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CENTRAL TO AMERICA'S ECONOMY®

Unconventional

A Policymaker's
Reflections on Crisis
to Recovery

ANNUAL REPORT 2017



Table of Contents

Chair’s Message	2
President’s Message	4
Unconventional: A Policymaker’s Reflections on Crisis to Recovery	7
Foreword: A Policymaker’s Reflections	8
1. The Limits of Fiscal Policy	12
2. Fear of a Deflationary Trap	16
3. QE3: Data-Driven, Not Date-Driven	18
4. A Preferred Approach to Normalization	20
5. A Regime-Based View of the Economy	22
6. A Push for More Transparency	26
7. The Road to an Inflation Target	30
8. Alternatives to Inflation Targeting	34
9. Conclusion: Lessons Learned	36
Timeline: Pivotal Events from Crisis to Recovery	38
Beyond the Role of FOMC Policymaker: Reserve Bank CEO	42
Our People. Our Work.	46
Our Leaders. Our Advisers.	50
Boards of Directors, Advisory Councils, Bank Officers	52

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The views expressed are those of the authors and do not necessarily reflect those of the Federal Open Market Committee or the Federal Reserve System.

Our financial statements are available online. To read them, go to the website for the annual report, stlouisfed.org/annual-report/2017, and click on the Financial Statements button in the navigation bar.

CHAIR'S MESSAGE

Promoting a Healthy Economy and Financial Stability

The striking image of a soaring eagle in the St. Louis Fed's logo serves as a bold symbol of the Bank's mission to promote a healthy economy and financial stability. That word—stability—so appropriately describes the importance of the Federal Reserve over the past decade.

It has been nearly 10 years since the start of the financial crisis that led to what would become known as the Great Recession. James Bullard began his tenure as president of the St. Louis Fed in April 2008, just as the financial crisis was heating up.

As our nation struggled during the crisis and slow recovery, the Federal Reserve did not stand idly by. Through both conventional and unconventional monetary policy actions, the Fed responded carefully but aggressively by implementing a variety of programs designed to support the liquidity of financial institutions and improve conditions in financial markets. President Bullard, along with his fellow participants on the Fed's Federal Open Market Committee (FOMC), helped navigate the economy back on course.

Economic conditions today are much better, and the FOMC is in the ongoing process of returning monetary policy settings to more normal levels. The committee has raised the federal funds rate several times since December 2015 and recently has begun to gradually shrink the Fed's balance sheet. Through the strong leadership over the past decade from President Bullard and his colleagues across the Federal Reserve System, our nation has largely recovered from the financial crisis, recession and their aftermath.

The St. Louis Fed's board of directors is engaged with the Bank's work in promoting a healthy economy and financial stability—certainly the cutting-edge research of its economists, but also the Bank's leadership in supervising bank holding companies and state member banks, in fulfilling the Fed's role of fiscal agent to the U.S. Treasury, and in increasing the financial literacy and economic education of our citizens. I look toward the future with confidence as the St. Louis Fed stands in service to the Eighth Federal Reserve District and beyond.



Kathleen M. Mazzarella
Chair of the Board of Directors
Federal Reserve Bank of St. Louis



Kathleen M. Mazzarella is the chairman, president and CEO of Graybar Electric Co. Inc.

“These past 10 years have been anything but ordinary, defined more by their lack of convention than by what any model would have predicted precrisis.”

— James Bullard, *President and CEO*

PRESIDENT'S MESSAGE

A Fascinating Journey

Ten years ago, I was honored to accept the position of president and CEO of the Federal Reserve Bank of St. Louis. With this appointment, I was following a line of distinguished policymakers who carried on the strong, independent and academic research tradition of this Reserve Bank, which I've been a part of since 1990.

One of the interesting aspects of my job is that I started it on April 1, 2008—in the throes of the financial crisis. The mortgage crisis was already brewing, and banks were failing. The Fed was cutting the federal funds rate target and debating further stimulus measures. As you'll read in this report, this wasn't the time for lighthearted jokes or jovial congratulations.

To that end, I've spent time with fellow economists and other staff reflecting on how my presidency has coincided with—and has been somewhat defined by—the financial crisis, the Great Recession and ensuing recovery. Out of these discussions, an interesting “look back” began to take shape, fueling this year's annual report theme, *Unconventional: A Policymaker's Reflections on Crisis to Recovery*.

A Look Back

These past 10 years have been anything but ordinary, defined more by their lack of convention than by what any model would have predicted precrisis. We've now lived through the Great Recession, through an era of near-zero interest rates, through fears that the U.S. would fall into a deflationary trap as Japan did (but we didn't) and through the implementation of unprecedented policies aimed at stopping an ever-deepening crisis.

While many of these events are in the rearview mirror, we still face challenging policy decisions. At this 10-year juncture, it seems appropriate to pause and reflect on the lessons learned. As observed by the late philosopher George Santayana, “Those who cannot remember the past are condemned to repeat it.” So, now is a good time to study and learn from prior economic challenges faced in American history, including events like the Great Depression in the 1930s, the Great Inflation period in the 1970s and the Great Recession of this century.

A Look Ahead

At the same time, as any monetary policymaker and participant on the Federal Open Market Committee (FOMC) would be, I’m focused on where we’re going in the years ahead, where the economic recovery is rooting, where the debate on monetary policy will lead us and what the right policy decisions will be in a new era.

If the last decade was focused on unconventional monetary policy, the focus today is on “getting back to normal”—that is, increasing the Fed’s policy rate in line with better economic conditions and reducing the size of the Fed’s balance sheet, which had grown under the quantitative easing (QE) programs. Given the uncertainty about what “normal” is, it is not surprising that each of us on the FOMC brings his or her own views to the table on what the appropriate policy rate path might be or how normalization should continue to unfold. Sometimes we differ, but that diversity of thought and discourse ultimately yields the best outcome.

Some may think this era will not be as interesting as the previous 10 years, but I’m fascinated by what’s to come. We may not know with certainty what the future will hold, but being at the forefront of the ongoing, rigorous debate of optimal monetary policy is critical. We shouldn’t shy away from discussing new approaches to control inflation, debunking old myths about how the economy works or discarding out-of-date macroeconomic theories in favor of new narratives with better explanatory power of the regimes in which we find ourselves.

It’s an exciting time to be studying this dynamic global economy of the 21st century, the factors

affecting it and what lies ahead. I’m privileged to serve with my colleagues on the FOMC and help provide the best possible monetary policy to assist the performance of the U.S. macroeconomy. It’s also an exciting time to be part of the U.S. central bank, which includes the Board of Governors in Washington, D.C., and 12 Reserve banks spread geographically throughout the country.

Moreover, as president and CEO of the St. Louis Fed, I have the honor of being one of the voices of Main Street, ensuring economic concerns at the local and regional levels are represented at the FOMC table in Washington.

I’m looking forward to serving in the years ahead. It’s going to be a fascinating journey.



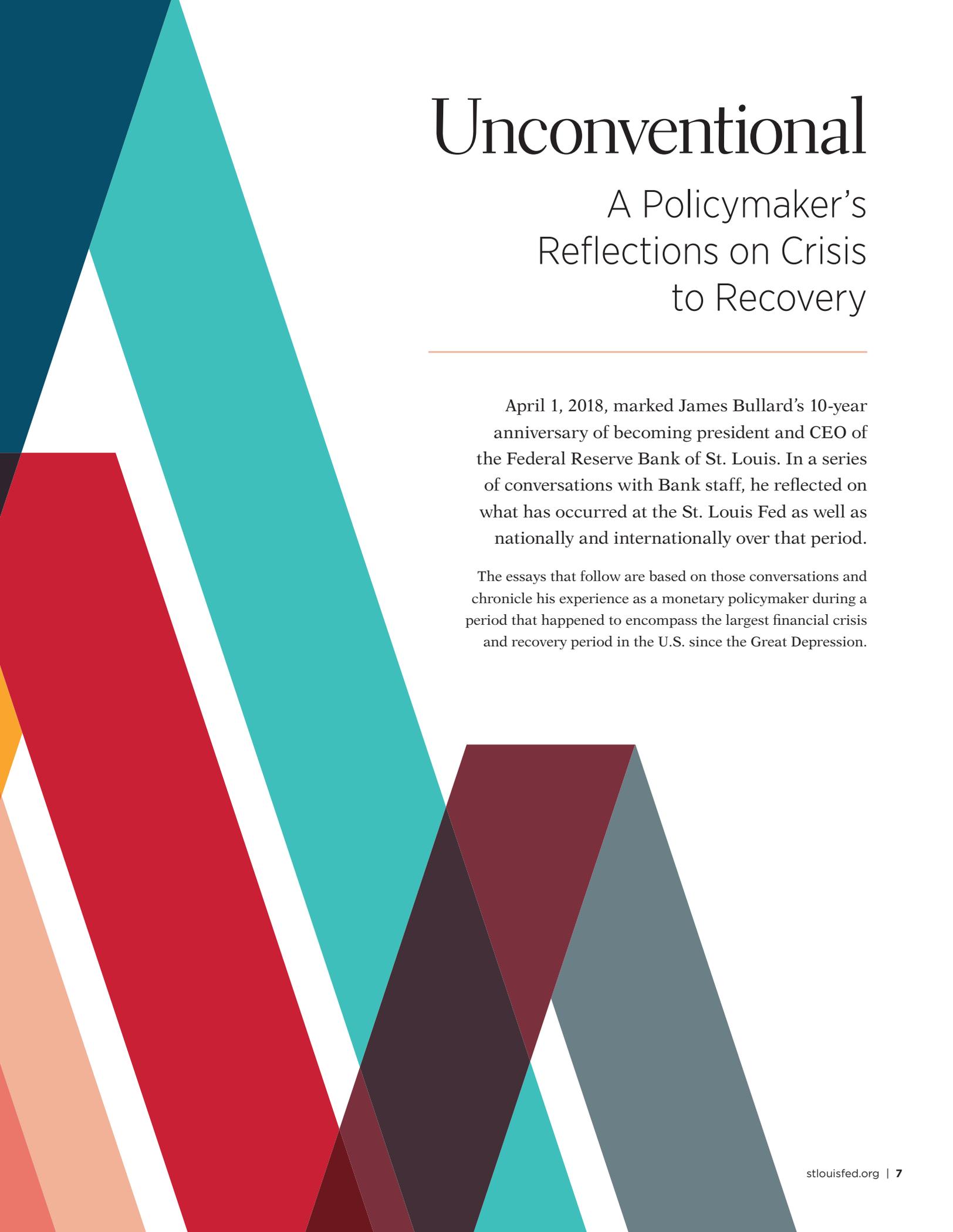
James Bullard

President and CEO
Federal Reserve Bank of St. Louis



On April 1, 2018, James Bullard marked his 10th anniversary as president and CEO of the St. Louis Fed.





Unconventional

A Policymaker's Reflections on Crisis to Recovery

April 1, 2018, marked James Bullard's 10-year anniversary of becoming president and CEO of the Federal Reserve Bank of St. Louis. In a series of conversations with Bank staff, he reflected on what has occurred at the St. Louis Fed as well as nationally and internationally over that period.

The essays that follow are based on those conversations and chronicle his experience as a monetary policymaker during a period that happened to encompass the largest financial crisis and recovery period in the U.S. since the Great Depression.

“The most important element of this whole era has been encountering the zero lower bound and then trying to decide what to do, if anything, given that you can no longer lower interest rates in response to poor economic circumstances. ... That has been the challenge of our times.”

— James Bullard, President and CEO

FOREWORD

A Policymaker’s Reflections

ACCOMPANYING VIDEOS



New Policymaker



State of Affairs in 2008



Hitting the Zero Lower Bound

Watch online at stlouisfed.org/annual-report/2017.

In the spring of 2008, James Bullard was finishing the interview process to become the 12th president of the Federal Reserve Bank of St. Louis upon the retirement of William Poole.

At that time, Bullard was the Bank’s deputy director of research for monetary analysis. He had been with the Bank, known for its monetarist academic research and maverick reputation within the Federal Reserve System, since 1990.

“I think one thing to keep in mind is that the financial crisis had already started and was already ongoing at that time, and I think some of the revisionist history forgets this,” he recalled. “But for the Fed, it really started in August 2007, because that’s when the Libor-OIS spread blew out, which was a signal that banks didn’t trust each other anymore.”

In response to the financial crisis, the Fed established the Term Auction Facility (TAF) program in December 2007 to provide short-term liquidity to depository institutions. In addition, the FOMC lowered the policy rate several times over the first few months of the crisis.

But then came the implosion and rescue of the Bear Stearns investment firm in March 2008, only two weeks before Bullard officially took over the reins from Poole on April 1.

The Intensifying Financial Crisis

The Fed’s exigent step of providing term financing to facilitate JPMorgan Chase’s acquisition of Bear Stearns marked the symbolic start of the worst financial crisis to occur in the U.S. since the Great Depression. It also marked the beginning of the FOMC’s unprecedented and uncharted monetary policymaking that was deployed to keep the U.S. financial system and economy intact.

“The timing of my coming into this role was just shortly after Bear Stearns,” Bullard said. “And what it really meant was that most of what I knew about ordinary central banking was going out the window just as I moved on to the FOMC.”

It also set the stage for a different kind of welcome call from Fed Chairman Ben Bernanke on the day that Bullard officially became president.

“When you’re named president, it’s all very secret,” Bullard recalled. “On the day you take office, the chair calls you at 10:30 in the morning. I knew Ben Bernanke from my research days and had talked with him many times. I thought it would be kind of a pep talk. But, no, it was all the details of the Bear Stearns deal and the mezzanine tranches, and how the Fed was going to get paid back, and all this kind of thing.

“It showed the intensity of the crisis even at that moment,” he added. “That was the context of my taking the job.”

The Notorious Summer of 2008

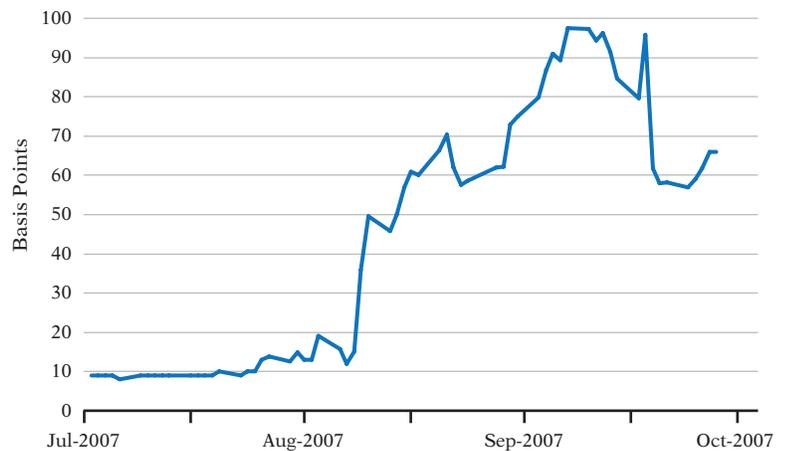
The intensity only ratcheted up from there, as the summer of 2008 turned into fall, and more signs of systemic threats to global financial stability appeared.

A retrospective speech given about five years after the crisis reflects Bullard’s thinking during that time: “The gist was, as of August 2008, it was still possible to argue that we would muddle through. And I felt all during this period that we would muddle through, as a staff person, and even after I was named president, and I told people I thought we would muddle through.”¹ He added, “It sounds crazy looking at it today because it turned out to be such a disaster, but there actually is a pretty good argument to be made that during the summer of 2008, you could still view the world that way.”

He noted that the financial crisis had been ongoing for a year at that point, and real gross domestic product (GDP) data at the time suggested that the U.S. was not in recession. He also noted that virtually all economic forecasts of the day, including those of Fed staff, pointed to continued modest economic growth for the rest of 2008—not to a full-blown crisis that would cripple economic growth, lead to interest rates at the zero lower bound and cause what is now known as the Great Recession. The tremors that had

SNAPSHOT IN TIME: From Bullard’s Presentation on Nov. 21, 2013

3-Month Libor-OIS Spread

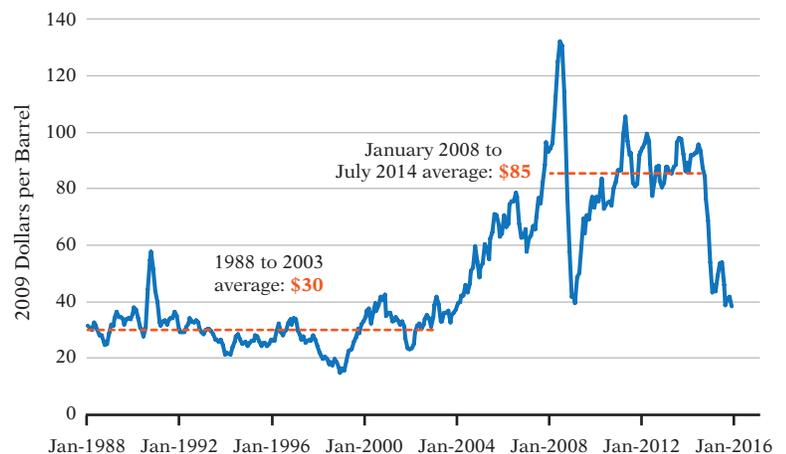


The Libor-OIS spread began rising substantially in August 2007, which signaled the beginning of the financial crisis.

SOURCES: Reuters, British Bankers’ Association and Bullard’s calculations.

SNAPSHOT IN TIME: From Bullard’s Presentation on Jan. 14, 2016

Real Oil Price (West Texas Intermediate)



The real (inflation-adjusted) price of oil nearly doubled between the summers of 2007 and 2008. This oil price shock contributed to slower U.S. economic growth in the second half of 2008.

SOURCES: U.S. Energy Information Administration, The Wall Street Journal, Bureau of Labor Statistics and Bullard’s calculations.

arisen in the booming housing market were expected to dissipate, as the depths of the losses to come from the subprime mortgage market crisis had not yet bubbled to the surface. Furthermore, the positive effects from lower interest rates were expected to take hold during the fall of 2008.

“A popular argument at the time was that, ‘We’ve already done a lot, and now that’ll get us through the rest of the way, and we’ll avoid recession,’” he said.

