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Remarks as Prepared for Delivery

EMBARGOED UNTIL 2:45 P.M U.S. Eastern Time,
Tuesday, July 15, 2025 – OR UPON DELIVERY

"Using Data in Monetary Policymaking: A View from the Fed"

Remarks at the NABE Foundation's 22nd Annual Economic Measurement Seminar

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July 15, 2025
Washington, D.C.

The views expressed today are my own, not necessarily those of my colleagues on the Federal Reserve Board of Governors or the Federal Open Market Committee.

Many thanks, Emily, for the kind introduction. It is a pleasure to be here with all of you, and with those who are joining online. I am really delighted to participate in the 2025 NABE Seminar on Economic Measurement.[1]

This is a topic I have cared deeply about for a long time. Early on, opportunities to use data to illuminate important ideas helped spur my interest in economics – and data analysis was one of the most fun parts of my economics education. I continue to enjoy learning about new approaches and methods for using different types of data to measure economic activity. And I see programs dedicated to economic measurement, like this one, as very important.

A mindset focused on data and rigorous empirical analysis has been invaluable throughout my professional career. It has played a role in my research, my teaching, and my data-based approach to decision-making in administrative and leadership positions.

Most recently, the use of economic data has been critically important in my role as President of the Federal Reserve Bank of Boston, where I participate on the Federal Open Market Committee (FOMC) – the monetary policymaking body of our nation's central bank. The Federal Reserve is highly data-intensive and data-focused, and I truly appreciate being part of an organization rooted in reliance on data, facts, and empirical analysis, without pre-conceived biases.

In my remarks today, I'll first briefly mention the importance of timely, reliable data of various types for monetary policymaking. I'll then spend most of my time discussing some of the ways I use economic data in practice. My goal is to give you a "look under the hood" at how data and analytics underpin my willingness to make statements like "*the economy is in a good place overall*," or "*wage growth is not a significant source of inflationary pressure*."

But first, my standard disclaimer. These remarks are my own, and may not reflect the views of my colleagues at the Federal Reserve Board of Governors or other Reserve Banks.

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[1] https://nabe.com/ems2025

A Broad Array of Timely, Reliable Data is Essential for Monetary Policymaking

High quality, timely data are essential for developing an accurate assessment of current economic conditions and a well-informed economic outlook.[2] Having and studying this information puts the FOMC in the best position to conduct monetary policy that fulfills our dual mandate from Congress. Furthermore, accurate data help Committee members explain monetary policy decisions with clarity and credibility.

While the Fed's mandate focuses explicitly on maximum employment and stable prices, the economy is highly interconnected, so assessing the labor market and inflation requires a broad understanding of economic conditions. In addition, the FOMC sets policy based on where the economy is *heading*, not just on its current state, for at least two reasons. First, monetary policy (think changes in the federal funds rate) works with a lag – meaning actions taken today will influence the economy over the medium run. Second, our mandate is not for "point-in-time" outcomes. Rather, the FOMC seeks to maintain price stability and maximum employment over time, sustaining conditions for a vibrant economy that enables households, firms, and communities to thrive long term.

As a result, monetary policymakers sift through a very broad array of data to gain insight into the many factors and economic relationships that determine the evolution of economic activity. We use statistical and anecdotal information that spans domestic, international, and financial developments.

The data we rely on are produced by a variety of sources. I'll highlight the important network of U.S. statistical agencies, including the Bureau of Economic Analysis, the Bureau of Labor Statistics, and the Census Bureau. The Federal Reserve also produces key data series. In particular, the Board of Governors provides a significant amount of financial data, especially on financial flows in the economy. It is important to recognize the sophistication behind all these data, and the continuing efforts of agencies and bureaus to improve them with limited resources.

Data from official agencies are supplemented by a vast array of complementary information from surveys, and other data produced by public and private sources. Also, the qualitative information we gain from speaking with regional business, labor, and community contacts provides invaluable perspectives about both current conditions and the outlook, as well as long-term opportunities and challenges.

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[2] High quality data are foundational for a well-functioning economy more broadly, not just for policymakers. Importantly, they help households and firms to make well-informed decisions.

