



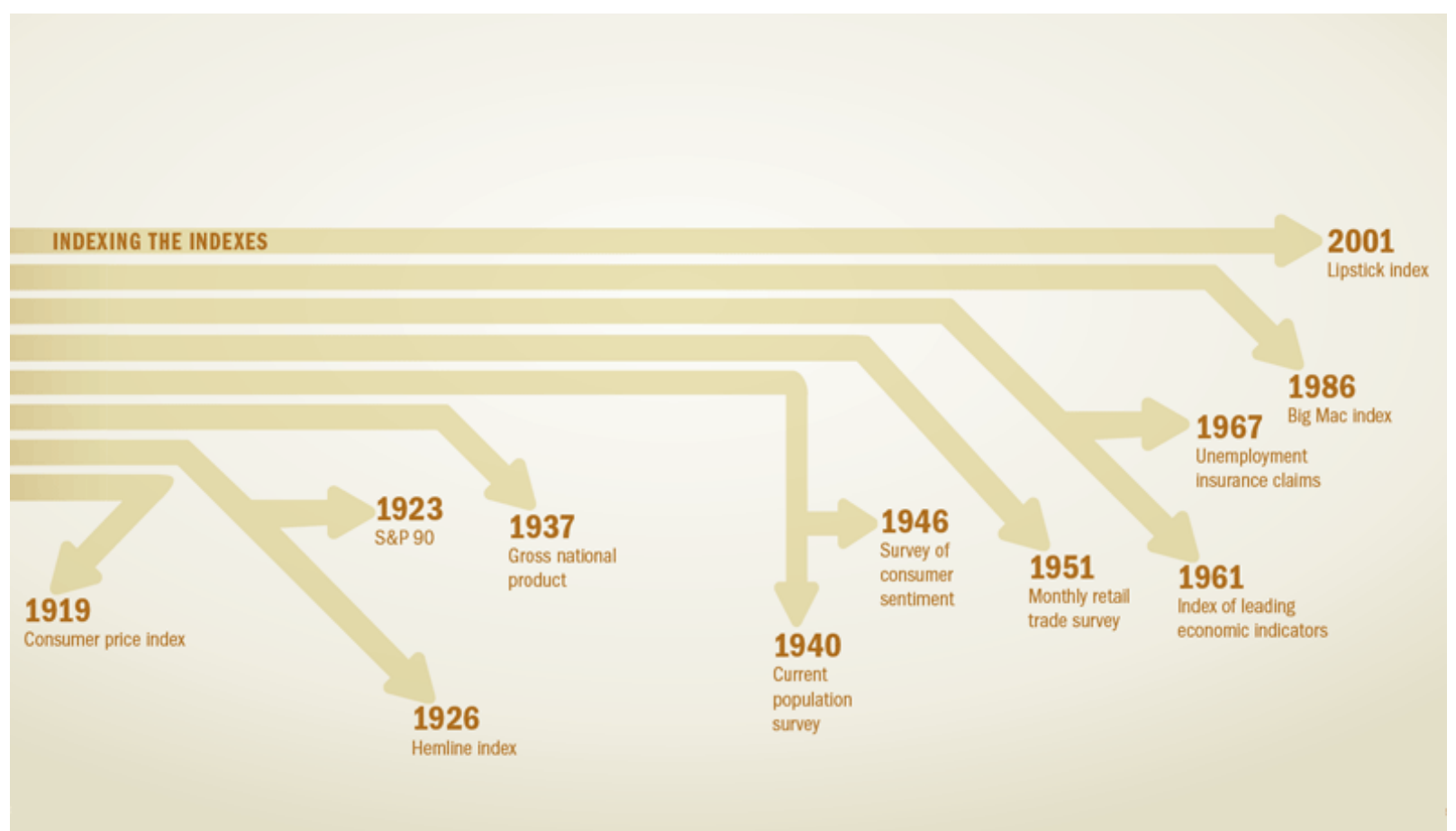
## Part Chart, Part Science: The Evolution of Economic Indicators

Economists today have access to amounts of data that their forebears could only dream of. As the economy changes over time, the metrics that economists use change as well. The effort to understand the large, complex U.S. economy has led to the development and introduction of a wide array of useful indicators.