By that time, however, another concern was brewing: The price of oil had doubled since the summer of 2007. Higher oil prices contributed to a decline in vehicle sales and a drop in business confidence, among other economic effects.

“So, you had this oil price shock. The economy usually doesn’t react well to that kind of a shock, so maybe it’s not surprising that the economy actually turned out to be deteriorating in the second half of 2008,” he noted. “The slower economic growth made the crisis much worse than it otherwise would have been.”

The Collapse of Lehman and AIG

In business since 1850, Lehman Brothers was a major global financial services firm and the fourth-largest investment bank in the U.S. It was one of the first Wall Street firms to expand into the mortgage origination business. However, by 2008, it had suffered tremendous losses from holding large positions in subprime and other lower-rated mortgage tranches. It went bankrupt on Sept. 15, 2008.

AIG, or the American International Group, was a global insurance giant and a major seller of credit debt swaps. It had close to \$1 trillion in assets before it crashed and almost failed a few days after Lehman. On Sept. 16, 2008, the Fed, with the support

of the U.S. Treasury, authorized the New York Fed to lend up to \$85 billion to AIG through a revolving credit facility.

The collapse of Lehman Brothers and the bailout of AIG continued to send U.S. and international financial markets into a tailspin, which was then compounded by wave after wave of other economic shocks—the U.S. housing market crash and ongoing foreclosure crisis; the placement of Fannie Mae and Freddie Mac into government conservatorship; and the failures of IndyMac and Washington Mutual, the first of many large- and small-bank failures to come.

The Zero Lower Bound

A perfect storm had been set for an extraordinary time of unconventional monetary policymaking to prevent a worldwide economic crash, and Bullard’s background at the St. Louis Fed would help him not only to define and deliberate, but also to challenge or champion, the novel moves the FOMC would make during the next 10 years. He would also call for a new way of thinking as interest rates hit the zero lower bound and as inflation remained below target despite the recovery of the economy after the crisis.

“The most important element of this whole era has been encountering the zero lower bound and then trying to decide what to do, if anything, given that you can no longer lower interest rates in response to poor economic circumstances,” he said. “It was previously considered a very remote or unlikely scenario, and so that has been the challenge of our times.” ■

ENDNOTE

- 1 For more details, see Bullard, James. The Notorious Summer of 2008, a presentation delivered in Rogers, Ark., Nov. 21, 2013.



Top left: Then-Federal Reserve Board Governor Jeremy Stein presents at the St. Louis Fed's Center for Household Financial Stability's Research Symposium in 2013 and discusses how monetary policy could be employed to address credit market overheating when it threatens financial market stability.

Top right: St. Louis Fed President James Bullard (left), then-Fed Board Governors Elizabeth Duke (second to left) and Jay Powell (right), as well as then-Fed Vice Chair Janet Yellen take questions from St. Louis Fed employees at an open forum in the Bank's Gateway Auditorium in 2013.

Middle: Current and former Fed Reserve bank presidents with then-Fed Chairman Ben Bernanke, former Fed Chairmen Paul Volcker and Alan Greenspan, and then-Fed Vice Chair (later Chair) Janet Yellen, at a 2013 event in Washington, D.C., commemorating the centennial of the Federal Reserve Act.

Bottom: Current and former St. Louis Fed presidents. From left to right: Theodore Roberts, James Bullard, William Poole and Thomas Melzer.

“When the Fed lowered its key policy rate essentially to zero, many people thought it was out of policy options and that fiscal authorities would have to step in to provide short-term stabilization policy. Jim Bullard argued in his 2012 ‘Death of a Theory’ paper that central banks can still be effective by using unconventional tools and can usually act faster than fiscal authorities can.”

— David Wheelock, Group Vice President and Deputy Director of Research

1.

The Limits of Fiscal Policy

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.

“

Stabilization policy means reacting to data and changing the direction of policy in a timely manner in response to changing economic circumstances. Before the financial crisis, the conventional wisdom suggested that fiscal policy was not very effective as a macroeconomic stabilization tool. Although calls for fiscal approaches to stabilization policy gained popularity during the crisis, the precrisis lesson has been borne out in the past 10 years. Namely, it is difficult in Western democracies to ask the political process to bear the burden of providing day-to-day stabilization policy. This type of policy intervention should remain in the realm of monetary policy.

Why was this the conventional wisdom? In the U.S., the FOMC can meet every six or eight weeks, or more often if necessary. Decisions and adjustments to policy can be made fairly quickly in response to changing economic conditions. One could argue about whether the FOMC made the right decisions at various junctures, but it is at least in position to take those kinds of quick actions. In contrast, going through the political process to change the tax code or government spending plans can be very complicated. It is doubtful that such a process could be completed in a timely manner and in a way that reacts to current developments in financial markets and the economy as a whole.

Thus, for the two decades before the crisis, the idea was that fiscal policy should be set over longer time horizons (e.g., five or 10 years) and that monetary policy should be used to make the day-to-day adjustments through interest rate policies.

In December 2008, the FOMC reduced the federal funds rate to a target range of 0 to 0.25 percent—the so-called zero lower bound. Many people said this meant that the FOMC couldn't do anything else to provide short-term stabilization for the macroeconomy and that, consequently, fiscal policy would have to fill that role.

However, the FOMC was not out of ammunition after hitting the zero lower bound. The FOMC used unconventional policy—QE and, to some extent, forward guidance—to provide stabilization policy. Other central banks also turned to unconventional policy, including QE in the U.K., Japan and the eurozone.

To the extent those ways of carrying out monetary policy are effective, this means that the monetary authority can still run stabilization policy and that going through the fiscal channel is unnecessary. My 2012 paper “Death of a Theory” argued that stabilization policy should be viewed the same way after the crisis—i.e., that monetary policy should still be used to respond to short-term fluctuations in the economy.

The older, precrisis idea about how to divide the responsibility for stabilization between monetary policy and fiscal policy remains valid today. Given the difficulty of going through the political process, the central bank should continue to have primary responsibility for stabilization policy even when the policy rate is at or near the zero lower bound. On the other hand, fiscal authorities should focus on tax and spending programs that will achieve medium- or long-term goals. ■

ADDITIONAL RESOURCES

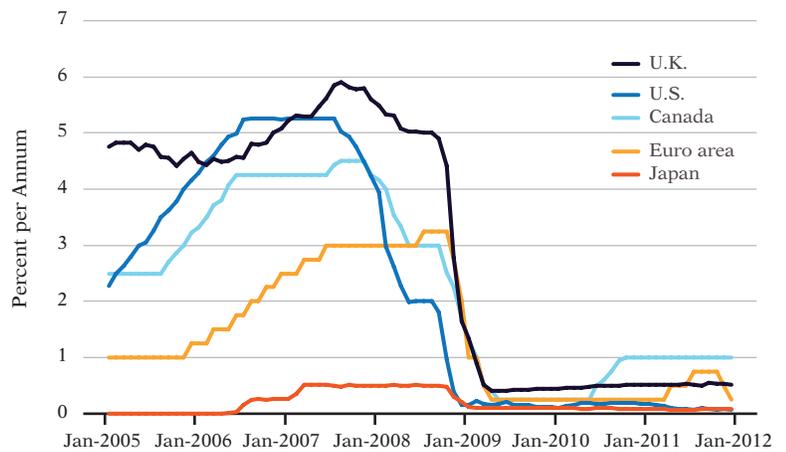
“Three Funerals and a Wedding” (Bullard’s speech delivered in Evansville, Ind., Nov. 20, 2008)

“Death of a Theory” (Bullard’s article in the Federal Reserve Bank of St. Louis *Review*, March/April 2012)

“The Global Battle Over Central Bank Independence” (Bullard’s presentation delivered in San Diego, Jan. 4, 2013)

SNAPSHOT IN TIME: From Bullard’s Presentation on Jan. 13, 2012

Policy Rates in the G-7 Countries



The G-7 countries lowered their policy rates to near zero in late 2008 and early 2009. Some central banks, including the Fed, used unconventional tools to provide additional stabilization policy.

SOURCE: Haver Analytics.



The FOMC holds scheduled meetings eight times per year in Washington, D.C., to set monetary policy. Participants include members of the Board of Governors and presidents of the 12 regional Reserve banks.

Connecting Frontier Research with Policy

James Bullard joined the Research division in 1990 as an economist. But his academic research didn't stop when he became president and CEO 10 years ago and, thus, became a participant on the FOMC, the Federal Reserve's monetary policymaking body.

One of Bullard's goals since taking on this role has been to strengthen the connection between academic research and monetary policy. He noted how the views of central bankers have been increasingly sought after for leadership regarding the overall economy, not just for

monetary policymaking.

In addition to encouraging innovative research among St. Louis Fed economists for this reason, Bullard has continued his own academic research as president.

"To be on the FOMC, you have to more or less be cognizant of all the issues that might affect macroeconomic outcomes, both in the U.S. and worldwide," Bullard

said. "There's no better way to be in tune with those issues than to contribute yourself to ongoing research in various areas."

To be sure, academic research and monetary policy have not always been in sync. "I feel pretty strongly about this, because I think that the profession has long been bifurcated, where there is a certain group of people that did the research and then there's another group of people that did the policy, and the policy didn't look all that much like the research," Bullard said.¹

Instead of having the profession split into two parts, he emphasized the need to merge them.²

"To be on the FOMC, you have to more or less be cognizant of all the issues that might affect macroeconomic outcomes, both in the U.S. and worldwide. ... You want the very best ideas deployed, and that's going to mean wrestling with tough concepts and bringing those to the policy process."

— James Bullard, President and CEO

He added that the two sides should communicate more and should challenge each other.

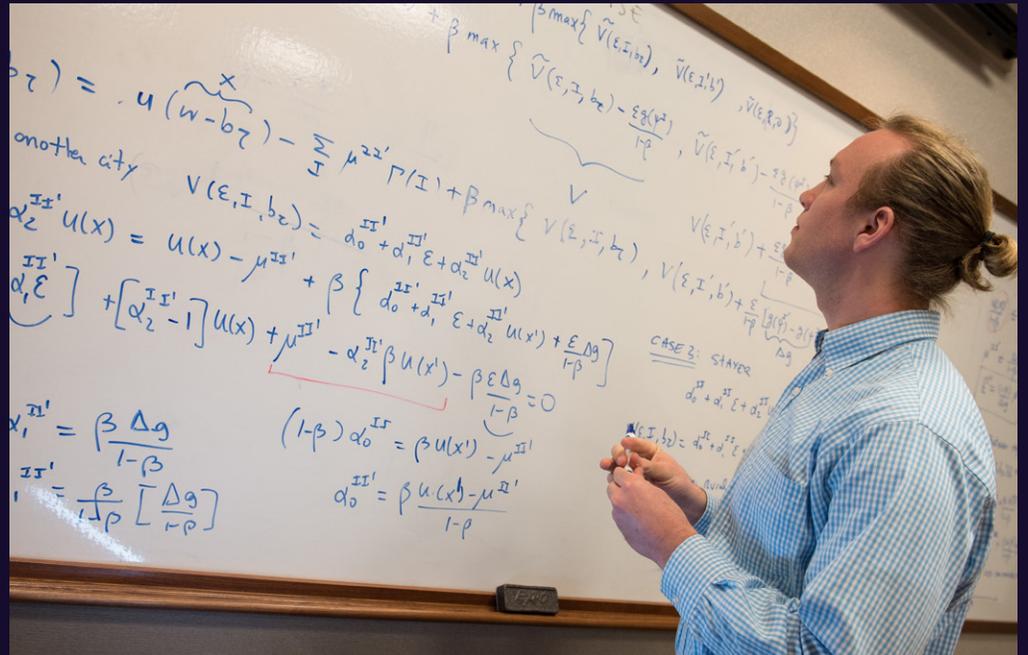
"The policy people can certainly challenge the academic types by saying that what you're doing isn't helping me make policy, but on the other hand, there are important ideas in the academic world that should come across to the policy world," he said. "I think there's been more of this in recent years on the FOMC, and I think we'll see more in the future."

He likened the process to putting a man on Jupiter. In this event, "you don't want to take seat-of-the-pants engineering. You would take the very best engineering that you could find, and then you would apply those ideas and you put the guy in the rocket ship and send him to Jupiter," he said. "I think the same is true here. You're trying to manage the U.S. economy and, to some extent, the global economy. You want the very best ideas deployed, and that's going to mean wrestling with tough concepts and bringing those to the policy process."

In his time as president, Bullard has focused on three main areas of research that were particularly interactive with the current policy environment: fiscal policy in the post-crisis world, regime-based macroeconomics and alternatives to inflation targeting. Each of these is covered in more detail in other sections of this annual report. ■

ENDNOTES

- 1 See Bullard, James. Research in Macroeconomics after the Crisis, a presentation delivered in Washington, D.C., March 17, 2011.
- 2 See Bullard, James. President's Message: The Importance of Connecting the Research World with the Policy World. The Federal Reserve Bank of St. Louis *The Regional Economist*, October 2013.



Top left: The St. Louis Fed's Women in Economics Symposium brings together female leaders in the field of economics to discuss how to attract more diversity to the profession. The event, in February 2018, included (from left to right): Gail Hafer, economics professor at St. Louis Community College-Meramec; Ellen Zentner, managing director and chief U.S. economist at Morgan Stanley; Claudia Sahm, section chief for consumer/community development research at the Fed Board; and Mary Daly, executive vice president and director of research at the San Francisco Fed.

Top middle: Kevin Kliesen, business economist and research officer at the St. Louis Fed, regularly engages with business and industry leaders to present national and local economic conditions and outlooks.

Top right: Mohamed El-Erian, then-CEO and co-chief investment officer of PIMCO, presents at the St. Louis Fed's annual Homer Jones Memorial Lecture in 2012 and advocates for public and private sector agencies to work in conjunction with global central bank policies to limit the risks of further disruptions brought on by the financial crisis.

Middle: Then-research analysts, Lin Shao and Peter McCrory, help advance the scholarly work of St. Louis Fed economists.

Bottom: David Andolfatto, vice president and economist at the St. Louis Fed, interviews Ayse Imrohoroglu, professor of finance and business economics at USC, about her work on Chinese saving rates at the Bank's research conference in 2015.

“In 2010, measures of core inflation were low and declining in the U.S. Jim Bullard became greatly concerned about this trend and the risks of ending up in a deflationary trap as Japan did. With the FOMC’s policy rate already near zero, he argued for additional quantitative easing, or QE, to avoid deflation. To help make his case, he released his influential ‘Seven Faces of “The Peril”’ paper in July of that year. The FOMC began QE2 in November 2010.”

— Cletus Coughlin, Senior Vice President and Chief of Staff to the President

2.

Fear of a Deflationary Trap

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



Avoiding Deflation

Watch online at stlouisfed.org/annual-report/2017.

The Great Recession officially ended in June 2009, and the economy began to recover slowly. Positive real GDP growth resumed, while payroll employment losses slowed down and eventually turned into gains. Inflation, however, was a different story.

By a variety of measures, inflation not only was low but was declining in 2010. Some measures of core inflation even dipped below 1 percent in 2010. In my view, some people at the FOMC meetings did not seem overly concerned about the immediate U.S. inflation situation. But, the disinflationary trend didn’t look good from my perspective. I highlighted it in a paper called “Seven Faces of ‘The Peril,’” which was initially released in late July 2010.

In the paper, I compared what had happened in Japan with what was happening in the United States. Japan, which is a big, industrial economy similar to the U.S., had been battling deflation for more than a decade at that point. Basically, Japan was stuck in a long-run outcome of low nominal interest rates and deflation.¹ The general attitude in the U.S. seemed to be that there was something special about Japan and that the Japanese-style outcome couldn’t happen here. However, I didn’t really think that was the case.

The paper included a theoretical explanation for why we could possibly get stuck in the same situation as Japan—namely, that the FOMC’s promise to keep the policy rate near zero for an “extended period” may be counterproductive and may encourage the undesired long-run outcome. The conclusion was that, among the options available to the FOMC, the

best course of action for turning inflation around was to implement QE. Thus, I was a big advocate of beginning a QE2 program.

In my opinion, the release of that paper and my CNBC interview the next day ignited a lot of the fire around QE2. For example, the talk in financial markets of a possible QE2 program accelerated. In addition, Chairman Bernanke gave a speech in Jackson Hole, Wyo., in August that was interpreted as being more sympathetic to the possibility of QE2 than his previous remarks. According to financial markets, the probability that the FOMC would go ahead with a new QE program essentially went from zero percent in July 2010 to 100 percent in early November, which is when the FOMC decided to implement the program. (QE2 consisted of purchasing \$600 billion of longer-term Treasury securities from November 2010 through June 2011.)

Was QE2 successful? Because of the forward-looking nature of financial markets, the financial market effects mostly occurred between late July and early November and were in the expected direction. Equity prices rose, the dollar depreciated dramatically, longer-term interest rates fell, and inflation expectations rose. Actual inflation also turned around and increased during 2011. By January 2012, headline inflation was above the Fed's 2 percent target, and core inflation was right at target. Based on these results, I thought QE2 was very successful at that point.

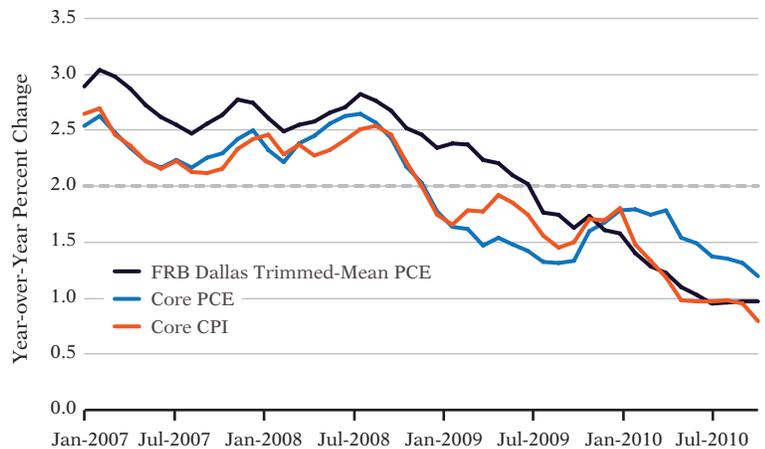
Although the financial market effects were as expected, there was also an expectation that real GDP growth would pick up. People thought that the financial market effects would, in turn, lead to improvement in the real economy (such as increased household consumption, export activity and investment activity). However, that never happened. Slower real GDP growth has persisted over the past several years, with the U.S. averaging about 2 percent growth since the financial crisis.² ■

ENDNOTES

- 1 See Benhabib, Jess; Schmitt-Grohé, Stephanie; and Uribe, Martín. The Perils of Taylor Rules. *Journal of Economic Theory*, January 2001, Vol. 96, Issues 1-2, pp. 40-69.
- 2 Growth in 2017, however, exceeded 2 percent and suggests the possibility of a more rapid growth regime.

