  | 0.003  | -0.052     |                    |
|   | 8:30 AM Aug 17  | <span style="color: #191970;">■</span> Philly Fed Mfg. business outlook: Current activity    | Aug              | Index                  | 24.7     | 18.9   | 0.006  | -0.035     |                    |
|   | 9:10 AM Aug 17  | <span style="color: #DAA520;">■</span> Industrial production index                           | Jul              | MoM % chg.             | 0.081    | 0.192  | 0.322  | 0.035      |                    |
|   | 9:10 AM Aug 17  | <span style="color: #DAA520;">■</span> Capacity utilization                                  | Jul              | Ppt. chg.              | 0.025    | 0.072  | 0.421  | 0.020      |                    |
|   |                 | <span style="color: #A9A9A9;">■</span> Data revisions  |                  |                        |          |        |        | 0.047      |                    |
| Aug 17  | 10:00 AM Aug 23 | <span style="color: #A52A2A;">■</span> New single family houses sold                         | Jul              | MoM % chg.             | -0.459   | -9.37  | 0.013  | -0.119     | <b>2.09</b>        |
|   | 8:30 AM Aug 25  | <span style="color: #DAA520;">■</span> Manufacturers' new orders: Durable goods              | Jul              | MoM % chg.             | -2.02    | -6.79  | 0.023  | -0.109     |                    |
|   | 8:30 AM Aug 25  | <span style="color: #DAA520;">■</span> Manufacturers' shipments: Durable goods               | Jul              | MoM % chg.             | 0.407    | 0.412  | 0.120  | 0.001      |                    |
|   | 8:30 AM Aug 25  | <span style="color: #DAA520;">■</span> Mfrs.' unfilled orders: All manufacturing industries  | Jul              | MoM % chg.             | 0.834    | -0.337 | -0.031 | 0.037      |                    |
|   | 8:30 AM Aug 25  | <span style="color: #DAA520;">■</span> Manufacturers' inventories: Durable goods             | Jul              | MoM % chg.             | 0.368    | 0.337  | -0.388 | 0.012      |                    |
|   |                 | <span style="color: #A9A9A9;">■</span> Data revisions  |                  |                        |          |        |        | 0.023      |                    |
| Aug 25  | 8:30 AM Aug 28  | <span style="color: #DAA520;">■</span> Merchant wholesalers: Inventories: Total              | Jul              | MoM % chg.             | 0.472    | 0.426  | -0.161 | 0.007      | <b>1.93</b>        |
|   | 8:05 AM Aug 30  | <span style="color: #A52A2A;">■</span> ADP nonfarm private payroll employment                | Aug              | Level chg. (thousands) | 188.8    | 237.0  | 0.923* | 0.044      |                    |
|   | 8:30 AM Aug 30  | <span style="color: #A9A9A9;">■</span> Real gross domestic income                            | Q2               | QoQ % chg. AR          | 1.98     | 2.85   | 0.013  | 0.012      |                    |
|   | 8:30 AM Aug 31  | <span style="color: #1E90FF;">■</span> Real disposable personal income                       | Jul              | MoM % chg.             | 0.217    | 0.187  | 0.040  | -0.001     |                    |
|   | 8:30 AM Aug 31  | <span style="color: #A9A9A9;">■</span> PCE less food and energy: Chain price index           | Jul              | MoM % chg.             | 0.141    | 0.089  | 0.206  | -0.011     |                    |
|   | 8:30 AM Aug 31  | <span style="color: #A9A9A9;">■</span> PCE: Chain price index                                | Jul              | MoM % chg.             | 0.116    | 0.088  | 0.115  | -0.003     |                    |
|   | 8:40 AM Aug 31  | <span style="color: #3CB371;">■</span> Real personal consumption expenditures                | Jul              | MoM % chg.             | 0.188    | 0.246  | 0.323  | 0.019      |                    |
|   | 8:30 AM Sep 01  | <span style="color: #A52A2A;">■</span> All employees: Total nonfarm                          | Aug              | Level chg. (thousands) | 190.3    | 156.0  | 0.286* | -0.010     |                    |
|   | 8:30 AM Sep 01  | <span style="color: #A52A2A;">■</span> Civilian unemployment rate                            | Aug              | Ppt. chg.              | -0.031   | 0.100  | -0.205 | -0.027     |                    |
|   | 10:00 AM Sep 01 | <span style="color: #191970;">■</span> ISM mfg.: Pmi composite index                         | Aug              | Index                  | 56.5     | 58.8   | 0.046  | 0.103      |                    |
|   | 10:00 AM Sep 01 | <span style="color: #191970;">■</span> ISM mfg.: Prices index                                | Aug              | Index                  | 62.9     | 62.0   | 0.006  | -0.006     |                    |
|   | 10:00 AM Sep 01 | <span style="color: #191970;">■</span> ISM mfg.: Employment index                            | Aug              | Index                  | 55.5     | 59.9   | 0.017  | 0.076      |                    |
|   | 10:00 AM Sep 01 | <span style="color: #A52A2A;">■</span> Value of construction put in place                    | Jul              | MoM % chg.             | -0.434   | -0.634 | 0.033  | -0.007     |                    |
|   |                 | <span style="color: #A9A9A9;">■</span> Data revisions  |                  |                        |          |        |        | 0.047      |                    |
| Sep 01  |                 |  |                  |                        |          |        |        |            | <b>2.17</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 | 2017:Q2 GDP Growth