July 14, 2016

On the ninth floor of the Atlanta Fed's headquarters building, economists are engaged in an ongoing quest to better understand our complex economy—locally, regionally, nationally, and globally. The economy is intricate, ever-changing, and encompasses countless intertwined strands. Particularly after a huge disruption like the Great Recession, even tried and true tools that monitor vital signs are sometimes only rough guides. Some indicators become less effective with time.

So economists, including at the Atlanta Fed, work to devise new and better indicators.



Note: Standard & Poor's primary stock index was initially the S&P 90; the S&P 500 was introduced in 1957. In 1991, the U.S. Bureau of Economic Analysis announced that it would emphasize GDP as the primary measure of U.S. output.

Consider gross domestic product, or GDP. This tally of the total value of goods and services produced within U.S. borders is perhaps the most important measure included in the U.S. Commerce Department's original batch of economic measurements known as the [national income and products account](#) (NIPAs). Countless economic decisions hinge on this one figure.

But even the so-called granddaddy of economic indicators has in some ways failed to keep pace with the rapidly changing U.S. economy. For example, services now account for more than two-thirds of gross domestic product, or GDP, compared to about one-fifth for manufacturing. However, there are vastly more data on the latter. The [U.S. Bureau of Economic Analysis](#) (BEA), which publishes the NIPAs each quarter, has worked to change this imbalance—for example, by creating experimental satellite accounts for several industries that are not fully reflected in the national accounts. They include travel and tourism, health care, and arts and cultural production.

### Atlanta Fed tools measure signs of recovery

Like many economic statistics, GDP is released well after the period it describes. As a result, economists are always devising new tools to get a more current read on GDP. In July 2014, the Atlanta Fed publicly launched [GDPNow](#), which provides a real-time forecast, or "nowcast," of this key indicator before the BEA releases it.

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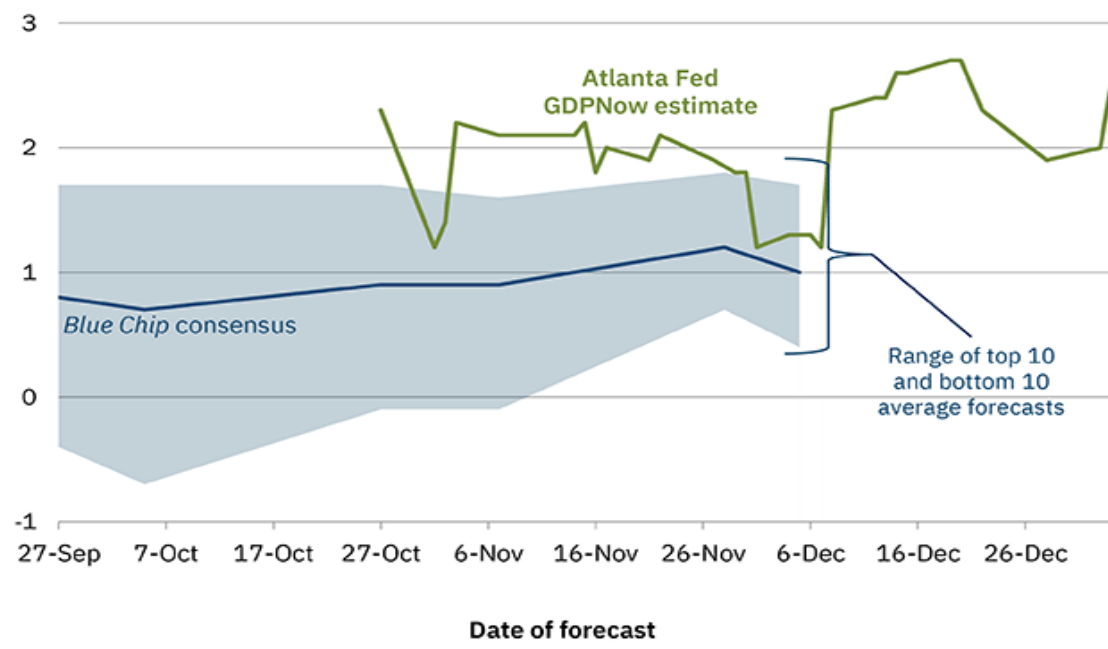
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**Evolution of Atlanta Fed GDPNow real GDP estimate for 2023: Q4**  
Quarterly percent change (SAAR)



**Sources:** Blue Chip Economic Indicators and Blue Chip Financial Forecasts  
**Note:** The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the Blue Chip survey.