SNAPSHOT IN TIME: From Bullard's Presentation on Nov. 8, 2010

Personal Consumption Expenditures and Consumer Price Index Inflation Measures



In early 2010, inflation was close to the Fed's then-implicit inflation target of 2 percent. But a disinflation trend developed that year, sending some measures of core inflation below 1 percent. Note that this figure combines series from two different figures in Bullard's presentation on Nov. 8, 2010.

SOURCES: Bureau of Economic Analysis, Federal Reserve Bank of Dallas and Bureau of Labor Statistics.

ADDITIONAL RESOURCES

- "Seven Faces of 'The Peril'" (Bullard's article in the Federal Reserve Bank of St. Louis *Review*, September/October 2010; preprint version from July 2010)
- "A Two-Headed Dragon for Monetary Policy" (Bullard's presentation delivered in San Francisco, Jan. 3, 2009)
- "QE2 in Five Easy Pieces" (Bullard's presentation delivered in New York, Nov. 8, 2010)



Axel Weber, then-president of the Deutsche Bundesbank (the central bank of the Federal Republic of Germany) and member of the governing council of the European Central Bank, presents at the St. Louis Fed's annual Homer Jones Memorial Lecture in 2011 and discusses the challenges for monetary policy in the European Monetary Union.

“Jim Bullard was an early advocate of state-contingent, or data-driven, quantitative easing in 2009, when date-driven QE policy was the approach of choice. Eventually, by 2012, the entire Committee came around to the view that QE should be data-driven, not date-driven. QE3 was designed on the concept of state-contingent, data-driven policy.”

— Christopher Waller, Executive Vice President and Director of Research

3.

QE3: Data-Driven, Not Date-Driven

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



State Contingency

Watch online at stlouisfed.org/annual-report/2017.

In 2012, about three years post-recession, the U.S. economy wasn't growing as fast as people would have liked, and the pace of improvement in the labor market slowed. Furthermore, inflation wasn't as high as people expected it to be. As mentioned earlier, headline inflation was above the Fed's 2 percent target, and core inflation was right around the target in early 2012. During the first half of that year, however, inflation began declining and went below target (although not as far below as in 2010).

Consequently, many policymakers felt like they wanted to do more to help stimulate the economy. The FOMC voted in September 2012 to begin a third quantitative easing program, known as QE3, and stated that the program would continue until the labor market outlook improved substantially.

I was not very supportive of QE3 at that time because, in my view, the data didn't support such a major decision. For instance, while job growth wasn't as robust as people would have liked, I thought that the slower job growth perhaps had become the norm, since we were several years past the financial crisis.¹ Furthermore, the U.S. economy wasn't in recession, nor did a recession look imminent. Those are among the

reasons that I opposed beginning a new QE program at that particular time.

However, I did support QE3's open-ended aspect, which is a form of state-contingent or data-dependent policymaking and which stood in contrast with the fixed end dates associated with QE1 and QE2. As early as 2009, I had advocated for balance sheet policy to be state-contingent and adjusted depending on economic conditions, much like interest rate policy had been prior to the financial crisis. For instance, I argued that the FOMC should say a QE program would continue until the desired results for the economy were achieved, instead of saying it would end on a particular date that did not depend on goals being met.

This was not a very popular idea at first. But the FOMC eventually came around with QE3. In addition, the recent QE programs of the Bank of Japan and the European Central Bank (ECB) took the open-ended, state-contingent form.

At the December 2013 meeting, the FOMC decided to begin reducing the pace of asset purchases the following month. In October 2014, the FOMC determined that substantial improvement in the labor market outlook had occurred and ended the QE3 program. ■

ENDNOTE

- 1 I also thought that some other labor-market trends, such as the decline in the labor force participation rate, were largely due to demographic changes rather than cyclical factors. For more, see my speech from Feb. 19, 2014, *The Rise and Fall of Labor Force Participation in the U.S.*

ADDITIONAL RESOURCES

"The Fed's New Regime and the 2013 Outlook" (Bullard's presentation delivered in Madison, Wis., Jan. 10, 2013)

"The Fed's Latest Balance-Sheet Policy: What Constitutes Substantial Labor-Market Improvement?" (President's Message: *The Regional Economist*, January 2013)

"The Tapering Debate: Data and Tools" (Bullard's presentation delivered in St. Louis, Nov. 1, 2013)

DEEPER DIVE

State-Contingent Policy

One of the consistent themes underlying James Bullard's thinking has been the importance of state-contingent, or data-dependent, monetary policy, even when the FOMC uses unconventional policy such as QE and forward guidance.¹

"State-contingent policy means that you should react to economic events and not do things according to the calendar," Bullard said. "I do think it's a problem in monetary policy-making that there's somehow an overwhelming urge to say that you're going to do certain things at certain times, regardless of what's going on in the economy. But everything we know about

"State-contingent policy means that you should react to economic events and not do things according to the calendar ... I've tried to be an advocate for this at the FOMC."

— James Bullard, President and CEO

economics and economic policy says that, 'No, the policy should be calibrated to what's actually happening in the economy,' which means reacting to what's actually going on.

"And so, I've tried to be an advocate for this at the FOMC. I think that we've had only mixed success, and sometimes I think we've slipped back more into calendar-style policy instead of state-contingent policy." ■

ENDNOTE

- 1 For examples, see Bullard, James. *Three Lessons for Monetary Policy from the Panic of 2008*, a presentation delivered in Philadelphia, Dec. 4, 2009; and Bullard, James. *President's Message: What Does Data Dependence Mean?* *The Federal Reserve Bank of St. Louis The Regional Economist*, January 2016.

“In late 2008, as the financial crisis escalated, the FOMC reduced the federal funds target rate as low as it could—essentially to zero. To foster economic conditions that would help the Fed achieve its dual mandate of stable prices and maximum sustainable employment, it also turned to other accommodative tools, primarily QE. This led to a huge increase in the Fed’s balance sheet. When it came time to determine the strategy for returning policy settings to normal, Jim Bullard made the case for a ‘last-in, first-out’ approach—i.e., reducing the balance sheet first before raising the policy rate.”

— Cletus Coughlin, Senior Vice President and Chief of Staff to the President

4.

A Preferred Approach to Normalization

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



LIFO Approach to Normalization

Watch online at stlouisfed.org/annual-report/2017.

After the FOMC ended its QE3 program in the fall of 2014, the focus turned to when it would begin normalizing monetary policy. In December 2015, the FOMC voted to raise the policy rate from its near-zero level, which is commonly referred to as “liftoff,” as the first step in normalization; it has since raised the policy rate several more times. Some 21 months later, in September 2017, the FOMC announced that, beginning the following month, it would start the gradual process of reducing the Fed’s balance sheet, which had grown from about \$870 billion in August 2007 to about \$4.5 trillion as a result of quantitative easing.

The FOMC chose to raise the policy rate first before starting to shrink the balance sheet, but I favored the opposite sequence—a last-in, first-out (LIFO) policy. I thought there was a clear argument in favor of that approach.

The idea behind a LIFO approach to normalization is as follows. In easing monetary policy, the FOMC lowered the policy rate essentially to zero, the so-called zero lower bound. Because the policy rate couldn’t be reduced further, the FOMC turned to QE, which led to a substantial increase in the size of the Fed’s balance sheet. The asset purchases under the various QE programs included mostly longer-maturity Treasury securities and mortgage-backed securities, but also some federal agency debt. On the liability side of the Fed’s

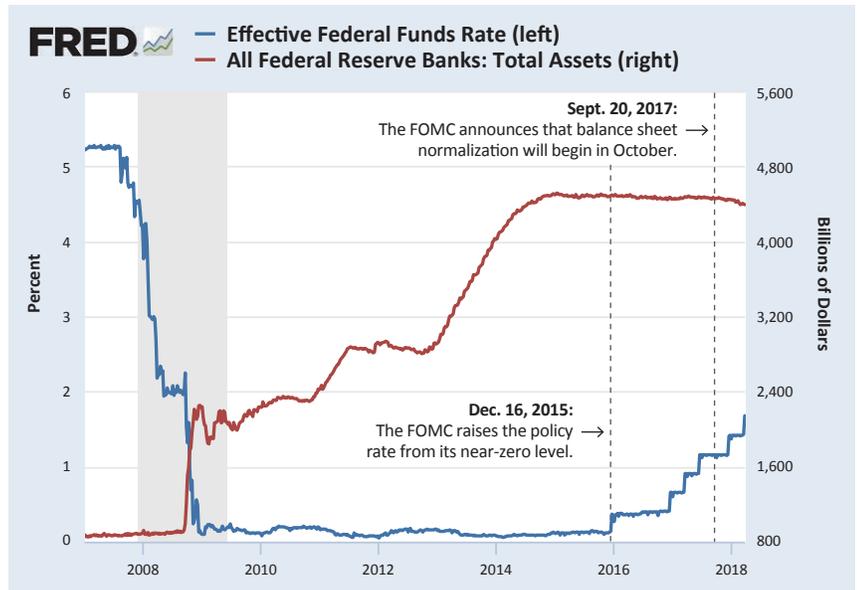
balance sheet, this meant an increase in reserves held by financial institutions. Once the economy had recovered sufficiently, the natural sequence of events, in my view, was to reduce the size of the balance sheet down to its normal size, and then to raise the policy rate back to its normal level.

In the sequence I have described, the amount of reserves in the system was initially low but then rose substantially because of the asset purchases. If the level of reserves were brought way back down again, then policymakers could run their operating procedure and could raise the policy rate the same way as in the past.¹ I think that approach makes a lot of sense.

However, the FOMC decided to start slowly raising the policy rate first. Policymakers were constrained by the zero lower bound when reducing the policy rate, but they were not constrained by the zero lower bound when raising it. In other words, once the policy rate was near zero, the FOMC had to use unconventional policies, such as QE, to provide further monetary accommodation when needed. But during normalization, the FOMC could adjust both the policy rate and the size of the balance sheet. The FOMC chose to use the policy rate as the primary way to adjust policy.

I still believe shrinking the balance sheet first would have been the right approach to normalization. Doing liftoff first has forced the FOMC to raise the policy rate in a world of superabundant reserves. Because reserves are not scarce like they were before the crisis, the Fed has had to adopt new operating procedures for raising interest rates.²

In addition, raising the policy rate while maintaining a large balance sheet has led to some flattening of the yield curve. This is one reason why I argued in late 2016 and early 2017 to get going on shrinking the size of the Fed's balance sheet. The FOMC's interest rate policy was putting upward pressure on short-term interest rates, while the balance sheet policy was putting downward pressure on longer-term interest rates. A more natural normalization process would allow all interest rates to increase together. Although the FOMC began the process of gradually reducing the size of the balance sheet in late 2017, it remains important to keep an eye on the yield curve as monetary policy normalization proceeds.³ ■



▲ The FOMC lowered the policy rate essentially to zero in December 2008 and implemented three QE programs over the next several years, which caused the Fed's balance sheet to increase substantially. During normalization, the FOMC raised the policy rate first before beginning to shrink the balance sheet.

The shaded area indicates a recession.

SOURCE: Board of Governors of the Federal Reserve System (data retrieved from FRED® on March 22, 2018).

ENDNOTES

- 1 For more details on the operating procedure, see Williamson, Stephen. What Is Monetary Policy Normalization? The Federal Reserve Bank of St. Louis Annual Report 2015.
- 2 To raise the policy rate, the Fed must also raise the interest rate on excess reserves (IOER) and the offering rate on overnight reverse repurchase agreements (ON-RRP). These two rates provide the upper and lower bounds of the target range for the policy rate.
- 3 Typically, an inverted yield curve helps predict recessions. For more, see my presentation from Dec. 1, 2017, Assessing the Risk of Yield Curve Inversion.

ADDITIONAL RESOURCES

- “U.S. Monetary Policy and the Path to Normalization” (Bullard's presentation delivered in London, March 30, 2011)
- “Federal Reserve issues FOMC statement on policy normalization principles and plans” (Board of Governors of the Federal Reserve System press release from Sept. 17, 2014)
- “A Case for Shrinking the Fed's Balance Sheet” (President's Message: *The Regional Economist*, Second Quarter 2017)

“The St. Louis Fed has a long tradition of challenging the status quo. In 2016, Jim Bullard and the St. Louis Fed’s Research division pivoted to a new approach for evaluating the U.S. macroeconomy, which also had implications for how it views optimal monetary policy. Rather than assuming the economy will converge to one long-run outcome—the conventional approach—the St. Louis Fed now assumes the economy can switch between different states, or regimes, and the regime will influence the outlook for the macroeconomy and monetary policy.”

— Christopher Waller, Executive Vice President and Director of Research

5.

A Regime-Based View of the Economy

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



The New Narrative

Watch online at stlouisfed.org/annual-report/2017.

Coming out of a recession, a typical forecast would suggest that the economy will grow faster for a while than it otherwise would, that job growth will be higher than normal for a while and that inflation might start to pick up and possibly go above the Fed’s 2 percent target. Then, these variables would settle back to their steady-state rates of growth. That is, they would return to their average historical values. This approach to forecasting assumes that the economy will ultimately converge to a single, long-run outcome. It was the common approach used by many FOMC participants, including me.

Given that viewpoint, and since the Fed’s dual mandate (of stable prices and maximum sustainable employment) was close to being achieved in 2014, I had been an early proponent of moving forward with the normalization process, which included the policy rate’s returning to its steady-state value.

But, by mid-2016, the Research team here at the Bank and I had become increasingly frustrated because our forecasts of the macroeconomy under this approach turned out to be wrong for four or five years in a row. Similarly, the “dot plots” in the FOMC’s quarterly

Summary of Economic Projections (SEP)—including the St. Louis Fed’s dots, or projections for the policy rate—repeatedly projected many more increases in the policy rate over the forecast horizon than actually occurred. The conventional approach wasn’t useful.

Therefore, at the St. Louis Fed, we changed our approach to near-term forecasts of the macroeconomy and monetary policy in June 2016. The new approach required us to think differently about the possible long-run outcomes of the macroeconomy. Instead of having only one such long-run outcome, as was the thinking behind our previous narrative, the macroeconomy could switch between regimes (or steady states) and, therefore, could have a set of possible long-run outcomes.

The basic idea behind the new narrative was that there are three fundamental factors that can determine the nature of the regimes: productivity growth (which could be high or low), the real interest rate on short-term government debt (which could be high or low) and the state of the business cycle (expansion or recession).

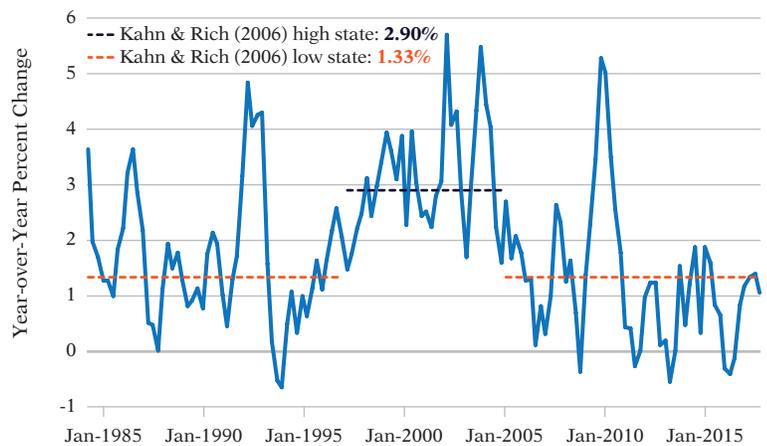
The current regime appears to be characterized by low growth, low interest rates and also low inflation, which could be a relatively long-term outcome for the U.S. economy. The regime idea suggests that a situation like this could persist for many years and that we should not expect the same patterns from the previous decades to return, at least not in the near term.

This idea is particularly apt for the current environment. Safe, short-term real interest rates in the U.S. are extremely low and have been trending downward overall since the 1980s. Furthermore, the low safe real interest rates are a global phenomenon. For more recent trends in real-interest-rate regimes, see the presentation I delivered in Washington, D.C., on this topic.¹

For purposes of monetary policy, which is regime-dependent, the planning horizon is two to three years.² Given that long-run trends affecting the economy are unlikely to turn around in two to three years, we assume in our new narrative that the current regime will continue over that horizon.

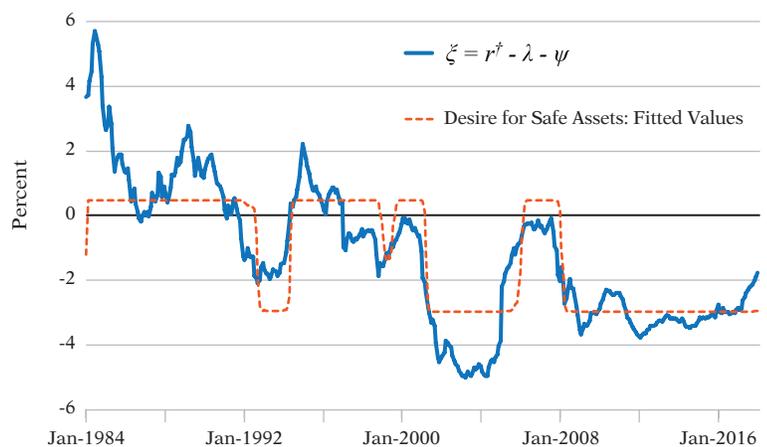
SNAPSHOT IN TIME: From Bullard’s Presentation on Feb. 26, 2018

Labor Productivity Growth



SNAPSHOT IN TIME: From Bullard’s Presentation on Feb. 26, 2018

Desire-for-Safe-Assets Regimes



As of February 2018, the U.S. appeared to be in a regime of low productivity growth and a high desire for safe assets. The latter is indicated by the relatively large negative value for ξ .