Casting a wide net with data is particularly helpful when the economic landscape changes in ways that make its evolution more difficult to predict.[3] Indeed, the economy continues to evolve, for example, from changes in global supply, tariff increases, and the adoption of AI. As a result, policymakers need to make effective use of information that can provide insight into this new environment. I'll note that technology, such as web-scraping and natural language processing, is playing a key role in the growing availability and analysis of such data.[4]

I'll end this segment by stressing that all data we use have strengths as well as limitations. So, we rely on internal and external experts, who understand that the details matter when it comes to how data are constructed. This helps us separate "the signal from the noise" inherent in any individual piece of data. Combined with a holistic approach that weaves together complementary types of information, this increases our confidence in the assessment of current economic conditions and the outlook.

Using Information, in Practice, to Assess Economic Conditions

In the rest of my remarks, I'll provide some examples of how the constellation of information comes into play for me, in practice, as an economist and policymaker. I'll start with data's role in my assessment of current economic conditions and then turn to data's role in my outlook and the implications for policy. [5]

I like to share my bottom line up front. In my view, the economy continues to be in a good place overall, close to the Congressionally mandated objectives of price stability and full employment. However, going forward, I expect to see some upward pressures on inflation, as well as some downward pressures on employment and economic growth. These assessments come from examining an extensive range of data types from a variety of sources. The figures I'll refer to highlight a few of these.

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[3] For example, policymakers relied on a variety of non-traditional data to gauge rapidly changing economic conditions during the COVID-19 pandemic. This included high frequency credit card spending data, and mobility statistics across various locations.

[4] The ability to field surveys of consumers and firms with increased frequency and broader reach – such as related to price expectations, hiring intentions, and even technology adoption – may prove particularly valuable.

[5] For a recent summary of my views on economic conditions, the outlook and the implications for policy, see Perspectives on the Economy from Susan M. Collins - Federal Reserve Bank of Boston.

While most of my examples focus on quantitative indicators, I want to emphasize that the *qualitative* information I gather from on-going discussions with a wide range of stakeholders throughout New England (the Boston Fed's District) are also very important for my understanding of how the economy is evolving, given what people and organizations tell me they are experiencing, and expect going forward.[6] You can see some examples of a few of these outreach discussions, in my first slide.

So, what data are behind my assessment that the economy is in a good place overall? Beginning with price stability, the blue line in **Figure 1** shows the behavior of (total or "headline") inflation, based on the personal consumption expenditures (PCE) price index — the Fed's preferred measure of the general price level. The red line is "core" inflation, which excludes the volatile, though obviously important, categories of food and energy and is helpful for assessing underlying inflation trends. Clearly there has been significant progress, albeit slow and uneven, toward the Fed's 2 percent target for headline PCE inflation — the green line.

Figure 2 breaks down core PCE inflation into its three main components – core goods inflation, shelter (or housing) inflation, and core services inflation (excluding housing). Because the sources of inflationary pressures may differ to some extent across sectors, I have found this decomposition very informative for understanding underlying inflationary trends. The panels show both 12-month measures (in blue) and the noisier, though timelier, 3-month measures (in red).

Core *goods* inflation, in panel A, was the first component to decline as supply chains normalized after the pandemic disruptions. But it has picked up some, recently, and is currently running above the rates that prevailed before the pandemic. Some of these recent movements in goods inflation are likely tariff-related, a topic I will return to later.

Core *services* inflation, including both housing and non-housing components, has declined more slowly. But as shown in panels B and C, services inflation has continued to moderate, especially on a 12-month basis, despite continued unevenness. This moderation reflects a more balanced labor market, with demand for workers no longer outstripping supply, as occurred coming out of the pandemic.[7]

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[6] For some examples of what I learn, see the summaries from my recent trips through New England's six states: In the Region - Federal Reserve Bank of Boston.

Figure 3 shows the recent evolution of the unemployment rate. After bottoming out at 3.5 percent in early 2023 – when labor market conditions were especially tight – unemployment has increased some, but remained just above 4 percent for the past year, still low by historical standards.

This normalization of the unemployment rate has been accompanied by a moderation in wage inflation, as illustrated in **Figure 4**, which depicts measures of wage inflation from two different sources. The blue line shows an official measure of labor compensation, the Employment Cost Index or ECI. The red line shows a relatively new measure of wage growth based on job postings from *Indeed*. This is one of many examples where I find it illuminating to consider multiple indicators of an economic variable to gain a fuller picture.

The ECI is a comprehensive measure that includes all employee compensation. It is well suited for assessing wage pressures because it is not affected by changes in labor force composition. The *Indeed* data are less comprehensive, but useful since they capture wages earned by people seeking new jobs. Because wages of existing employees tend to lag those of new hires, the *Indeed* data provide a more timely and forward-looking assessment of wage pressures in the labor market.