Bloomberg Markets has called GDPNow "a must-read." The model, created by Atlanta Fed senior economist Patrick Higgins, incorporates the forecasts of 13 elements that influence GDP. This allows GDPNow to provide insight into why economic activity is likely to strengthen or weaken from its current trend. Another benefit of the model is that it's updated five to six times a month as opposed to monthly or quarterly.

Mike Chriszt, a vice president in the Atlanta Fed's public affairs department, also notes the importance of surveys as economists try to make sense of the mountains of data released each week. "Surveys help bridge the gap between data and anecdotal evidence," he explains.



**"Few people realize that in the 1920s, the government was collecting very little data."**

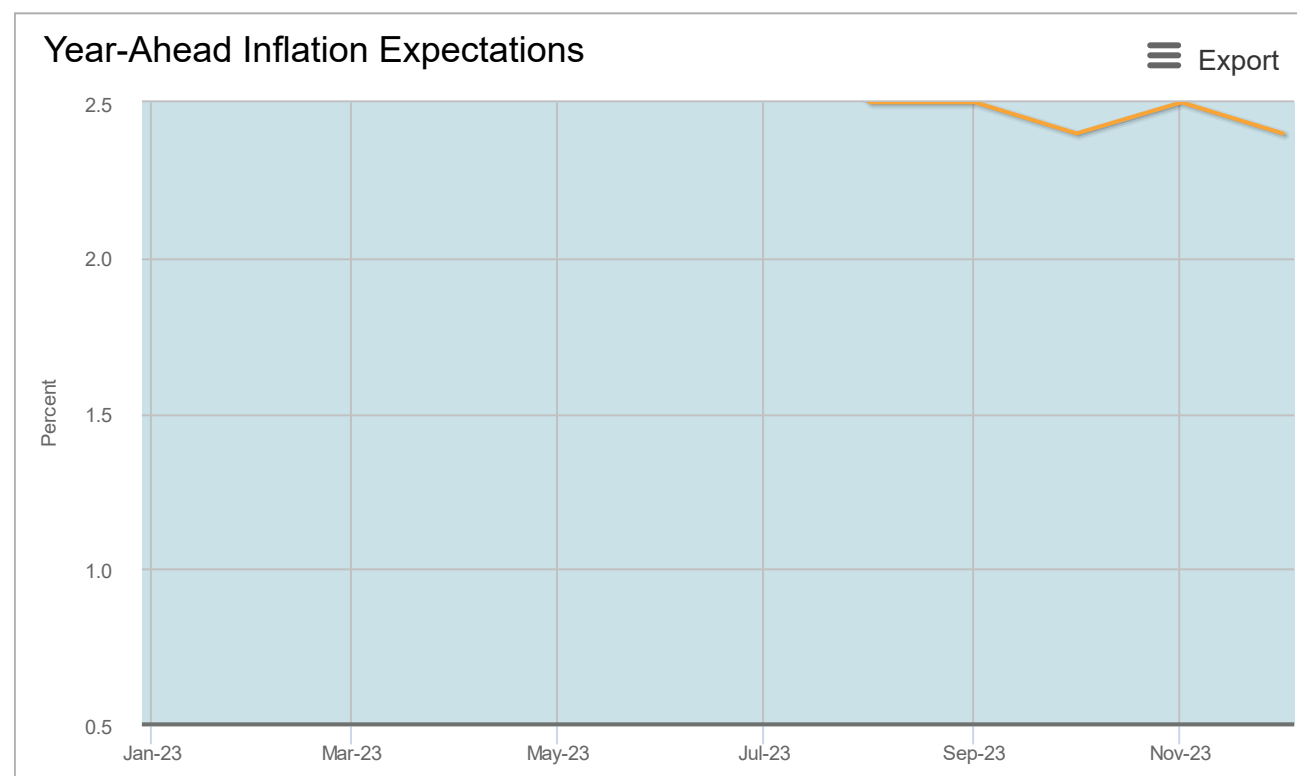
Mike Bryan, Atlanta Fed vice president

**"Surveys help bridge the gap between data and anecdotal evidence."**

Mike Chriszt, Atlanta Fed vice president



The Atlanta Fed's [business inflation expectations \(BIE\) survey](#) is a fitting example. Developed in 2012 by a team headed by Atlanta Fed vice president Mike Bryan, the survey fills a critical gap in inflation data—the price expectations of businesses. Before the survey, information on businesses' inflation expectations was largely anecdotal. Today, the monthly survey of southeastern businesses gives economists key insights into their business conditions, pricing pressures, and inflation expectations.