SOURCES: Kahn, James A.; and Rich, Robert W. Tracking Productivity in Real Time. Federal Reserve Bank of New York *Current Issues in Economics and Finance*, November 2006, Vol. 12, No. 8; Federal Reserve Bank of New York; Bureau of Labor Statistics; Board of Governors of the Federal Reserve System; Federal Reserve Bank of Dallas; and Bullard’s calculations.

The St. Louis Fed's projections for monetary policy are, therefore, calibrated for the low regime. Hence, our projected policy rate path is relatively flat over the forecast horizon, which stands in contrast with the FOMC's median path. If a regime switch were to occur, our forecasts would then be calibrated for that new regime. Upside risks to our forecasts (e.g., higher inflation, an increase in the real rate or higher productivity growth) would lead us to steepen our path for the policy rate. ■

ENDNOTES

- 1 See my presentation from Feb. 26, 2018, R-Star Wars: The Phantom Menace.
- 2 Under this regime-based approach, the St. Louis Fed stopped providing long-run projections in the FOMC's SEP because there is not a single, long-run steady state for the economy.

ADDITIONAL RESOURCES

"The St. Louis Fed's New Characterization of the Outlook for the U.S. Economy" (Federal Reserve Bank of St. Louis announcement on June 17, 2016)

"The St. Louis Fed's New Approach to Near-Term Projections" (Bullard's post on the Federal Reserve Bank of St. Louis On the Economy blog, Aug. 25, 2016)

"An Illustrative Calculation of r^* " (Bullard's presentation delivered on Amelia Island, Fla., May 8, 2017)



David Wheelock, group vice president and deputy director of research at the St. Louis Fed, addresses employees as part of the Bank's centennial celebration in 2014 and discusses the St. Louis Fed's influence on policy during the Great Inflation period of the 1970s.

DEEPER DIVE

The Maverick Monetarist Tradition

For many decades, the St. Louis Fed has maintained a reputation in the Federal Reserve System for challenging the status quo, enhancing the rigor of the monetary policy debate, and pushing the frontier of research in academic and policy circles.

The Bank came to be known as the "maverick" Federal Reserve bank during the Great Inflation period of the 1970s, when there was double-digit inflation and double-digit unemployment.¹ "The famous misery index was off the charts," James Bullard said. The misery index, created in the 1970s by economist Arthur Okun, is equal to the sum of the inflation and unemployment rates.²

For many decades, the St. Louis Fed has maintained a reputation in the Federal Reserve System for challenging the status quo ... [and] came to be known as the "maverick" Federal Reserve bank during the Great Inflation period of the 1970s.

While this was a time of intense pressure on the Reserve banks to support System policy, the St. Louis Fed instead argued that Fed policies and excessive growth of the money supply were to blame for higher inflation.

"The St. Louis Fed stressed that the Fed really had to get this process under control," Bullard said, adding, "The monetarist experiment in the [Fed Chairman Paul] Volcker era was the ultimate outcome of that line of research, leading to much lower inflation, despite taking much of the 1980s to get it under control."

St. Louis Fed presidents were aided by analysis and data provided by research divisions led by Homer Jones, Leonall Andersen, Jerry Jordan and, later, Ted Balbach, who enhanced and expanded upon Jones' initiatives.³

“We were the first Bank in the Federal Reserve System to do academic-style research and try to use that research to influence thinking on monetary policy,” Bullard noted.

Under Jones, the St. Louis Fed became the first Reserve bank to go public with its own viewpoints and began publishing data and analysis for the public. When the Bank began to use mainframe computers around 1967, McDonnell Douglas provided computer access for the Research division. In this era, computer programs were created line by line on punch cards, which were transported by taxi from the Bank to McDonnell Douglas for processing.⁴ The division developed its international reputation for economic research and monetarist policy views that remains to this day, and it continues to be well-known for its publication of data and economic analysis, including its popular, publicly available database FRED®.

“The ideas about how to run monetary policy that came out of here and influenced U.S. policy also helped influence monetary policy around the world. This led to lower inflation around the world and eventually to the inflation targeting era starting in the 1990s,” Bullard said.

He added, “There are many different challenges today in monetary policy than there have been historically, but the basic story remains that research is not just scribbling on a piece of paper. The ideas can be profoundly powerful and have huge influence on real people’s lives.” ■

ENDNOTES

- 1 For more discussion, see Wheelock, David. Lessons from a Maverick: How the St. Louis Fed Helped Shape the Nation’s Monetary Policy. The Federal Reserve Bank of St. Louis Annual Report 2013.
- 2 The misery index can be constructed using FRED® economic data, retrieved from <https://fred.stlouisfed.org>.
- 3 See Bordo, Michael D.; and Schwartz, Anna J. Monetary Economic Research at the St. Louis Fed during Ted Balbach’s Tenure as Research Director. The Federal Reserve Bank of St. Louis *Review*, September/October 2008, Vol. 90, No. 5, pp. 499-504.
- 4 See the St. Louis Fed Centennial Timeline, retrieved from <https://fraser.stlouisfed.org/timeline/st-louis-fed-centennial>.



When then-St. Louis Fed President Darryl Francis (left) and then-Research Director Homer Jones (right) couldn’t convince the Fed’s leadership in Washington that monetary policy was causing the waves of inflation that started in the late 1960s, the two men took their case to the public.



Staff regularly meet with President James Bullard in The Ted Balbach Conference Room at the St. Louis Fed to discuss issues related to monetary policy. The conference room—named after the former research director whose leadership helped define the Bank’s research reputation—also serves as the location for seminars by economists from the Bank and from around the world.

“Not that long ago, the workings and decisions of the FOMC were kept behind closed doors. It wasn’t until the 1990s that it began to officially announce its actions and any changes in the policy rate. In the 2000s, as the FOMC worked to contain the financial crisis through the use of extraordinary monetary policy and lending programs, it became imperative to better communicate its thinking to financial markets and the private sector. The Fed has taken unprecedented steps to improve communications ever since so there are fewer misunderstandings or surprises about Fed policy, less market volatility and better macroeconomic outcomes.”

— Cletus Coughlin, Senior Vice President and Chief of Staff to the President

6.

A Push for More Transparency

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



Transparency

Watch online at stlouisfed.org/annual-report/2017.

When I first started at the St. Louis Fed in 1990, the FOMC did not even make an announcement or release a statement about decisions that had been made. It left it to financial markets to divine decisions by looking at trading patterns in short-term, overnight interest rate markets.

In 1994, with the debut of the FOMC statement, an era of evolving transparency began. Over the next 10 years, the statement became more informative, and minutes of each FOMC meeting more accessible.

It was a good start, but still too opaque with the onslaught of the financial crisis and the 10 years of unconventional monetary policy that followed. Between 2007 and 2012—with unprecedented decisions that brought the zero lower bound, quantitative easing, Operation Twist (extending the average maturity of Treasury securities), liftoff and unwinding the balance sheet—FOMC communications became central to effective monetary policymaking. Markets and the public needed to understand the central bank in real time. It was a major and important journey.

In April 2011, Chairman Ben Bernanke held the first press conference after an FOMC meeting. Press conferences are timed with the FOMC’s SEP, which is released four times a year and has included the dot plot since 2012. In addition, in 2012, the FOMC named an explicit, numerical inflation target.

The large size of the FOMC—19 members (seven Board governors and 12 Reserve bank presidents) when at full strength—helps with communicating more or less continuously. I think that’s very helpful in keeping the markets in sync with the Fed. As my predecessor, Bill Poole, would have said, you don’t want private sector expectations to get misaligned with FOMC intentions, and you want to keep those together as much as possible.

While these were monumental steps forward in transparency, there is still more work to do. In my view, it’s just better policymaking to be communicating effectively with the private sector more or less all the time. New things are happening in the economy every day. New data have come out, other central banks are taking action, there’s new foreign exchange information, or there are political revolts and upheavals. And the markets want to know how such changes will affect Fed policy.

I think we could start with a press conference at every meeting. Press conferences are currently held after only four of the eight regularly scheduled meetings. As a result, meetings that are not followed by a press conference tend to be thought of as ones at which taking an important action is unlikely. Consequently, the risk is to make moves that are calendar-based and to miss out on some moves that the data would support simply because no press conference is scheduled. If there were a press conference after every meeting, then all meetings would be “ex ante” identical—the FOMC could make a decision if it’s appropriate at that particular meeting. (For more discussion on state-contingent versus calendar-based policy, see the section “QE3: Data-Driven, Not Date-Driven” in this annual report.)

In addition, improvements could be made regarding the FOMC’s forecasts of macroeconomic variables published each quarter in the SEP. The SEP has a checkered history, and it can be confusing and misleading. The main problem is that the forecasts are unconnected and unattributed. Currently, each FOMC participant submits his or her projections for real output growth, the unemployment rate, overall inflation, core inflation and, as of 2012, the future path of the target federal funds rate. The Fed publishes summaries of the projections without attribution to individual participants.

Furthermore, the sets of forecasts that the FOMC participants submit are based on various models and policy assumptions. Each projection is based on the optimal policy from that person’s point of view, not necessarily what the FOMC is actually going to do. The report does not reflect any sort of FOMC consensus, and it does not capture statistical uncertainty or a range of possible outcomes. This contributes to even greater interpretation problems.

So, while the SEP provides useful information, communications about how the FOMC views the economy could be improved. Other

DEEPER DIVE

Taper Tantrum: A Communication Breakdown

The “taper tantrum” of 2013 is an example of what can happen when communication signals between the Fed and financial markets get crossed.

In the spring of 2013, QE3 was in full swing; the Fed was purchasing \$85 billion per month in longer-term Treasuries and mortgage-backed securities. As the economy continued to slowly recover, questions began to arise as to when the Fed would begin to reduce, or taper, the QE program. To date, the FOMC’s messaging on this topic had remained steady, and financial markets remained relatively calm.

“The taper tantrum was a communications problem, and that is its great lesson for us as monetary policymakers. It was all about communicating future policy action, not about actual changes in policy.”

— James Bullard, President and CEO

Then communications about the future of the program began to emerge. In May, Fed Chairman Ben Bernanke indicated during his testimony before the Joint Economic Committee that the Fed could begin to taper if and when economic conditions warranted. A few weeks later, at its regular June meeting, the FOMC voted to continue QE3 at the pace of \$85 billion per month. But Bernanke discussed a tentative future tapering time frame during the post-meeting press conference.¹

Markets reacted abruptly: Bond and stock prices tumbled, and market volatility surged. This period became known as the “taper tantrum.”

Continued on next page

Continued from previous page

“The essential decision by the FOMC at that meeting was to do nothing, but that left the chairman to explain at the press conference what the future strategy would be with respect to the pace of asset purchases,” James Bullard said.

“I dissented at the June meeting because I didn’t think that this was a good way to proceed, and I thought it would come off hawkish,” he recalled.²

In September, the FOMC surprised markets in the other direction. Markets expected the FOMC to announce that it would begin tapering. When the FOMC made no such announcement, some of the financial market effects following the June meeting were then reversed.

When the FOMC formally decided in December to begin tapering, the decision was met with very little market reaction. The actual reduction in the pace of asset purchases throughout 2014 went smoothly, and the FOMC ended QE3 in October 2014.³

“The taper tantrum was a communications problem, and that is its great lesson for us as monetary policymakers,” Bullard said. “It was all about communicating future policy action, not about actual changes in policy.” ■

ENDNOTES

- 1 See Bernanke, Ben. FOMC press conference, June 19, 2013.
- 2 See Federal Reserve Bank of St. Louis. President Bullard’s Comments on Recent FOMC Actions, press release from June 21, 2013.
- 3 See Bullard, James. A Tame Taper, a presentation delivered in Little Rock, Ark., May 16, 2014.

central banks put this out as a collective committee staff forecast, and that’s the way we could do it as well.

One way would be to replace the SEP with a quarterly monetary policy report that better explains the FOMC’s actions and projections on a regular basis. It would include a staff forecast as a baseline of what the Fed expects, and FOMC participants could then give their views/forecasts relative to that baseline. The report could also provide more color commentary on various developments on the economy. The Bank of England was a trailblazer in this area with its inflation report. Many other central banks also do this.

I also think we could do more on policy rules in a quarterly monetary policy report. Such a report could provide a more complete discussion of how the FOMC views the current state of the U.S. economy and its expectations going forward. It could include a regular discussion of various monetary policy rules and explain why any deviations from those rules seemed appropriate at that time. The FOMC has already been using policy rules for many years in its internal deliberations, so I don’t see anything that would inhibit the Fed from talking in terms of policy rules and deviations from policy rules. ■

ADDITIONAL RESOURCES

“The Policy Rule Debate: A Simpler Solution” (President’s Message: *The Regional Economist*, First Quarter 2017)

“A Quarterly Monetary Policy Report Would Improve Fed Communications” (President’s Message: *The Regional Economist*, April 2013)

FOMC Speak: A repository of speeches, testimony, interviews and commentary by FOMC participants (Federal Reserve Bank of St. Louis website)



Top left: Nikki Jackson, senior vice president and regional executive of the Louisville Branch, participates in the National Teach Children to Save Day for financial literacy month in April 2017.

Top right: Bill Emmons (left) and Ray Boshara (right) interview with Bloomberg radio in 2016. Emmons is the lead economist for the Center for Household Financial Stability (HFS) at the St. Louis Fed, and Boshara is its senior adviser and director.

Middle: St. Louis Fed President James Bullard and Senior Vice President of Public Affairs Karen Branding tour Illinois-based Dot Foods' warehouse with Dot CEO Joe Tracy and other executives during an outreach visit to the northern part of the Fed's Eighth District in 2017.

Bottom: Robert Hopkins, senior vice president and regional executive of the Little Rock Branch, engages with bankers at an outreach event in Arkansas in 2018.

“Along with others on the FOMC, Jim Bullard was a proponent of adopting an explicit inflation target in the U.S. years before it was officially implemented in 2012. He was part of a group of Fed presidents who helped craft the language that led to the FOMC’s ‘Statement on Longer-Run Goals and Monetary Policy Strategy,’ which is where the inflation target is stated. In addition, Bullard was, and continues to be, an advocate of defending the 2 percent target from the high side and the low side.”

— Christopher Waller, Executive Vice President and Director of Research

7.

The Road to an Inflation Target

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



The Mystery of Inflation?

Watch online at stlouisfed.org/annual-report/2017.

The U.S. lagged many other central banks around the world in adopting an explicit inflation target. The FOMC didn’t name one until January 2012. This was a step toward increased Fed transparency and something that I and others had long advocated.

The European Central Bank is an example of a central bank that has long had an inflation target. In fact, the ECB has had one since it was established in 1998. There were many years during the run-up to the ECB’s establishment to decide various aspects of adopting an inflation target—e.g., what the number would be, the horizon over which the central bank would be expected to achieve that number, the index used to measure inflation and the exact wording for the target.

Ben Bernanke, who became Fed chairman in 2006, had wanted the FOMC to implement an explicit inflation target for the U.S. Many others on the FOMC were also supportive of an inflation target. There was some talk that the FOMC would simply need to put a number in the post-meeting statement. Others, including me, thought this did not go far enough, that other issues related to naming a specific number also needed to be addressed—i.e., the issues that were the focus of discussion in establishing the ECB.

To that end, in early 2011 an ad hoc group of Federal Reserve bank presidents assembled—five of us—whose views on monetary policy spanned the spectrum of opinion on the FOMC. Rather than putting a number in the FOMC’s post-meeting statement, we drafted

a separate one-page statement that not only would name an inflation target for the U.S., but would touch on other important issues. It said that the FOMC, given the Fed's dual mandate, would follow a balanced approach between the real side of the economy (e.g., employment, output) and the nominal side of the economy (e.g., prices). It named an inflation target of 2 percent, and it explained why a similar target for the employment side of the mandate was not specified. (Monetary policy controls inflation over the medium to longer run, but it does not control employment over that horizon.)

The proposed statement was vetted extensively over several months by other Reserve bank presidents, Chairman Bernanke and other members of the Board of Governors.

Ultimately, at its January 2012 meeting, the FOMC adopted a very similar statement as part of the

formal process of the meeting, which is how we got an explicit inflation target. Under current protocol, the FOMC revisits the statement every January. Chairman Bernanke's goal of naming an official inflation target for the U.S. was achieved, and the FOMC's diverse views, collegial approach and disciplined vetting had served it well. ■

ADDITIONAL RESOURCES

"Federal Reserve issues FOMC statement of longer-run goals and policy strategy" (Board of Governors of the Federal Reserve System press release from Jan. 25, 2012; amended in January 2018)

"Inflation Targeting in the USA" (Bullard's speech delivered in Chicago, Feb. 6, 2012)

"Recent Actions Increase the Fed's Transparency" (President's Message: *The Regional Economist*, April 2012)



In his office at the St. Louis Fed, President James Bullard (left) discusses monetary policy and macro-economic issues with Chris Waller, executive vice president and director of research.

The Fed's Dual Mandate: Is a Single Better?

At the outset, the Federal Reserve Act of 1913 did not give the Fed an explicit monetary policy mandate—although the goal in creating the U.S. central bank was to promote economic and financial stability for the nation.

Following the Great Depression and World War II, Congress passed the Employment Act of 1946, requiring the federal government “to promote maximum employment, production and purchasing power.”

In response to the Great Inflation of the 1970s and ensuing recession, the Full Employment and Balanced Growth Act of 1978 (referred to as the

Humphrey-Hawkins Act) was introduced, making the federal government responsible for achieving full employment and price stability, among other goals.

In 1977, Congress amended the Federal Reserve Act, directing the Fed to “increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate

long-term interest rates.” The first two—maximum sustainable employment and price stability—are commonly referred to as the Fed’s dual mandate.