Percent (annual rate)



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)]  |                    |
| Jun 30         | 10:00 AM Jul 03 | ■ ISM mfg.: Pmi composite index                         | Jun                          | Index                  | 55.8                   | 57.8        | 0.023   | 0.046       | <b>1.91</b>        |
|                | 10:00 AM Jul 03 | ■ ISM mfg.: Prices index                                | Jun                          | Index                  | 60.7                   | 55.0        | 0.003   | -0.016      |                    |
|                | 10:00 AM Jul 03 | ■ ISM mfg.: Employment index                            | Jun                          | Index                  | 54.4                   | 57.2        | 0.009   | 0.024       |                    |
|                | 10:10 AM Jul 03 | ■ Value of construction put in place                    | May                          | MoM % chg.             | -0.281                 | -0.023      | 0.018   | 0.005       |                    |
|                | 10:00 AM Jul 05 | ■ Inventories: Total business                           | May                          | MoM % chg.             | 0.182                  | 0.265       | -0.079  | -0.006      |                    |
|                | 8:05 AM Jul 06  | ■ ADP nonfarm private payroll employment                | Jun                          | Level chg. (thousands) | 232.3                  | 158.0       | 0.180*  | -0.013      |                    |
|                | 8:30 AM Jul 06  | ■ Exports: Goods and services                           | May                          | MoM % chg.             | 0.327                  | 0.447       | 0.047   | 0.006       |                    |
|                | 8:30 AM Jul 06  | ■ Imports: Goods and services                           | May                          | MoM % chg.             | 0.003                  | -0.093      | 0.034   | -0.003      |                    |
|                | 10:00 AM Jul 06 | ■ ISM nonmanufacturing: NMI composite index             | Jun                          | Index                  | 58.6                   | 57.4        | 0.002   | -0.002      |                    |
|                | 8:30 AM Jul 07  | ■ All employees: Total nonfarm                          | Jun                          | Level chg. (thousands) | 123.9                  | 222.0       | 0.132*  | 0.013       |                    |
|                | 8:30 AM Jul 07  | ■ Civilian unemployment rate                            | Jun                          | Ppt. chg.              | 0.002                  | 0.100       | -0.125  | -0.012      |                    |
|                |                 |   | ■ Data revisions             |                        |                        |             |   | 0.032       |                    |
|                |                 |   | ■ Parameter revisions        |                        |                        |             |   | -0.018      |                    |
|                | Jul 07          | 10:00 AM Jul 11   | ■ JOLTS: Job openings: Total | May                    | Level chg. (thousands) | -23.4       | -301.0  | 0.035*      |                    |
| 8:30 AM Jul 13 |                 | ■ PPI: Final demand                                     | Jun                          | MoM % chg.             | 0.110                  | 0.089       | 0.020   | -0.000      |                    |
| 8:30 AM Jul 14 |                 | ■ Retail sales and food services                        | Jun                          | MoM % chg.             | 0.326                  | -0.155      | 0.089   | -0.043      |                    |
| 8:40 AM Jul 14 |                 | ■ CPI-U: All items                                      | Jun                          | MoM % chg.             | 0.074                  | -0.023      | 0.025   | -0.002      |                    |
| 8:40 AM Jul 14 |                 | ■ CPI-U: All items less food and energy                 | Jun                          | MoM % chg.             | 0.130                  | 0.119       | 0.032   | -0.000      |                    |
| 9:30 AM Jul 14 |                 | ■ Industrial production index                           | Jun                          | MoM % chg.             | 0.049                  | 0.387       | 0.132   | 0.045       |                    |
| 9:30 AM Jul 14 |                 | ■ Capacity utilization                                  | Jun                          | Ppt. chg.              | 0.001                  | 0.216       | 0.171   | 0.037       |                    |
|                |                 | ■ Data revisions  |                              |                        |                        |             | -0.088  |             |                    |