Broadly speaking, both wage measures suggest that the labor market is no longer a significant source of price pressures (inflation). However, the ECI remains a bit above pre-pandemic levels. This may reflect some residual catching up of *existing* workers' wages to the wages of new hires, which grew much faster during the pandemic recovery. One of the things I consider when formulating my inflation outlook is whether there is evidence of *new* price pressures – or if elevated inflation primarily reflects *past* shocks that are still working their way through the economy. In my view, parsing out the effects of new versus past shocks has been especially relevant for assessing wage pressures, as well as pressures in the housing rental market.

My judgement that the labor market is no longer a significant source of price pressures is also importantly influenced by the recent evolution of labor *productivity* – since productivity is key to lasting, non-inflationary wage gains. Here, I take a somewhat longer-term perspective by considering 8-quarter annualized changes in an economy-wide measure of output per hour, shown in the left panel of **Figure 5**. I could say much more

[7] Indeed, labor is an important input in the non-housing services sector while rents partly depend on the strength of employment conditions. A hot labor market tends to increase both components of services inflation.

about productivity trends both during the pandemic and since. But in the interest of time, I'll simply note that recent productivity growth has exceeded its pre-pandemic rate.

Importantly, the right-hand panel of Figure 5 shows that, when adjusted for productivity, the pace of ECI growth has been running around 2 percent recently, which is consistent with the Fed's 2 percent inflation target. Therefore, even though some indicators show wages still rising somewhat faster than before the pandemic, given recent productivity developments, I do not see wage growth as placing additional pressure on inflation. [8]

A host of other data corroborate that the labor market is now more in balance – generally healthy, though with some signs of labor demand moderating. Here, I will highlight analysis by my staff using information provided by innovative natural language methods. Specifically, this work exploits data on the required years of experience from online job postings, over time.

Figure 6 shows the results of this exercise. The right-hand panel provides the range of years of needed experience for jobs requiring at least a bachelor's degree, while the range for jobs requiring less education is shown on the left. In each panel, the blue lines plot the midpoint of the range, while the red dashed lines show the minimum and maximum values over time.

This figure highlights a recent rise in the required years of experience, especially for jobs needing more education. This evidence of tightening job requirements is consistent with firms becoming somewhat more cautious and selective in their hiring.[9]

So far, the moderation in labor demand has not placed significant upward pressure on the unemployment rate. This likely reflects, in part, slower growth in labor supply from reduced immigration. While it is challenging for official economic statistics to fully capture immigration flows in real time, alternative data sources can provide helpful insight. For example, my staff monitors the pipeline of work-permit approvals, to help gauge the

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[8]Work by my staff shows that labor remains relatively inexpensive, given recent productivity gains and price developments. See Garga, Vaishali, Giovanni Olivei, and Chistina Wang, 2024, "Productivity Improvements and Markup Normalization Can Support Further Wage Gains without Inflationary Pressures," Federal Reserve Bank of Boston Current Policy Perspectives 24-5; and Andrade, Philippe, Falk Bräuning, José L. Fillat, and Gustavo Joaquim, 2024, "Is Post-pandemic Wage Growth Fueling Inflation?" Federal Reserve Bank of Boston Current Policy Perspectives 24-1.

[9] It is also consistent with other labor market trends such as the recent increase in unemployment duration for young college graduates.

number of immigrants entering the labor force. Tracking these data will likely remain useful as immigration continues to slow.[10]

With moderating inflation and a still-healthy labor market, households' purchasing power remains relatively strong. This is reflected in GDP and consumption growth that are still solid, as illustrated in **Figure 7**.

I hope that this discussion has illuminated the data-driven nature of my conclusion that overall, current economic conditions remain relatively strong and resilient.

Using Information in Practice – for my Outlook, and Making Monetary Policy

I'll now turn from current economic conditions to the outlook, which is clouded by significant uncertainty. Indeed, it seems likely that the economy will move away, at least temporarily, from the favorable conditions I have just described. Tariff policy is the main driver, with higher broad-based tariffs than last year likely leading to a rise in inflation, higher unemployment, and slower GDP growth.[11]

However, the quantitative effects of higher tariffs are much more uncertain than their qualitative impact. The ultimate size of the levies and the particular goods affected will, of course, be an important determinant – but those underlying details remain unclear.