Long before the dual mandate was law, an idea took hold in the 1950s that there is an inverse relationship between unemployment and inflation. This relationship (named the Phillips curve, for economist A.W. Phillips) suggests that the lower the unemployment rate is, the higher wage growth (i.e., wage inflation) is likely to be. The theory is that this wage inflation would then get passed on by firms to customers via higher prices (i.e., price inflation). It was generally viewed that policymakers could exploit the trade-off between inflation and unemployment by setting policy that could raise one variable at the cost of the other.

“Inflation control, or price stability, is really the paramount goal of monetary policy—or should be—because that’s really the best that the monetary authority can do to promote a healthy economy: maximum employment and economic growth.”

— David Wheelock, Group Vice President and Deputy Director of Research

The Fed and other central banks are still guided, in part, by the Phillips curve in making monetary policy. However, the idea hasn’t always held up in practice—especially in the stagflation era of the 1970s (when unemployment *and* inflation were high) and in today’s environment (when unemployment *and* inflation are low). This has many monetary policymakers, including James Bullard, pointing to the “disappearing Phillips curve.”¹

“The evidence since then has accumulated even more than it already had at the time in the 1970s—that there was no automatic, permanent trade-off between inflation and unemployment and that you could keep inflation low and stable without adverse consequences for the real economy in the medium to the long run,” Bullard said.

While monetary policymakers can influence the real economy temporarily, he noted, they cannot control real variables like employment, output growth, consumption growth and investment over the medium term. “These are going to be defined ultimately by markets interacting, by supply and demand all across the economy and by specific markets—real decisions by real people,” Bullard said. “The Fed can’t change that.

“The central bank can control the inflation rate over the medium term, and because of that, I think it’d be better to have a single mandate,” he said. “The optimal way to deliver on the dual mandate is to pursue low and stable inflation, which in turn helps the real economy.”² ■

ENDNOTES

- 1 See Bullard, James. Remarks on the 2018 U.S. Macroeconomic Outlook, a presentation delivered in Lexington, Ky., Feb. 6, 2018.
- 2 For more information, see Bullard, James. President’s Message: The Fed’s Dual Mandate: Lessons of the 1970s. The Federal Reserve Bank of St. Louis Annual Report 2010; and Wheelock, David. Monetary Policy Minutes: What Is Monetary Policy? Timely Topics podcast, June 2, 2017.



Top left: Douglas Scarboro (center), senior vice president and regional executive of the Memphis Branch, interacts with business and industry leaders at an Economic Club of Memphis event in 2016.

Top right: Julie Stackhouse, executive vice president for Supervision, Credit, Community Development and the Center for Learning Innovation at the St. Louis Fed, interacts with students and professionals during the Corporate Finance Conference at Washington University in St. Louis in 2011.

Middle: Branch boards of directors meet regularly to provide insight on the latest developments in the local economy, which are then shared with the president and other economists at the Bank. This type of anecdotal information gathering ensures that the voice of Main Street is represented at the FOMC table in Washington, D.C.

Bottom: David Sapenaro, first vice president and chief operating officer at the St. Louis Fed, engages with employees at the Bank's annual town hall event in 2018. Sapenaro was appointed the Bank's COO in 2006.

“Like many economists at the St. Louis Fed and throughout the Federal Reserve System, Jim Bullard has spent his career within the Fed researching and writing papers to contribute to a better understanding of the macroeconomy and monetary policy. He has continued this type of work throughout his time as president. Most recently, he has explored whether price-level targeting or nominal GDP targeting might lead to even better outcomes than inflation targeting, which is the current standard among many central banks.”

— David Wheelock, Group Vice President and Deputy Director of Research

8.

Alternatives to Inflation Targeting

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.



ACCOMPANYING VIDEO



Life of an Academic Scholar

Watch online at stlouisfed.org/annual-report/2017.

Over the last two decades, central banking around the world has been primarily focused on inflation targeting as a way to keep inflation low and stable (although, as I noted earlier, the Fed was relatively late to the party on establishing an explicit inflation target). Committing to an inflation target has generally led to good outcomes for inflation and inflation expectations. But I have wondered if we could have even better outcomes going forward.

One of the waves of the future in central banking may be a move to price-level targeting or nominal GDP targeting as a way to conduct monetary policy in an environment in which policymakers are trying to maintain their inflation target. In many macroeconomic models, these alternative approaches—rather than inflation targeting—are optimal policy.

After I discussed a paper by economist Kevin Sheedy at a Brookings Institution event in 2014, I started writing, with co-authors, papers that are versions of the story Sheedy told in his paper. In particular, I explored models where the optimal policy is nominal GDP targeting or some variant.

The simplest version is price-level targeting. The idea would be to keep the price level on a path that would be upward sloping and associated with a central bank's inflation

target. If the actual price level moved off that path, monetary policymakers would always be striving to get back to it. Therefore, under this framework, the goal would be to hit the inflation target on average over the medium term, meaning that periods of inflation that are higher or lower than the inflation target would be allowed as needed. This contrasts with inflation targeting, which allows misses on inflation and does not do anything about them. Nominal GDP targeting is related to price-level targeting, but the former takes into account both inflation and real GDP growth.

I have argued that *de facto* price-level targeting occurred from 1995 to 2012 in the U.S. In recent years, however, the U.S. has fallen off the price-level path because inflation has mostly been running below the 2 percent target since 2012. The actual price level (measured using the personal consumption expenditures price index) is currently between 4 percent and 5 percent lower than the previously established path. If the FOMC were following a price-level targeting approach, this would suggest allowing inflation to be above target for some time to return to that price-level path.

These alternative approaches—price-level targeting and nominal GDP targeting—could be an improvement on inflation targeting and might be a better way to operate, especially in the low interest rate environment that has the zero lower bound threatening all the time. This is an ongoing issue and one that other FOMC participants have also discussed. Of course, it requires further study and debate, but in my view, adopting one of these alternatives may be a wave of the future in central banking. ■

ADDITIONAL RESOURCES

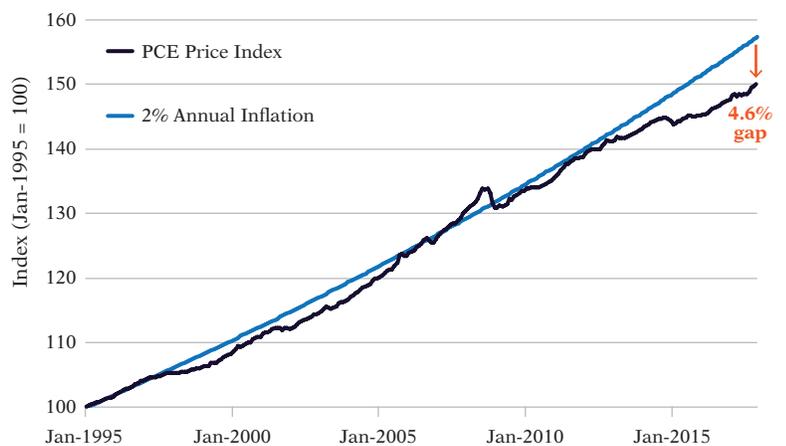
“A Singular Achievement of Recent Monetary Policy” (Bullard’s presentation delivered in South Bend, Ind., Sept. 20, 2012)

“Discussion of ‘Debt and Incomplete Financial Markets’ by Kevin Sheedy” (Bullard’s presentation delivered in Washington, D.C., March 21, 2014)

“Allan Meltzer and the Search for a Nominal Anchor” (Bullard’s speech delivered in Philadelphia, Jan. 4, 2018)

SNAPSHOT IN TIME: From Bullard’s Speech on Jan. 4, 2018

Personal Consumption Expenditures Price Index



Price-level targeting is optimal policy in some macroeconomic models. *De facto* price-level targeting occurred from 1995 to 2012, when the U.S. maintained a 2 percent price-level path. Since then, however, the actual price level has been below the previously established path.

SOURCES: Bureau of Economic Analysis and Bullard’s calculations.



Cletus Coughlin, senior vice president and chief of staff to the president at the St. Louis Fed, delivers a brown-bag lunch-and-learn presentation in 2018 to Bank employees on the responsibilities of the FOMC and the policy-making process.

“The financial crisis ultimately changed the nature of how we think about central banking and how a central bank should conduct monetary policy at the zero lower bound.”

— James Bullard, President and CEO

9.

Conclusion: Lessons Learned

James Bullard shared some reflections on his first 10 years as Bank president during recent conversations with staff. The following are excerpts from those discussions.

“

During the past 10 years, we have learned some important lessons in managing through the financial crisis and ensuing recovery.

This period underscored the importance of maintaining diverse views on the FOMC and highlighted the important role the Reserve bank presidents play at the table. My colleagues (past and present) and I have collectively provided continuity for the Fed—by striving to bring issues to the forefront, influencing the debate at the FOMC, and helping to shape monetary policy for the better.

Another reflection from this period is how challenging it has been to encounter the zero lower bound for the Fed’s policy rate. Earlier in my career, I would not have described it as a very serious problem, but it has turned out to be a more difficult issue than many of us appreciated. I thought this issue was something for the 1930s (during the Great Depression era), but the financial crisis ultimately changed the nature of how we think about central banking and how a central bank should conduct monetary policy at the zero lower bound.

Moreover, we have experienced ultralow policy rates globally for much longer than anyone anticipated. Previously, it would have been surprising to stay at the zero lower bound for more than two quarters, much less a year. Yet, we remained at a near-zero policy rate in the U.S. for seven years—with Japan and Europe even seeing negative interest



rates. The idea that this would last for so long—way beyond ordinary business cycle time—has been a real shock to the global macroeconomics and central banking community.

Beyond the policy rate, the 2007-09 crisis made people reconsider the intersection between the financial sector and real economy. We have learned to be more understanding of the fact that financial crises can happen and that the modern economy is not protected against these shocks. While such crises are infrequent, they can be devastating to the economy as a whole when they do occur.

To that end, in my view, there is not enough discussion today about where the next financial crisis

may originate. It has the potential to come from outside the banking sector, not inside it. The 2007-09 crisis arguably originated *outside* traditional banking—more specifically, from the nonbank financial (investment banking) sector.

As a central bank, we have an opportunity to reorient our thinking about these risks to ensure we set the right policy and employ the right level of oversight to help mitigate or prevent the potential impacts of future crises. We cannot wait for the next crisis to unfold to act. ■

Pivotal Events from Crisis to Recovery: 2007-2010 ▼

2007

Aug. 9, 2007 – The Libor-OIS spread rises, escalating fear of bank insolvency. The spread is interpreted as the market’s perception of the risk associated with subprime mortgages spreading to the broader mortgage market and overall economy.

Sept. 18, 2007 – The FOMC reduces the target for the federal funds rate from 5.25 to 4.75 percent.

Oct. 31, 2007 – The FOMC reduces the target for the federal funds rate to 4.50 percent.

December 2007 – The Great Recession begins, per the National Bureau of Economic Research.

Dec. 11, 2007 – The FOMC reduces the target for the federal funds rate to 4.25 percent.

Dec. 12, 2007 – To address pressures in short-term funding markets, the Fed establishes a temporary Term Auction Facility—whereby term funds are auctioned to depository institutions against a variety of collateral—and also establishes swap lines with the European and Swiss central banks.

2008

January 2008 – The FOMC reduces the target for the federal funds rate twice during the month, first to 3.50 percent and then to 3.00 percent.

March 18, 2008 – The FOMC reduces the target for the federal funds rate to 2.25 percent.

March 24, 2008 – The New York Fed announces it would provide term financing to facilitate JPMorgan Chase’s acquisition of Bear Stearns. This action prevents Bear Stearns from filing for bankruptcy and represents one of the first bank bailouts of the financial crisis.

April 30, 2008 – The FOMC reduces the target for the federal funds rate to 2.00 percent.

July 2008 – An oil-price shock culminates in nominal crude oil prices peaking above \$145 per barrel.

Sept. 6, 2008 – Fannie Mae and Freddie Mac—the nation’s two largest mortgage finance companies—are placed into conservatorship to prevent further disruption in financial markets.

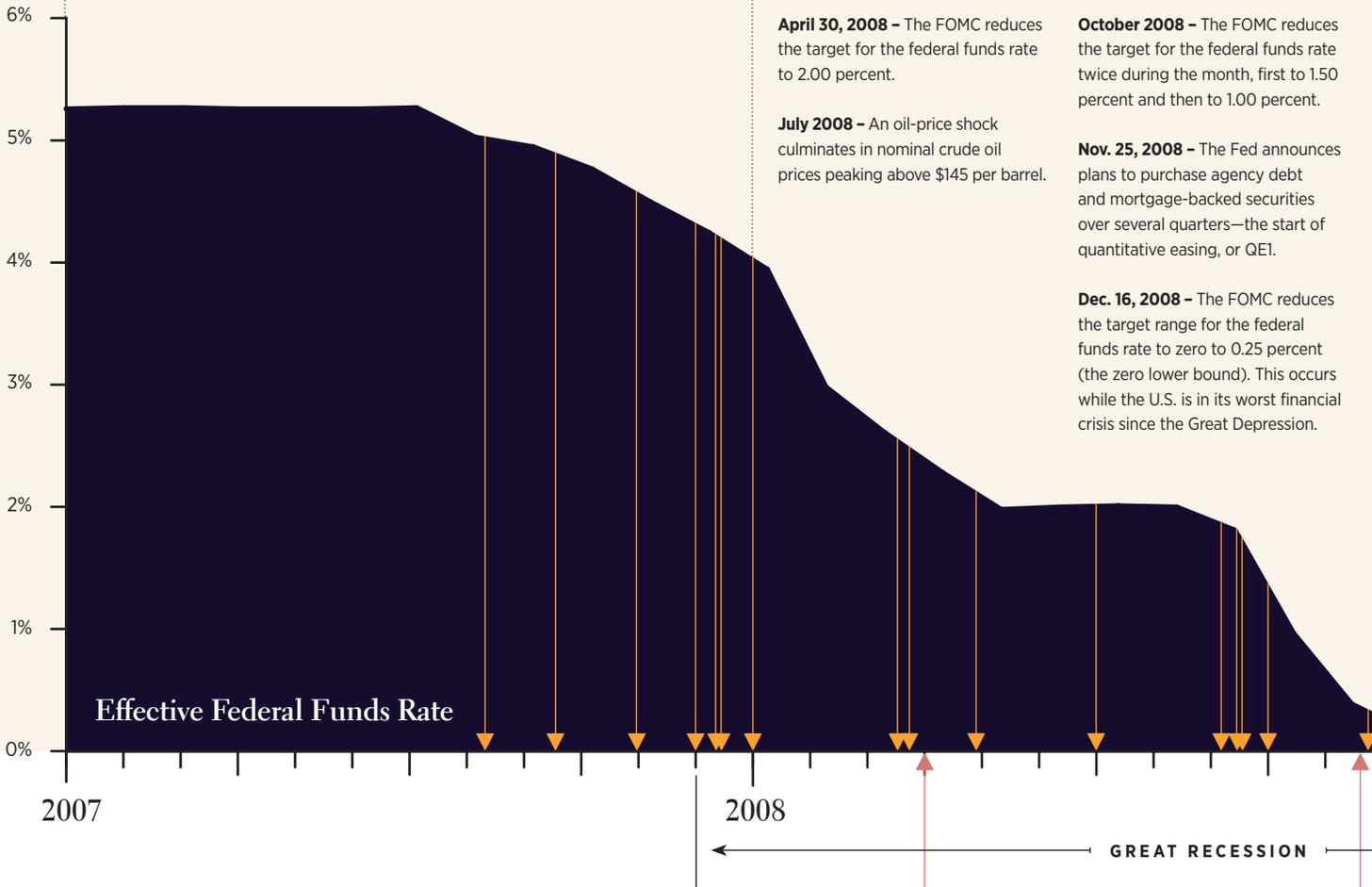
Sept. 15, 2008 – Lehman Brothers files for Chapter 11 bankruptcy. This announcement spurs concern in financial markets around the world.

Sept. 16, 2008 – The Fed authorizes the New York Fed to lend up to \$85 billion to the American International Group (AIG). The deal implies that AIG was “too big to fail.”

October 2008 – The FOMC reduces the target for the federal funds rate twice during the month, first to 1.50 percent and then to 1.00 percent.

Nov. 25, 2008 – The Fed announces plans to purchase agency debt and mortgage-backed securities over several quarters—the start of quantitative easing, or QE1.

Dec. 16, 2008 – The FOMC reduces the target range for the federal funds rate to zero to 0.25 percent (the zero lower bound). This occurs while the U.S. is in its worst financial crisis since the Great Depression.



Bullard Responses ▲

April 1, 2008 – Bullard:
Succeeding William Poole, James Bullard becomes the St. Louis Fed’s president and CEO. He joined the Bank in 1990 as an economist in the Research division.

Nov. 20, 2008 – Bullard:
In “Three Funerals and a Wedding,” Bullard discusses fiscal policy as a macroeconomic stabilization tool, a previously unpopular idea that may be taking on new life.

2009

2010

March 18, 2009 - The FOMC expands its large-scale asset purchase program under QE1. In total, the FOMC says it will purchase up to \$1.25 trillion of mortgage-backed securities, up to \$200 billion of agency debt and up to \$300 billion of longer-term Treasury securities.

June 2009 - The Great Recession ends, per the National Bureau of Economic Research. The recession lasted 18 months, the longest of any recession since World War II.

July 21, 2010 - The Dodd-Frank Wall Street Reform and Consumer Protection Act is enacted. The law is adopted to regulate financial markets and protect consumers in the wake of the financial crisis.

Nov. 3, 2010 - The FOMC begins QE2 by saying that it intends to purchase \$600 billion of longer-term Treasuries by the end of the second quarter of 2011.

2009

2010

2011

Jan. 3, 2009 - Bullard:

In "A Two-Headed Dragon for Monetary Policy," Bullard notes that having an explicit U.S. inflation target would mitigate two medium-term risks: a Japanese-style deflationary trap and 1970s-style inflation.