| Jul 14         | 8:30 AM Jul 17  | ■ Empire State Mfg. Survey: General business conditions | Jul                          | Index                  | 20.2                   | 9.80        | 0.000   | -0.004      | <b>1.90</b>        |
|                | 8:30 AM Jul 18  | ■ Import price index                                    | Jun                          | MoM % chg.             | 0.154                  | -0.163      | 0.005   | -0.002      |                    |
|                | 8:30 AM Jul 18  | ■ Export price index                                    | Jun                          | MoM % chg.             | -0.050                 | -0.164      | 0.014   | -0.002      |                    |
|                | 8:30 AM Jul 19  | ■ Housing starts  | Jun                          | MoM % chg.             | 1.48                   | 8.29        | 0.008   | 0.057       |                    |
|                | 8:30 AM Jul 19  | ■ Building permits                                      | Jun                          | Level chg. (thousands) | 16.6                   | 86.0        | 0.001   | 0.053       |                    |
|                | 8:30 AM Jul 20  | ■ Philly Fed Mfg. business outlook: Current activity    | Jul                          | Index                  | 27.0                   | 19.5        | -0.001  | 0.005       |                    |
|                |                 |   | ■ Data revisions             |                        |                        |             |   | 0.028       |                    |
| Jul 20         | 10:00 AM Jul 26 | ■ New single family houses sold                         | Jun                          | MoM % chg.             | -0.527                 | 0.826       | 0.004   | 0.005       | <b>2.04</b>        |
|                | 8:30 AM Jul 27  | ■ Manufacturers' new orders: Durable goods              | Jun                          | MoM % chg.             | 1.01                   | 6.45        | 0.009   | 0.046       |                    |
|                | 8:30 AM Jul 27  | ■ Manufacturers' shipments: Durable goods               | Jun                          | MoM % chg.             | 0.039                  | -0.049      | 0.046   | -0.004      |                    |
|                | 8:30 AM Jul 27  | ■ Mfrs.' unfilled orders: All manufacturing industries  | Jun                          | MoM % chg.             | 0.224                  | 1.27        | 0.002   | 0.002       |                    |
|                | 8:30 AM Jul 27  | ■ Manufacturers' inventories: Durable goods             | Jun                          | MoM % chg.             | 0.104                  | 0.407       | -0.046  | -0.014      |                    |
|                | 8:30 AM Jul 27  | ■ Merchant wholesalers: Inventories: Total              | Jun                          | MoM % chg.             | 0.263                  | 0.566       | -0.021  | -0.006      |                    |
|                |                 | ■ Data revisions  |                              |                        |                        |             | 0.019   |             |                    |
| Jul 28         |                 |   |                              |                        |                        |             |   | <b>2.09</b> |                    |
|                | 8:30 AM Jul 28  | ■ Real gross domestic product (advance)                 | Q2                           | QoQ % chg. AR          | 2.09                   | <b>2.54</b> | We have concluded our updates of the Q2 nowcast |             |                    |
|                | 8:30 AM Aug 30  | ■ Real gross domestic product (second)                  | Q2                           | QoQ % chg. AR          |                        | <b>3.00</b> | Nowcast stopped with the second GDP release     |             |                    |

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.
- *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. For how long do you report a quarter?**

We start reporting the nowcast of GDP growth for a reference quarter about one month before the quarter begins; we stop updating it about one month after the quarter closes.

Precise dates are related to the Commerce Department's schedule for the release of official GDP estimates. For example, we began reporting the nowcast for 2016:Q1 on November 20, 2015, just after the government released the second GDP estimate for 2015:Q3. We stopped updating the nowcast for 2016:Q1 on April 28, 2016, with the release of the advance GDP estimate for the reference quarter. We continued reporting 2016:Q1 until the second GDP estimate for the quarter became available. At that point, we started computing the nowcasts for 2016:Q3.

### **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