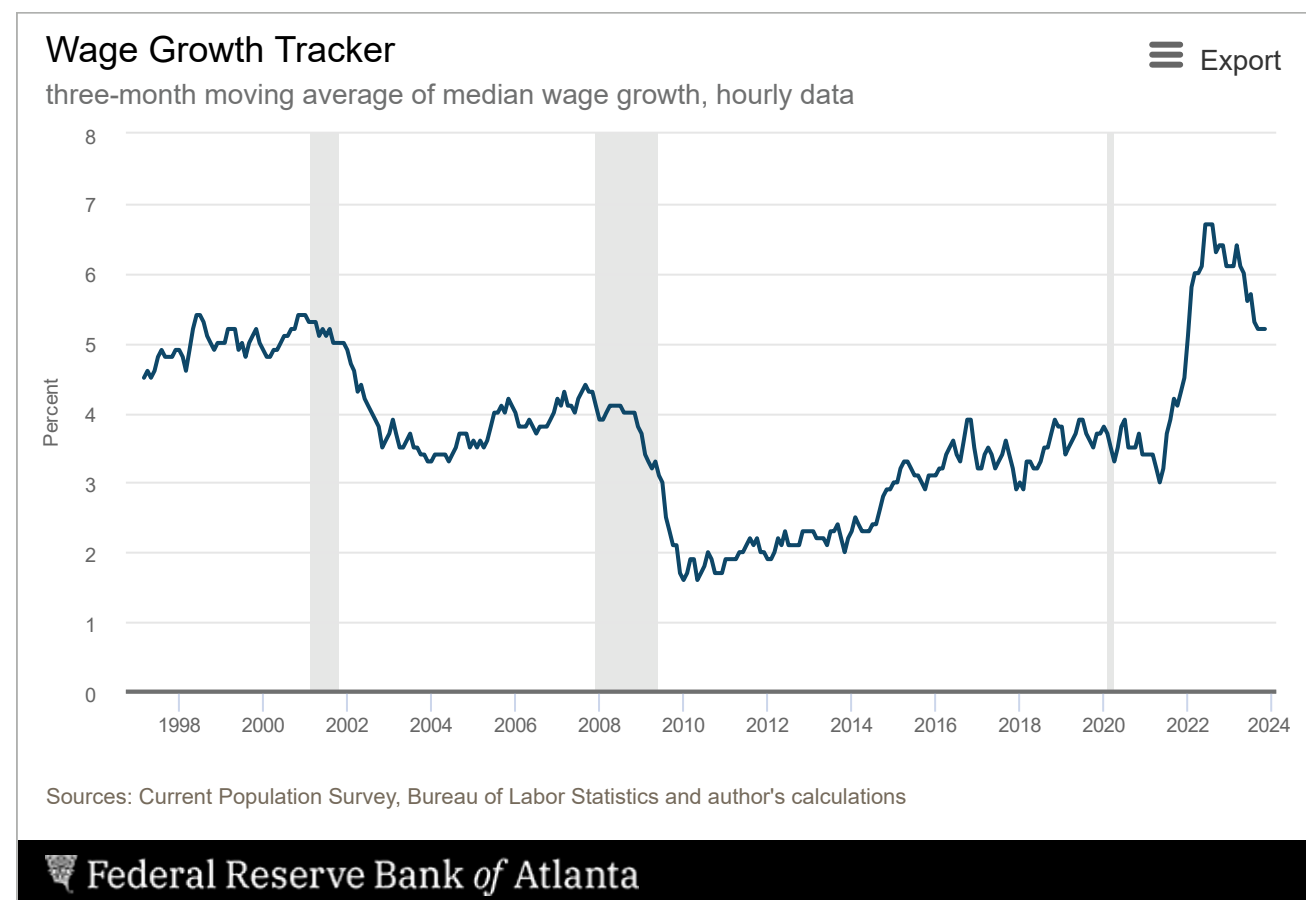


The June BIE survey, for example, found that 219 responding firms expect 1.8 percent inflation over the next year. In addition to

a recurring series of questions, each BIE survey includes one special query to elicit information that can help Fed policymakers gauge the future path of inflation. The most recent BIE survey asked firms how far into the future they typically consider possible changes in their own costs when they change their prices.