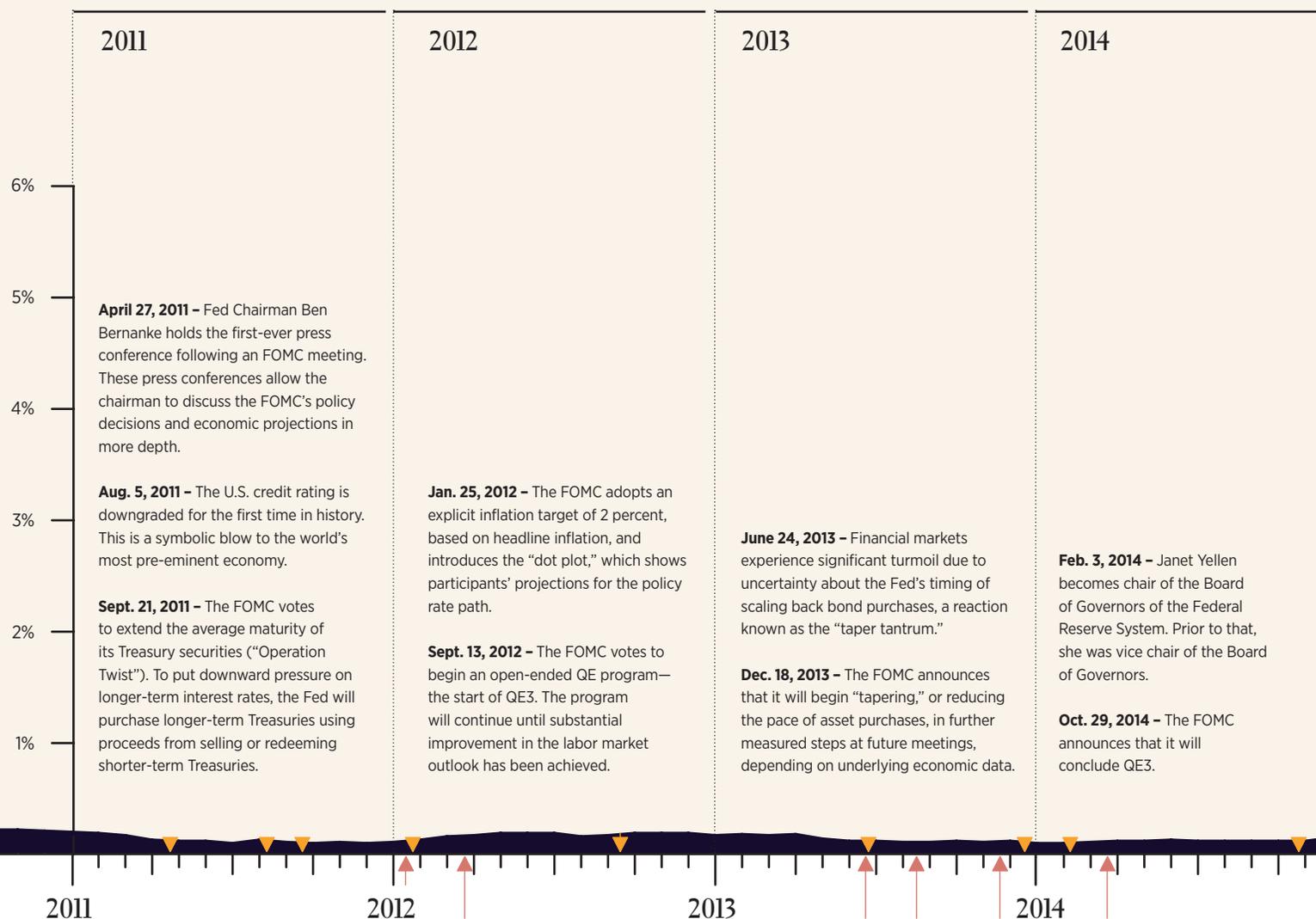
March 22, 2010 - Bullard:

Regarding monetary policy normalization, Bullard calls for a last-in, first-out approach. When the normalization debate ensues, he states his preference to adjust the Fed's balance sheet by removing QE prior to raising the policy rate.

July 29, 2010 - Bullard:

In "Seven Faces of 'The Peril,'" Bullard warns about the U.S. falling into a Japanese-style deflationary trap. To avoid that situation, he calls for the FOMC to implement a new phase of its QE program.

Pivotal Events from Crisis to Recovery: 2011-2017 ▼



Bullard Responses ▲

Jan. 13, 2012 – Bullard: In "Death of a Theory," Bullard discusses fiscal policy's limited effectiveness in business cycle stabilization.

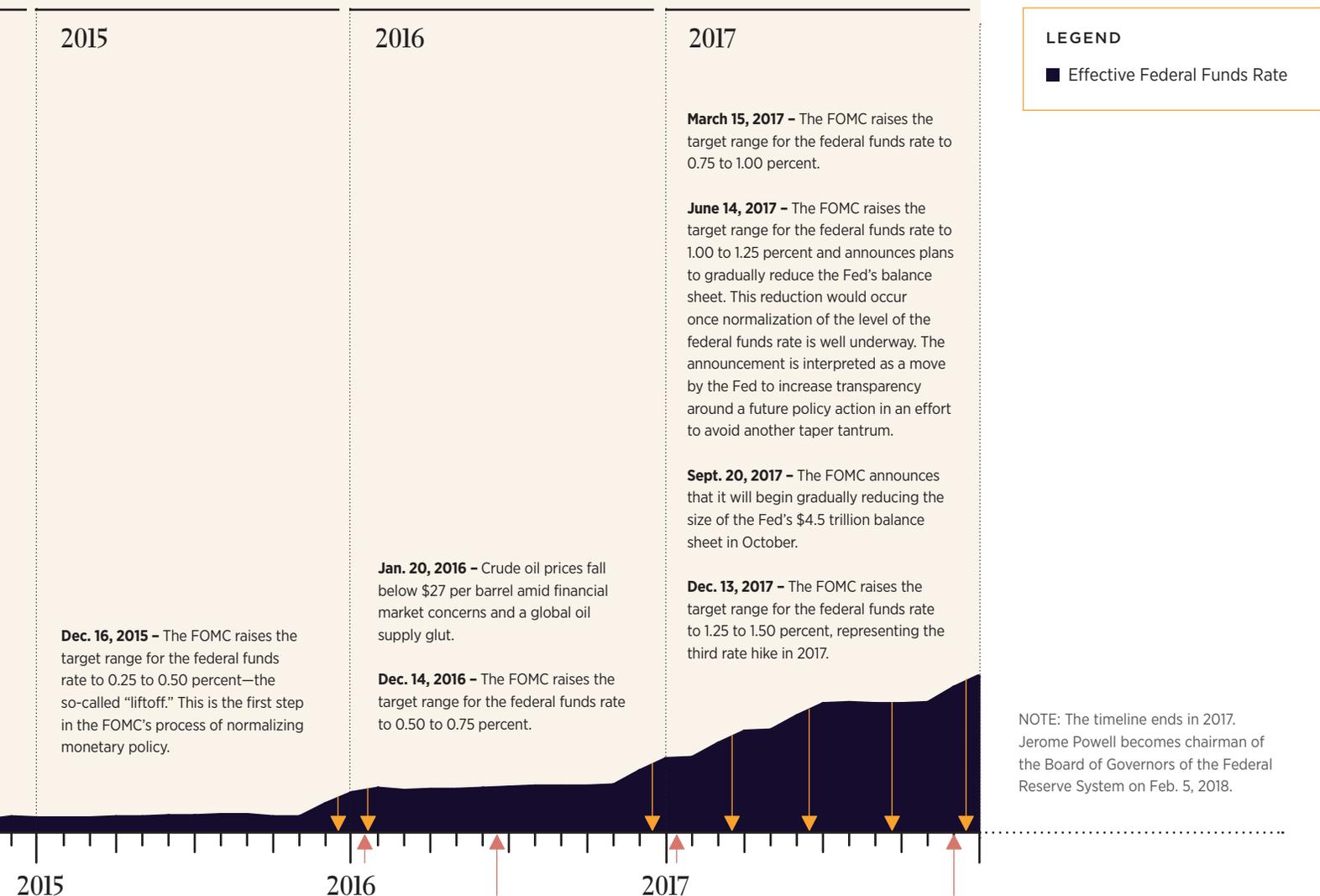
March 23, 2012 – Bullard: In a speech, Bullard calls for the FOMC to publish a monetary policy report similar to other central banks. He says that such a report could contain a more fulsome discussion of the current state of the U.S. economy and the outlook.

June 19, 2013 – Bullard: At the FOMC meeting, Bullard dissents for the first time since becoming St. Louis Fed president. He dissents, in part, because he thinks announcing a plan for reducing the pace of asset purchases under QE3 is inappropriately timed, given recent data and changes to the outlook.

Aug. 14, 2013 – Bullard: While providing an update on the tapering debate, Bullard calls for a press conference after every FOMC meeting. Currently, press conferences are held after every other meeting.

Nov. 21, 2013 – Bullard: In "The Notorious Summer of 2008," Bullard looks back at the macroeconomic situation in 2008. He says that during the summer of that year, a case could still be made that the U.S. economy would muddle through the crisis.

March 21, 2014 – Bullard: At the Brookings Institution, Bullard discusses a paper in which the optimal monetary policy is nominal GDP targeting. This prompts him to write papers that have nominal GDP targeting or price-level targeting as optimal policy, which he calls a possible wave of the future in central banking.



Jan. 14, 2016 – Bullard: *At a presentation in Memphis, Tenn., Bullard discusses the decline in oil prices and the effect on the economy.*

June 17, 2016 – Bullard: *In an announcement, Bullard explains the St. Louis Fed’s new characterization of the U.S. economic outlook: Instead of assuming the economy will converge to a single, long-run outcome, the new approach to near-term projections assumes the economy could visit a set of possible regimes.*

Jan. 12, 2017 – Bullard: *At a presentation in New York, Bullard reflects on whether the Fed should begin reducing the size of its balance sheet (which had increased substantially under QE) now that the policy rate has been increased.*

Dec. 1, 2017 – Bullard: *At a presentation in Little Rock, Ark., Bullard discusses the flattening U.S. yield curve and the risk of yield curve inversion. He says that, with inflation below the Fed’s target, it is unnecessary to push monetary policy normalization to such an extent that the yield curve inverts.*

“I think it is incumbent on the Main Street component of the Fed ... to represent Main Street America the way it was intended in the original Federal Reserve Act. I felt that the [financial] crisis actually brought out the role of the regional Federal Reserve banks pretty extensively.”

— James Bullard, President and CEO

Beyond the Role of FOMC Policymaker: Reserve Bank CEO

ACCOMPANYING VIDEO



Voice of Main Street

Watch online at stlouisfed.org/annual-report/2017.

In looking back at the past 10 years, James Bullard recounted how the financial crisis demonstrated the importance of the Fed’s decentralized structure that includes three distinct but complementary components: the Board of Governors in Washington, D.C.; a Federal Reserve bank in New York City, long regarded as the nation’s financial capital; and 11 other regional Reserve banks to represent the voice of Main Street across the rest of the nation.¹

As the president and CEO of the Federal Reserve Bank of St. Louis, Bullard oversees the Eighth Federal Reserve District.

“I think it is incumbent on the Main Street component of the Fed to push back against its Washington and Wall Street counterparts, to represent Main Street America the way it was intended in the original Federal Reserve Act,” Bullard said. “I felt that the crisis actually brought out the role of the regional Federal Reserve banks pretty extensively.”

In addition to providing crucial economic input from their respective districts as part of FOMC monetary policymaking, the Fed’s regional Reserve bank presidents also serve as the CEOs for their respective institutions. Reporting to a board of directors, they are responsible for establishing the direction of their banks, achieving short- and long-term objectives, and running efficient operations.

Upon becoming president and CEO of the St. Louis Fed on April 1, 2008, Bullard went from having eight employees reporting to him as deputy director of research for monetary analysis to overseeing an institution of more than 800 employees, with headquarters in St. Louis and branch locations in Little Rock, Ark.; Louisville, Ky.; and Memphis, Tenn.

He acknowledged the importance and benefit of having a very experienced senior management team already on deck, particularly as he took over the reins amid the country's escalating financial crisis and a time of dramatic regulatory and technological changes. "The executive team was very strong," Bullard said. "We were in pretty good shape from a management perspective, even though I was new."

Bullard and his senior team didn't want the St. Louis Fed to be simply a good institution. To improve the Bank's performance over time, they believed it should be run like a top-performing business, with a passion for excellence, innovation and service to the Federal Reserve's Eighth District.

"The basic idea was for the Bank to better understand the needs of the Federal Reserve System, as well as the environment in which the nation's central bank is operating, and then to develop our own talent or find the areas where we can contribute," Bullard said. "We have found places where we can and are able to contribute, and that has led to significant expansion here at the St. Louis Fed."

Examples of the growth, innovation and opportunities resulting from those efforts include:

- The St. Louis Fed continued to expand its support for the U.S. Treasury via the Reserve Bank's longtime role as the official Treasury Relations and Support Office, and its 2014 designation as a "core" Reserve bank to support the Treasury via the fiscal agent consolidation (FAC). As part of the FAC, seven business lines transitioned from other Reserve banks to the St. Louis Fed.
- The St. Louis Fed's Supervision division spearheaded a multiyear Fed System-wide effort to revamp and modernize the curriculum and technology used to train examiners of community banks, leading to additional, similar programs for large financial institution examiners and consumer compliance examiners.
- The St. Louis Fed's publicly available database FRED® (Federal Reserve Economic Data), coordinated by the Research division, enjoyed rapid growth and global recognition as it topped the half-million mark in data series in 2017.
- The St. Louis Fed's Economic Education team gained recognition as a national leader in

DEEPER DIVE

Bank Supervision and Monetary Policymaking

The Fed supervises and regulates all bank holding companies, savings and loan holding companies, state-chartered banks that are members of the Federal Reserve System, and any nonbank that is designated as a systemically important financial institution by the Financial Stability Oversight Council.

Supervising banks helps the Fed better perform its critical functions as a central bank; likewise, the Fed's expertise in monetary policymaking contributes to its being a more effective supervisor.

"Monetary policymakers depend on information provided by bank supervisors about banking market conditions ... when determining the appropriate path of policy."

— Julie Stackhouse, Executive Vice President, Supervision

The ability to have "boots on the ground" for supervising banks at all levels provides the Fed with the opportunity to glean deeper insights into the health of the financial system and local economies.

"During the Dodd-Frank Act debate in 2010, there was discussion about changing the way the U.S. regulatory structure worked," James Bullard said.

"Many proposals were on the

table, but my feeling was that you needed to keep the Fed involved in regulation, because otherwise, monetary policymakers would lose touch with the nature of financial institutions and how important they can be to the macroeconomy."

As an example, Bullard cited what happened in the United Kingdom during the financial crisis. In the late summer of 2007, amid the freeze in global money market liquidity, there was a run on Britain's fastest-growing mortgage lender, Northern Rock.

At that time, the U.K. financial services industry was overseen by the Financial Services Authority (FSA), which had been established in 2000 after banking oversight was separated from the Bank of England.¹

"When there was a run on Northern Rock, the Bank of England was at a disadvantage because the regulatory structure had been separated from the monetary structure," Bullard said. "This experiment alone shows that you really want the central bank to be intimately involved in bank regulation, because there's a great deal of feedback between that process and the monetary policy process."

By 2013, regulatory oversight was returned to the Bank of England, and the FSA officially shuttered.² ■

ENDNOTES

- 1 See McConnell, Pat. After a Long Line of Financial Disasters, UK Banks on Regulatory Change. *Financial Times*, April 8, 2013.
- 2 See London Money Market Association. Financial Services Authority Abolished, April 2013.

St. Louis Fed Key Milestones: 2008-2017

economic education and financial literacy, surpassing 1 million enrollments in its online courses and videos for the first time in 2016.

- In 2014, the St. Louis Fed opened its Economy Museum, which includes close to 100 exhibits and has drawn visitors from across the country and around the world.

Diversity and inclusion was another early area of emphasis: One of Bullard's first actions upon becoming CEO in 2008 was to launch the St. Louis Fed's diversity and inclusion program office.

"I felt it was important to be able to recruit the workforce of the future, which I think is going to be a lot more diverse, and is already a lot more diverse, than what we've seen historically around the Bank," Bullard said. "In order to do that, we had to move up the learning curve as an organization and get better at our cultural competencies."

Bullard said the Bank's most challenging areas of diversity recruitment remain the IT fields and economics. "We'd like to get better on all kinds of dimensions on this going forward," he added.

One of his top moments as CEO came in 2016 when the St. Louis Fed was designated as St. Louis' top workplace among large companies. The awards were sponsored by the St. Louis Post-Dispatch and were based on employee surveys.

"I felt very gratified by that, and I felt like it said a lot about our employees and our workplace," Bullard said. ■

ENDNOTE

- 1 For more background on the Fed's regional structure, see Bullard, James. *The U.S. Economy: A Report from Main Street*, a presentation delivered in Memphis, Tenn., Feb. 18, 2010.

2008

April 1, 2008 – James Bullard becomes the St. Louis Fed's president and CEO, succeeding William Poole. Bullard joined the Bank in 1990 as an economist in the Research division.

Nov. 21, 2008 – The St. Louis Fed wins the Missouri Quality Award, the state's official award for business excellence. Selection criteria include strengths in leadership, strategic planning, and customer and market focus.



2011

DIALOGUE WITH THE FED
Beyond Today's Financial Headlines

Sept. 12, 2011 – The St. Louis Fed launches Dialogue with the Fed, an evening lecture series for the general public. Delving into key economic issues of the day, the first lecture is "Lessons Learned from the Financial Crisis."

2012



The St. Louis Fed's Julie Stackhouse, executive vice president for Supervision, Credit, Community Development and the Center for Learning Innovation, Don Schlagenhauf, economist, and Carlos Garriga, vice president and economist, discuss the economics of homeownership as part of the Bank's Dialogue with the Fed public lecture series.

2013

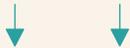


Researching Family Balance Sheets to Strengthen Families and the Economy

May 23, 2013 – The St. Louis Fed opens its Center for Household Financial Stability. The Center conducts research and organizes forums locally and nationally to address the balance sheets of struggling American families.