My staff has developed a new methodology that quantifies how price increases at the U.S. border transmit to domestic consumer prices. This methodology not only accounts for the effect of tariffs on *directly consumed* imported goods, but also for the effect of tariffs on imported *intermediate* goods used in domestic production. These intermediate goods eventually contribute to the import content of many goods and services – not just for goods such as motor vehicles, but also for things like hospital services, which are not typically top of mind when discussing tariffs.[12]

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[10] See, for example, Foote, Christopher, 2024, "Quantifying the Recent Immigration Surge: Evidence from Work-permit Applications," Federal Reserve Bank of Boston Research Department Working Papers No. 24-15.

[11] I do not discuss here the potential effects of other policy changes (such as fiscal, immigration, or regulatory policy) or geopolitical developments.

[12] Leveraging a vast amount of official statistics, including input-output data from the National Income and Product Accounts (NIPA), this analysis highlights that imported intermediates account for a significant share of the overall import content of final consumer goods and services. In particular, they account for

Figure 8 reports both direct and intermediate imports by country of origin, as a share of personal consumption expenditures, excluding food and energy. While this information is crucial to understanding the effect of tariffs on prices, their ultimate impact will also depend on the degree to which firms pass their increased costs on to consumers. Business surveys, along with analysis of firms' earnings calls and daily tracking of price data at large retailers, are being used to better understand firms' pricing intentions and actions.[13]

Figure 9 provides one example. It is based on special questions added to the Institute for Supply Management's (ISM's) spring semi-annual report,[14] which asked firms how they intend to adjust their prices in response to tariffs. The answers suggest that most plan to pass along some – even if not necessarily all – of the tariff costs.

The possibility that firms will absorb at least part of the levies by reducing their profit margins depends also on the state of their balance sheets. Here, financial data provide important insight. Broadly speaking, firms' financial positions remain healthy, with elevated profit margins – suggesting that overall, firms are in a reasonably good place to bear some of the increased costs from tariffs.

Determining how much demand may slow from tariffs is also important, and here households' financial conditions are particularly relevant. In this regard, I'll note that households' balance sheets also remain healthy overall, as evidenced by household net worth, which as a percentage of disposable income remains high by historical standards. This suggests that a typical household has the resources to at least partly offset a tariff-induced loss in purchasing power. Of course, the aggregate data often mask substantial differences across firms and households.

In all, financial data point to the possibility that the impact of tariffs may be lessened somewhat by an ability for firms to decrease profit margins and for consumers to

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roughly half or more of U.S. imports from many countries, including large trading partners like Mexico and Canada. For more details, see, Barbiero, Omar and Hillary Stein, 2025, "The Impact of Tariffs on Inflation," Federal Reserve Bank of Boston Current Policy Perspectives 25-2.

[13] See, for example, Cavallo, Alberto, Paola Llamas, and Franco Vazquez, 2025, "Tracking the Short-Run Price Impact of U.S. Tariffs."

[14] The survey underlying the report was conducted in April and May. For more details see: https://www.ismworld.org/supply-management-news-and-reports/reports/semi-annual-economic-forecast/2025/spring/

continue spending, despite higher prices. As a result, the adverse impact of tariffs on labor market conditions and economic growth may be more limited.

Clearly, uncertainty remains elevated. Pulling together the many types of data and analyses my staff and I examine, my expectation is that tariffs will boost inflation over the second half of this year. While the extent of the increase remains uncertain, it seems likely that core PCE inflation will be in the vicinity of 3 percent by year's end, before resuming its decline. Concerning the labor market side of our mandate, tariffs should slow demand and hiring, though not necessarily by a large amount.

Of course, there are risks to this baseline outlook, and I do not rule out scenarios with larger or more persistent effects from tariffs and ongoing economic uncertainty, as well as scenarios in which the effects are more muted. Calibrating appropriate policy in this context is challenging. However, continued overall solid economic conditions enable the Fed to take the time to carefully assess the wide range of incoming data. Thus, in my view, an "actively patient" approach to monetary policy remains appropriate at this time.

Concluding Observations

In conclusion, thank you for the opportunity to share my perspective, and some examples from my own experience. In has been a pleasure being with you to discuss why high-quality data are so important for effective policymaking; and how I (and other policymakers) use many types of data to assess economic and financial conditions, the outlook, and implications for appropriate monetary policy.

Let me end by conveying my very best wishes to each of you, as you continue to focus on economic measurement through seminars such as this one, and in your careers.

Thank you, and now I look forward to the conversation with Emily.