Striving for low and stable inflation is half of the Fed's dual mandate from Congress, alongside maximum employment.

A core element of inflation is wage pressure. During the recovery from the Great Recession, tepid wage growth has been a persistent puzzle. A tightening labor market typically pressures employers to increase wages so they can attract workers from a dwindling pool. But even amid an improving labor market, average worker pay since the recession has risen only haltingly. Policymakers, including those at the Fed, view wage growth as a critical signal about the health of the labor market. So, to gain a clearer view of wage trends, Atlanta Fed researchers, led by senior economist John Robertson, in 2015 introduced the [Wage Growth Tracker](#).



The new tool is based on Census Bureau surveys of thousands of households, in contrast to other measures that survey businesses. Plus, the Atlanta Fed's new indicator is updated monthly, so it gives the public a faster measure of the jobs market than the Department of Labor's quarterly readings of average hourly earnings measure, and its Employment Cost Index. Like GDPNow, Wage Growth Tracker has garnered attention from the general [business media](#) as well as [economists](#).

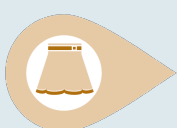
Robertson's team recently added a couple of elements to the tracker. Because wage growth patterns of people who change jobs and those who stay in the same job can shed light on the relative strength of the labor market, the researchers added downloadable data on "switchers" and "stayers" to the tracker web page. Indeed, for people in the same job, the May Wage Growth Tracker reading was a 3 percent increase from a year earlier, the same as in April. Meanwhile, for people switching jobs from a year earlier the median growth tracker increased from 4.1 percent to 4.3 percent in May, the highest reading since December 2007. That difference in wage growth between people changing jobs and remaining in the same position is typical in a tightening labor market.

Atlanta Fed economists are also following—and working to refine—other indicators that have taken on added importance since the Great Recession. Two separate reports, published by the [U.S. Census Bureau](#) and the [U.S. Bureau of Labor Statistics](#), track new business formation as a key engine of job creation—one that has sputtered in recent years. This source of data is important because new firms collectively create about 3 million jobs nationally, on average, in their first year, according to research by the Kauffman Foundation.

Kauffman bases its estimates on statistics from the Census Bureau's [Business Dynamics Statistics](#) series. The BLS also tracks job creation by new firms, and its numbers diverge substantially from those of the Census Bureau. The two sets of statistics tend to show the same general trends—a steep drop during the recession, and essentially a plateau since—but their exact counts differ.

## Off the Charts

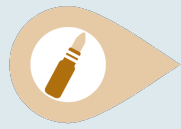
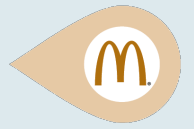
Almost anything—from sales of lipstick to Big Macs—can be an economic indicator. While most economists rely on the official (that is, government) numbers, such as GDP and monthly payroll figures, some lesser-known (and sometimes quirky) indicators can give them a more nuanced perspective on consumer and business behavior. As an added benefit, many "unofficial" indicators are timelier than the official, headline-grabbing figures. The following is just a sampling of the offbeat indicators that lend a unique perspective on the economy.



The **hemline index** is attributed to economist George Taylor, who in the 1920s noticed that women's hemlines seemed to rise and fall with the economy (or the stock market, according to some reports). He theorized that when the economy was booming, women wore shorter skirts to show off their silk stockings.

The opposite was true during economic slumps, when women would wear longer skirts to hide their bare legs. Since stockings are no longer as ubiquitous as they once were, today's movements in the index are more psychological, indicating a riskier or more conservative outlook. While a look back at fashion history seems to validate Taylor's theory—think flapper skirts in the roaring 1920s and peasant skirts in the recession-plagued 1970s—the hemline index has been hotly debated since its conception. So, is it a reliable indicator or an urban myth? According to a [2010 paper](#) by economists Marjolein van Baardwijk and Philip Hans Franses, the theory holds, but with a lag time of roughly three years.