Community Banking in the 21st Century

Oct. 3, 2013 – The St. Louis Fed hosts the first Community Banking in the 21st Century research and policy conference. Sponsored by the Federal Reserve System and Conference of State Bank Supervisors, this annual event gathers bankers, academics and regulators to discuss the latest findings on community banking.



2014

April 28, 2014 – The U.S. Treasury designates the St. Louis Fed as a “core” Reserve bank to support its cash management, accounting, collateral and enterprise functions.



Sept. 22, 2014 – The St. Louis Fed opens its Economy Museum to the public. This interactive and free museum is dedicated to increasing financial literacy and economic education.



Nov. 16, 2014 – The St. Louis Fed commemorates its centennial year. The Bank chronicles its birth and what lies ahead for the “maverick” of the Fed system in its 2013 annual report.



2015



Oct. 22, 2015 – FRASER® (Federal Reserve Archival System for Economic Research) reaches a milestone of more than a half million archival items. A digital library of U.S. economic, financial and banking history, FRASER provides the public with free access to data and policy documents from many institutions, particularly the Federal Reserve System.



2016

June 24, 2016 – The St. Louis Fed is ranked the No. 1 Top Workplace in St. Louis (large-employer category) by the St. Louis Post-Dispatch. The Bank’s culture, work-life offerings and employee-led resource groups are featured.



Oct. 19, 2016 – The Bank’s Econ Lowdown teacher portal crosses the 1 million threshold in online enrollments for K-12 educational courses and videos on economics and financial literacy.



2017



Sept. 9, 2017 – The St. Louis Fed’s signature economic database FRED® (Federal Reserve Economic Data) tops the 500,000 mark in data series. The database began in 1991 as a dial-up electronic bulletin board with 30 data series. Today, its more than half a million data series are accessed online by users worldwide.

Dec. 3, 2017 – The Louisville Branch of the St. Louis Fed marks its centennial. Historic photos are available in FRASER. The Memphis Branch marks its centennial in September 2018, and the Little Rock Branch celebrates its centennial in January 2019.



Left: Kathy Paese, executive vice president of the Treasury division at the St. Louis Fed and Treasury Relations and Support Office product manager, addresses her Treasury division colleagues at an employee event.



Middle: High schoolers compete in the trading pit exhibit at the Economy Museum, inside the St. Louis Fed.



Right: Mary Suiter, assistant vice president, directs the Economic Education department at the St. Louis Fed, which provides free economic education and financial literacy materials for use in K-12 and college classrooms and beyond.

Our People. Our Work.

The Federal Reserve Bank of St. Louis promotes a healthy economy and financial stability. How do we do it? The following figures from the past year offer a window into the St. Louis Fed through our people and work.

All numbers are as of Dec. 31, 2017, unless otherwise noted.



Above: Serving on the St. Louis Fed's student board of directors gives high school seniors an opportunity to learn about the U.S. central bank.

Top right: Meagan Bonnell, senior learning tech designer in the Center for Learning Innovation, joins other employees at the Bank's annual town hall meeting.

Bottom: St. Louis Fed employees support the city's PrideFest event celebrating the LGBTQ+ community.

OUR PEOPLE

1,373

staff members, the majority located at the District's headquarters in St. Louis, with branches in Little Rock, Louisville and Memphis.

100

perfect score for a second straight year in the Human Rights Campaign's Best Places to Work Corporate Equality Index, a national benchmarking tool for policies and practices pertinent to LGBTQ+ employees.

16

new students appointed to the St. Louis Fed's student board of directors.

31

college and seven high school students served as interns for the Bank.

#10

ranking by DiversityInc in its 2017 Top Regional Companies list.





Left: Mike Renfro, senior vice president and general auditor, volunteers as an employee ambassador in the St. Louis Fed's Economy Museum. Right: Mark Bayles, senior economic education specialist, leads students in using FRED's economic forecasting game FREDcast®, which allows players to compete in predicting the value of economic variables.

SAFETY AND SOUNDNESS

125

state member banks and 485 bank and savings and loan holding companies supervised by the St. Louis Fed.

1.13 billion

currency notes inspected and deemed fit for circulation.

3,041

suspect counterfeit notes withdrawn from circulation.

\$36.5 million¹

in improper payments identified by the St. Louis Fed in its role as fiscal agent to the U.S. Treasury and its Do Not Pay program, helping federal agencies eliminate payment error, waste, fraud and abuse.

29,481

hours spent by internal auditors reviewing St. Louis Fed operations.

ECONOMIC RESEARCH

35 million

page views of the St. Louis Fed's research site by people in 192 countries.

2.5 million

economic research items from around the world that anyone can access for free via IDEAS.²

507,627

data series in Federal Reserve Economic Data, better known as FRED®—the St. Louis Fed's economic database—available online.

128,282

page views of GeoFRED®, our geographical economic data tool that allows users to transform data in FRED to create and share maps by geographic category and time frame.

566,993

items in FRASER®, the St. Louis Fed's publicly available, historical digital library, with materials dating from 1791 to 2017.

Top 5%

ranking for James Bullard on RePEc in a number of categories, including the h-index.³

#7

ranking in research productivity for the St. Louis Fed among all research departments at central banks worldwide.

#37 among all U.S. research institutions.

#69 among all research institutions worldwide.

¹ Total is for 2017 federal government fiscal year.

² IDEAS is the world's largest bibliographic database dedicated to economics. This service, provided by RePEc (Research Papers in Economics at <https://ideas.repec.org>), is hosted by the St. Louis Fed's Research division.

³ The h-index, or Hirsch index, is a compound measure of publications and citations used to highlight research productivity.



Left: Kim Thomas, automation specialist in Support Services, and her mother participate in Bring Your Parents to Work Day.

Right: Economist Paulina Restrepo-Echavarría records a Timely Topics podcast about her research on the propensity of oil-rich developing countries to default on their sovereign debt.



PUBLIC OUTREACH

20,069

people attended our public dialogue and other outreach events in St. Louis, Little Rock, Louisville and Memphis.

2,705

students and their chaperones from 75 area schools visited the St. Louis Fed's Economy Museum.

18,080

bankers, regulators and other industry participants joined call-in and in-person St. Louis Fed information sessions held on timely financial and regulatory developments.

485,000+

students were reached through educators who attended St. Louis Fed economic education programs.

1.2 million

student enrollments in the St. Louis Fed's Econ Lowdown online economic education and financial literacy courses and videos.

84%

of inner-city, majority-minority and all-girls high schools across the Fed's Eighth District accessed the St. Louis Fed's financial literacy programs.

10

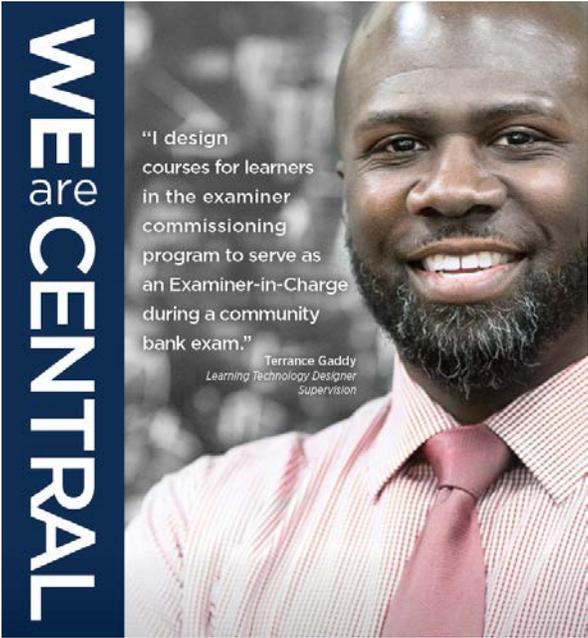
awards for Econ Lowdown.

Two Excellence in Financial Literacy Education Awards from the Institute for Financial Literacy.

Eight Curriculum Awards from the National Association of Economic Educators.

9,933

people signed up for 41 workshops, conferences, forums and other events led by our Community Development department to promote economic resilience and mobility for low- and moderate-income and underserved households and communities across the District.



WE are CENTRAL

"I design courses for learners in the examiner commissioning program to serve as an Examiner-in-Charge during a community bank exam."

Terrance Gaddy
Learning Technology Designer
Supervision

COMMUNICATIONS AND SOCIAL MEDIA

8,758

LinkedIn followers and 7,769 Facebook followers.

238,532

page views for The FRED Blog.

76,855

followers on Twitter handle @stlouisfed.

Listed as one of TraderLife's 10 Trading Twitter Accounts to Follow in 2018.

Named one of TheStreet's 15 of the Best Finance Twitter Accounts to Follow.

Listed as one of Business Insider's 125 Most Important Finance People You Have to Follow on Twitter.

437,361

page views for On the Economy blog.

Ranked #19 in Top 75 Bank Blogs by Feedspot.



Top Left: Terrance Gaddy, learning technology designer in Supervision, explains his work as part of the Bank's We Are Central campaign, which educates the public about the Fed.

Top Right: Bank volunteers pack supplies at an area food bank.

Bottom Right: Cassie Blackwell, vice president in the Treasury division, and Luis Lentijo, senior recruiter in Human Resources, lend their support to the Bank's Ally campaign, which is focused on supporting a diverse and inclusive culture.



CORPORATE CITIZENSHIP

119,340

pounds of cash shredded and composted after being deemed no longer fit for circulation.

\$38,941

raised by employees to help support food banks and feeding programs for the needy in the St. Louis area.

149

tons of waste recycled or composted—saved from landfills.

9,861

school items donated by employees to the Back-to-School Supply Drive to benefit area students.

\$243,142

donated by Bank employees to local United Way campaigns.

37

Bank employees volunteered for Teach Children to Save Day at elementary schools in the St. Louis area.



Our Leaders. Our Advisers.

The Federal Reserve’s decentralized structure—the Board of Governors, the Federal Open Market Committee and 12 Reserve banks—ensures that the economic conditions of communities and industries across the country are taken into account when deciding monetary policy. Members of our boards of directors and advisory councils inform the work of the St. Louis Fed by representing the diverse perspectives of Main Street across the Eighth Federal Reserve District.

The following pages list our board members from each of the four zones of the Eighth District: St. Louis; Little Rock, Ark.; Louisville, Ky.; and Memphis, Tenn., which is celebrating its centennial year. Members of our advisory councils are also listed, as are retirees from our boards and our advisory councils, members of the Bank’s Management Committee, and officers of the Bank.

All lists are current as of March 1, 2018.

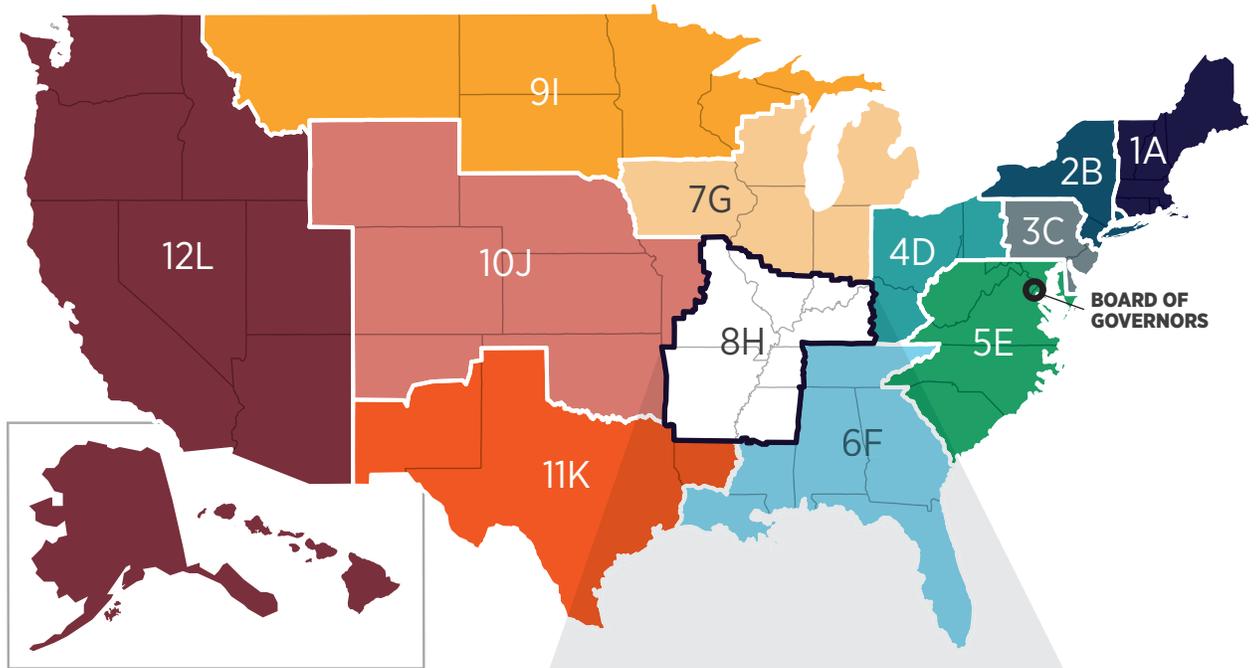


Top: Jim McKelvey, a member of the St. Louis Fed board of directors, records a video for the Voices of the Fed campaign, aimed at educating the public about board members’ roles in providing a Main Street view to the Bank.

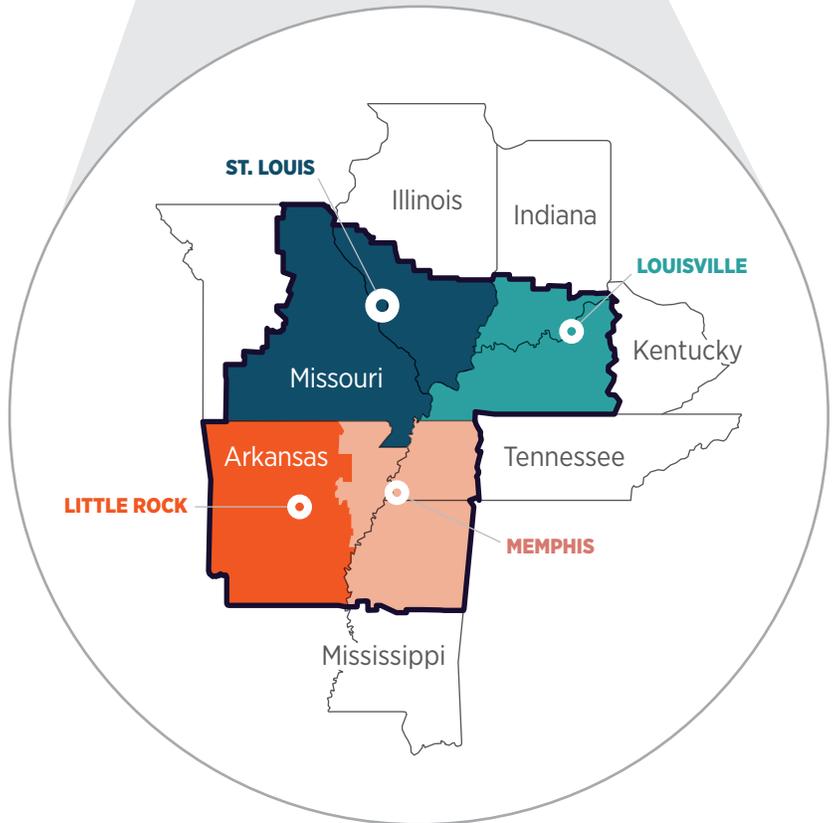
Middle: St. Louis Fed President James Bullard, First Vice President and COO David Sapenaro and other Bank leaders, together with Little Rock Branch board members, tour the Baldor Technology Center at the University of Arkansas—Fort Smith as part of an outreach tour to the southern part of the Fed’s Eighth District.

Bottom: Sadiqa Reynolds (left), a member of the Louisville Branch board of directors; Ford employee John Bell (middle); and James Bullard (right) tour the Ford assembly plant in Louisville, Ky., as part of an outreach tour to the eastern part of the Fed’s Eighth District.

The Eighth Federal Reserve District



The Eighth Federal Reserve District is composed of four zones, each of which is centered around one of the four cities where our offices are located: St. Louis (headquarters), Little Rock, Louisville and Memphis. Nearly 15 million people live in the Eighth Federal Reserve District.



St. Louis

BOARD OF DIRECTORS



CHAIR
Kathleen M. Mazzarella
Chairman, President and CEO,
Graybar Electric Co. Inc.
St. Louis



DEPUTY CHAIR
Suzanne Sitherwood
President and CEO, Spire Inc.
St. Louis



Patricia L. Clarke
President and CEO, First National
Bank of Raymond
Raymond, Ill.



Alice K. Houston
CEO, HJI Supply Chain Solutions
Louisville, Ky.



D. Bryan Jordan
Chairman, President and CEO,
First Horizon National Corp.
Memphis, Tenn.



Daniel J. Ludeman
President and CEO, Concordance
Academy of Leadership
St. Louis



Elizabeth G. McCoy
President and CEO, Planters Bank
Hopkinsville, Ky.



James M. McKelvey Jr.
Founder and CEO, Invisibly
St. Louis



John N. Roberts III
President and CEO, J.B. Hunt
Transport Services Inc.
Lowell, Ark.



Little Rock Branch

BOARD OF DIRECTORS



CHAIR
Millie A. Ward
President, Stone Ward
Little Rock, Ark.



R. Andrew Clyde
President and CEO,
Murphy USA Inc.
El Dorado, Ark.



Keith Glover
President and CEO, Producers
Rice Mill Inc.
Stuttgart, Ark.



Vickie D. Judy
CFO, America's Car-Mart Inc.
Bentonville, Ark.



Jeff Lynch
President and CEO, Eagle
Bank and Trust
Little Rock, Ark.



Robert Martinez
Owner, Rancho La Esperanza
De Queen, Ark.



Karama Neal
COO, Southern Bancorp
Community Partners
Little Rock, Ark.