The **Big Mac index**, created by *The Economist* in 1986, signals whether a country's currency is under- or overvalued. [The index](#) relies on the theory of purchasing power parity, which says that currency exchange rates should adjust over the long term so that an identical product—say, a Big Mac—costs the same in each country. According to the magazine's January 2016 index, a Big Mac costs \$4.93 in the United States and \$2.68 in China, a snapshot indicating that the yuan was then undervalued by 46 percent. According to *The Economist*, so-called burgeronomics "has been surprisingly accurate in predicting long-run movements in exchange rates."



The **lipstick index** was introduced by Leonard Lauder, chairman emeritus of the cosmetics company Estee Lauder. According to [his theory](#), women splurge on little luxuries—lipstick, for example—when the economy is weak. Like the hemline index, the validity of the lipstick index is hotly disputed, in part because reliable historical data on lipstick sales are hard to come by. According to a [2009 article](#) in *The Economist*, there isn't a clear correlation between lipstick sales and the economy. However, some market-watchers have latched onto a broader category—cosmetics sales, which have a more reliable track record of booming during recessions.

Google.com is the go-to spot for **Internet searches**, allowing the company to collect massive amounts of data. As a result, some central banks, including the Federal Reserve and the Bank of England, are exploring how to use Internet search data as an economic indicator. The research so far indicates data can be helpful in "nowcasting"—keeping tabs on current economic activity. In a [2009 paper](#), Google Chief Economist Hal Varian and Hyunyoung Choi, senior economist at Google, wrote that "even predicting the present is useful, since it may help identify 'turning points' in economic time series." For example, "if people start doing significantly more searches for 'Real Estate Agents' in a certain location, it is tempting to think that house sales might increase in that area in the near future." However, although products such as Google Trends could provide a wealth of current data on consumer behavior, labor markets, and more, they have pitfalls, too. For one, the data only go back to 2004, and some key populations—namely low-income and elderly people—are underrepresented.



It is unclear exactly why the two data sets are different, says Atlanta Fed research economist Timothy Dunne. One explanation is how they compile data. BLS assembles information from each state, while Census pulls from a more global information base. This disparity in new-firm job creation numbers is just one of the head-scratchers involved in reading the economy, even in this age of big data.

Also still unknown: how many new firms have formed in the past couple of years. That's because the Census Bureau releases its most common measures of firm formations with a lag of about three years. So the most recent data available now are from 2013. Dunne is exploring novel ways to gauge startup activity more quickly. Indications from his work are that startup activity has not increased much since bottoming out in 2010.

## Limits, concerns about indicators date to their creation

Concerns about the national accounts date back to their creation. Their creator, economist Simon Kuznets, was frank about their shortcomings—one being that the accounts did not capture activities that, while not traded in the marketplace, have value nonetheless. More recent concerns center on the NIPAs' inability to capture the economic realities facing individual households, as well as their failure to expose the imbalances that persisted prior to the financial crisis and recession, including those in the housing and financial markets.

Imperfect though they were, the earliest economic indicators were a great leap forward when they were devised—during the Great Depression. Armed only with stock price indices, freight car loadings, and incomplete industrial production figures, policymakers struggled to monitor the economy's pulse during the worst economic contraction in modern history.

"Few people realize that in the 1920s and '30s, the government was collecting very little data," Bryan says.

To fill the gaps exposed by the Depression, the Commerce Department recruited Kuznets to create an estimate of the nation's income. [Thus was born](#) the NIPA. For the first time, policymakers had a comprehensive look at the U.S. economy and a benchmark from which to judge whether it was growing or shrinking.

Although more and better data help paint an accurate picture of the economy, simply having the data does not mean economists have it all figured out. "The real challenge is digging into as many data points as possible to build a narrative that makes sense," says Chriszt.

Robertson agrees. He monitors a wider range of economic and financial data than he did before the 2007 crisis, largely because the crisis highlighted just how interconnected the financial sector and the real economy can be. And while each economist has a favorite metric, they almost uniformly warn that "there is no perfect indicator." Data are essential for monitoring the economy's vital signs, but "no indicator on its own tells a complete story," says Robertson.

*Editor's note: A version of this article appeared on our website in 2012.*



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