REGIONAL EXECUTIVE

Robert Hopkins
Senior Vice President, Little Rock Branch
Federal Reserve Bank of St. Louis



Louisville Branch

BOARD OF DIRECTORS



CHAIR

Susan E. Parsons

CFO, Secretary and Treasurer,
Koch Enterprises Inc.
Evansville, Ind.



Patrick J. Glotzbach

CEO, The New Washington
State Bank
Charlestown, Ind.



Emerson M. Goodwin

Corporate Regional Director,
KentuckyCare
Paducah, Ky.



Ben Reno-Weber

Co-Founder and Chief Storyteller,
MobileServe
Louisville, Ky.



Sadiqa N. Reynolds

President and CEO, Louisville
Urban League
Louisville, Ky.



Randy W. Schumaker

Former President and Chief
Management Officer,
Logan Aluminum Inc.
Russellville, Ky.



Blake B. Willoughby

Chairman and President, First
Breckinridge Bancshares Inc.
Irvington, Ky.



REGIONAL EXECUTIVE

Nikki Jackson

Senior Vice President, Louisville Branch
Federal Reserve Bank of St. Louis



STEAMER
BELLE of LOUISVILLE
PORT OF LOUISVILLE

Memphis Branch

BOARD OF DIRECTORS



CHAIR
Eric D. Robertson
President, Community LIFT Corp.
Memphis, Tenn.



Michael E. Cary
President and CEO, Carroll
Bank and Trust
Huntingdon, Tenn.



David T. Cochran Jr.
Partner, CoCo Planting Co.
Avon, Miss.



J. Brice Fletcher
Chairman, First National Bank
of Eastern Arkansas
Forrest City, Ark.



Julianne Goodwin
Owner, Express Employment
Professionals
Tupelo, Miss.



Carolyn Chism Hardy
President and CEO, Chism Hardy
Investments LLC
Collierville, Tenn.



Michael Ugwueke
President and CEO, Methodist
Le Bonheur Healthcare
Memphis, Tenn.



REGIONAL EXECUTIVE

Douglas Scarboro
Senior Vice President, Memphis Branch
Federal Reserve Bank of St. Louis

Memphis Branch Centennial

The Memphis Branch of the Federal Reserve Bank of St. Louis represents 75 counties in western Tennessee, eastern Arkansas and northern Mississippi. Its work began on a seasonal basis, as the Branch provided discount-window loans and other services to area member banks during the cotton season. In 1918, it was upgraded to a full-service branch, officially opening its doors as the second branch of the St. Louis Fed on Sept. 2 of that year.

The city of Memphis has historically served as a hub for commerce and trade regionally, nationally and internationally. A century after its founding, the Memphis Branch continues to focus on the economic needs of the Midsouth.

Today, Memphis Branch staff are responsible for bank supervision, cash services, community development and economic education. The Branch also facilitates the exchange of economic information to assist in monetary policymaking through its seven-member board of directors, one-on-one meetings, hosting of events and representation from local business leaders on our four industry councils.

To learn more about the Memphis Branch, visit stlouisfed.org/memphis.



Left: This building at Jefferson Avenue and Third Street, shown under construction in 1928, housed the Memphis Branch from 1929 to 1972.

Top: Douglas Scarboro (left), senior vice president and regional executive, leads the Memphis Branch of the St. Louis Fed. The Branch puts a priority on outreach to business and community leaders in the Memphis Zone.

Above: Surrounded by award-winning landscaping and sculptures, the Memphis Branch's current building at 200 North Main Street opened in 1972.

Industry Councils

Council members represent a wide range of Eighth District industries and businesses and periodically report on economic conditions to help inform monetary policy deliberations.

Agribusiness Council

Meredith B. Allen

President and CEO, Staple Cotton Cooperative Association
Greenwood, Miss.

John Rodgers Brashier

Vice President, Consolidated Catfish Producers LLC
Isola, Miss.

Cynthia Edwards

Deputy Secretary, Arkansas Agriculture Department
Little Rock, Ark.

Sam J. Fiorello

COO and Senior Vice President, Donald Danforth Plant Science Center; President, BRDG Park
St. Louis

Edward O. Fryar Jr.

CEO and Founder, Ozark Mountain Poultry
Rogers, Ark.

Dana Huber

Vice President, Marketing/Public Relations, Huber's Orchard, Winery & Vineyards, and Starlight Distillery
Borden, Ind.

Wayne Hunt

President, H&R Agri-Power
Hopkinsville, Ky.

Jennifer H. James

Owner, H&J Land Co.
Newport, Ark.

Brett Norman

Director, Sales and Marketing, Mavrx Inc.
Memphis, Tenn.

Chris Novak

CEO, National Corn Growers Association
St. Louis

Tania Seger

Vice President of Finance, North American Commercial Operations, Monsanto Co.
St. Louis

Health Care Council

Rhamy Alejeal

Owner and CEO, Poplar Financial
Memphis, Tenn.

Carla Balch

President and COO, TransMed Systems
Memphis, Tenn.

Mike Castellano

CEO, Esse Health
St. Louis

Cynthia Crone

Research Faculty Member, University of Arkansas for Medical Sciences, College of Public Health, Department of Health Policy and Management
Little Rock, Ark.

June McAllister Fowler

Senior Vice President, Communications and Marketing, BJC HealthCare
St. Louis

Diana Han

Chief Medical Officer, GE Appliances, a Haier company
Louisville, Ky.

Lisa M. Klesges

Professor of Epidemiology, University of Memphis
Memphis, Tenn.

Susan L. Lang

CEO, HooPayz.com
St. Louis

Jason M. Little

President and CEO, Baptist Memorial Health Care Corp.
Memphis, Tenn.

Brandy N. Kelly Pryor

Director, Center for Health Equity, Louisville Metro Department of Public Health and Wellness
Louisville, Ky.

Robert "Bo" Ryall

President and CEO, Arkansas Hospital Association
Little Rock, Ark.

Alan Wheatley

President, Retail Segment, Humana
Louisville, Ky.

Real Estate Council

William “Bill” Burns

Broker/Owner, RE/MAX FIRST
Jeffersonville, Ind.

Ray Dillon

Former President and CEO, Deltic Timber Corp.
Little Rock, Ark.

Martin Edwards Jr.

President, Edwards Management Inc., REALTORS®
Memphis, Tenn.

Lisa C. Ferrell

Founder, President and CEO, North Bluffs Development Corp.
North Little Rock, Ark.

J.T. Ferstl

President, Ferstl Valuation Services
Little Rock, Ark.

David L. Hardy

Managing Director, CBRE Inc.
Louisville, Ky.

Janet Horlacher

President, Janet McAfee Inc.
St. Louis

Larry K. Jensen

President and CEO, Cushman & Wakefield | Commercial
Advisors
Memphis, Tenn.

Greg M. Joslin

Senior Broker, Colliers International Arkansas
Little Rock, Ark.

Joshua Poag

President and CEO, Poag Shopping Centers LLC
Memphis, Tenn.

Lester T. Sanders

Realtor, Semonin REALTORS®
Louisville, Ky.

Madison C. Silvert

President, The Malcolm Bryant Corp.
Owensboro, Ky.

Transportation Council

Bryan Day

Executive Director, Little Rock Port Authority
Little Rock, Ark.

Michael D. Garriga

Executive Director of State Government Affairs, BNSF Railway
Memphis, Tenn.

Rhonda Hamm-Niebruegge

Director of Airports, St. Louis Lambert International Airport
St. Louis

Bertram C. “Bert” Hodge

General Manager, Heritage Ford
Corydon, Ind.

Stephanie Ivey

Director, Intermodal Freight Transportation Institute,
University of Memphis
Memphis, Tenn.

David Keach

President and CEO, Gateway Truck & Refrigeration
Collinsville, Ill.

Mike McCarthy

President, Terminal Railroad Association of St. Louis
St. Louis

Judy R. McReynolds

Chairman, President and CEO, ArcBest Corp.
Fort Smith, Ark.

Toks Omishakin

Deputy Commissioner and Chief of Environment and Planning,
Tennessee Department of Transportation
Nashville, Tenn.

Brent Stottlemire

CFO, UniGroup Inc.
Fenton, Mo.

David Tatman

Executive Director, Kentucky Automotive Industry Association;
Associate Vice President, Advanced Manufacturing, Western
Kentucky University
Rockfield, Ky.

Community Depository Institutions Advisory Council

The members meet twice a year to advise the St. Louis Fed's president on the credit, banking and economic conditions facing their institutions and communities. The council's chair also meets twice a year in Washington, D.C., with the Federal Reserve chair and governors.

Ann Cowley Wells, Chair

Chair and Co-CEO, Commonwealth Bank and Trust Co.
Louisville, Ky.

Kevin Beckemeyer

President and CEO, Legence Bank
Eldorado, Ill.

Russell "Rusty" Bennett

President and CEO, First National Bank of Clarksdale
Clarksdale, Miss.

David Bentele

President and CEO, Citizens National Bank of Greater St. Louis
Maplewood, Mo.

Shaun Burke

President and CEO, Guaranty Bank
Springfield, Mo.

David Doedtman

President and CEO, Washington Savings Bank
Effingham, Ill.

Craig Esrael

President and CEO, First South Financial Credit Union
Bartlett, Tenn.

Roy Molitor "Mott" Ford Jr.

Vice Chairman and CEO, Commercial Bank and Trust Co.
Paris, Tenn.

Karen Harbin

President and CEO, Commonwealth Credit Union
Frankfort, Ky.

Gary Hudson

President and CEO, Farmers and Merchants Bank
Stuttgart, Ark.

Margaret "Marnie" Oldner

CEO, Stone Bank
Mountain View, Ark.

Marvin Veatch

President and CEO, Jackson County Bank
Seymour, Ind.

Community Development Advisory Council

The council keeps the St. Louis Fed's president and staff informed about community development in the Eighth District and suggests ways for the Bank to support local development efforts.

Ivye Allen

President, Foundation for the Mid South
Jackson, Miss.

Arlisa Armstrong

Area Director, Rural Development, United States Department of
Agriculture (USDA)
Jackson, Tenn.

Jay Bassett

Division Chief, Governor's Dislocated Worker Task Force,
Arkansas Department of Workforce Services
Little Rock, Ark.

Bryce Butler

Managing Director, Access Ventures
Louisville, Ky.

Timothy Lampkin

CEO, Higher Purpose Co.; Co-Founder, Capway
Clarksdale, Miss.

Debra Moore

Director of Administration, St. Clair County, Ill.
Belleville, Ill.

Amanda Payne

Assistant Vice President, CRA; Fair Lending Officer,
Independence Bank
Owensboro, Ky.

Kenneth S. Robinson

President and CEO, United Way of the Mid-South
Memphis, Tenn.

Margaret S. Sherraden

Founders Professor of Social Work, University of
Missouri-St. Louis; Research Professor, Washington
University in St. Louis
St. Louis

Robert J. Wasserman

Senior Vice President, U.S. Bancorp Community
Development Corp.
St. Louis

Amy Whitehead

Director, Community Development Institute and
Center for Community and Economic Development,
University of Central Arkansas
Conway, Ark.

Cassandra Williams

Vice President and Regional Branch Administrator,
Hope Federal Credit Union
Memphis, Tenn.

Federal Advisory Council Representative

The council is composed of one representative from each of the 12 Federal Reserve districts. Members confer with the Fed's Board of Governors at least four times a year on economic and banking developments and make recommendations on Fed System activities.

Ronald J. Kruszewski

Chairman and CEO, Stifel Financial Corp.

St. Louis

Retirees

We express our gratitude to those members of the boards of directors and of our advisory councils who retired over the previous year.

From the Boards of Directors

St. Louis

Susan S. Stephenson

Little Rock

Ray C. Dillon

Charles G. Morgan Jr.

Louisville

Malcolm Bryant

Mary K. Moseley

Memphis

Roy Molitor Ford Jr.

From the Industry Councils

Agribusiness

Ted Longacre

Real Estate

Mark A. Bentley

Transportation

Mark L. McCloud

From the Community Depository Institutions Advisory Council

Jeffrey Dean Agee

Jeff Lynch

Elizabeth G. McCoy

Eric R. Olinger

From the Community Development Advisory Council

Rex Duncan

Andy Fraizer

Christie McCravy

Martie North

Deborah Temple

Bank Management Committee



James Bullard
President and CEO



David A. Sapenaro
First Vice President and COO



Karl W. Ashman
Executive Vice President,
Administration and Payments



Karen L. Branding
Senior Vice President,
Public Affairs



Cletus C. Coughlin
Senior Vice President and Chief
of Staff to the President



Roy A. Hendin
Senior Vice President, General
Counsel and Secretary



Nikki R. Jackson
Senior Vice President and
Regional Executive,
Louisville Branch



Kathleen O'Neill Paese
Executive Vice President,
Treasury; and Treasury
Relations and Support Office
Product Manager



Julie L. Stackhouse
Executive Vice President,
Supervision, Credit, Community
Development and the Center
for Learning Innovation



Christopher J. Waller
Executive Vice President and
Director of Research

Bank Officers

James Bullard

President and CEO

David A. Sapenaro

First Vice President and COO

Karl W. Ashman

Executive Vice President

Kathleen O'Neill Paese

Executive Vice President

Julie L. Stackhouse

Executive Vice President

Christopher J. Waller

Executive Vice President

Karen L. Branding

Senior Vice President

Cletus C. Coughlin

Senior Vice President

Roy A. Hendin

Senior Vice President

Robert A. Hopkins

Senior Vice President
and Regional Executive

Nikki R. Jackson

Senior Vice President
and Regional Executive

B. Ravikumar

Senior Vice President

Michael D. Renfro

Senior Vice President

Douglas G. Scarboro

Senior Vice President
and Regional Executive

Matthew W. Torbett

Senior Vice President

Jonathan C. Basden

Group Vice President

Timothy A. Bosch

Group Vice President

Anna M. Helmering Hart

Group Vice President

Amy C. Hileman

Group Vice President

Michael J. Mueller

Group Vice President

James A. Price

Group Vice President

David C. Wheelock

Group Vice President

David Andolfatto

Vice President

Cassie R. Blackwell

Vice President

Adam L. Brown

Vice President

Timothy C. Brown

Vice President

Marilyn K. Corona

Vice President

Kent T. Eckert

Vice President

Carlos Garriga

Vice President

Timothy R. Heckler

Vice President

Debra E. Johnson

Vice President

Katrina L. Stierholz

Vice President

Donny J. Trankler

Vice President

Scott M. Trilling

Vice President

James L. Warren

Vice President

Carl D. White II

Vice President

Terri A. Aly

Assistant Vice President

Robyn A. Arnold

Assistant Vice President

Jane Anne Batjer

Assistant Vice President

Alexander Baur

Assistant Vice President

Jennifer M. Beatty

Assistant Vice President

Diane E. Berry
Assistant Vice President

Heidi L. Beyer
Assistant Vice President

Susan M. Black
Assistant Vice President

Ray J. Boshara
Assistant Vice President

Winchell S. Carroll Jr.
Assistant Vice President

Christopher D. Chalfant
Assistant Vice President

Daniel P. Davis
Assistant Vice President

Jill Schlueter Dorries
Assistant Vice President

William D. Dupor
Assistant Vice President

William R. Emmons
Assistant Vice President

Kathy A. Freeman
Assistant Vice President

James W. Fuchs
Assistant Vice President

Joseph A. Gambino
Assistant Vice President

Patricia M. Goessling
Assistant Vice President

Stephen P. Greene
Assistant Vice President

Tamara S. Grimm
Assistant Vice President

Lena Harness
Assistant Vice President

Karen L. Harper
Assistant Vice President

Jennifer A. Haynes
Assistant Vice President

Kevin L. Henry
Assistant Vice President

Cathryn L. Hohl
Assistant Vice President

Terri L. Kirchhofer
Assistant Vice President

Catherine A. Kusmer
Assistant Vice President

Maurice D. Mahone
Assistant Vice President

Carolann M. Marker
Assistant Vice President

Jackie S. Martin
Assistant Vice President

Michael W. McCracken
Assistant Vice President

Christopher J. Neely
Assistant Vice President

Arthur A. North II
Assistant Vice President

Michael T. Owyang
Assistant Vice President

Christopher M. Pfeiffer
Assistant Vice President

Jennifer L. Robinson
Assistant Vice President

Lili Saint Christopher
Assistant Vice President

Craig E. Schaefer
Assistant Vice President

Abby L. Schafers
Assistant Vice President

Kathy A. Schildknecht
Assistant Vice President

Philip G. Schlueter
Assistant Vice President

Amy B. Simpkins
Assistant Vice President

Scott B. Smith
Assistant Vice President

Yvonne S. Sparks
Assistant Vice President

Kristina L. Stierholz
Assistant Vice President

Rebecca M. Stoltz
Assistant Vice President

Mary C. Suiter
Assistant Vice President

Brenda Torres
Assistant Vice President

Bryan B. Underwood
Assistant Vice President

Yi Wen
Assistant Vice President

Ranada Y. Williams
Assistant Vice President

Dean A. Woolcott
Assistant Vice President

Jeffrey S. Wright
Assistant Vice President

Christian M. Zimmermann
Assistant Vice President

Dana J. Zydlo
Assistant Vice President

Subhayu Bandyopadhyay
Officer

Nicholas C. Clark
Officer

Anthony Grantham
Officer

Douglas B. Kerr
Officer

Kevin L. Kliesen
Officer

Michael T. Milchanowski
Officer

Alexander Monge-Naranjo
Officer

Juan M. Sánchez
Officer

Guillaume A. Vandenbroucke
Officer

Jeffrey M. Zove
Officer

Have you met FRED?



ECONOMIC DATA | ST. LOUIS FED

FRED® (Federal Reserve Economic Data) is the signature economic database of the St. Louis Fed. It houses more than 500,000 economic and socioeconomic data series from regional, national and international sources. Find FRED at fred.stlouisfed.org. The FRED app is also available for download for iPhone and Android devices.

Into history? Explore our digital library.



DISCOVER ECONOMIC HISTORY | ST. LOUIS FED

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“I’m focused on where we’re going in the years ahead, where the economic recovery is rooting, where the debate on monetary policy will lead us and what the right policy decisions will be in a new era. ... It’s going to be a fascinating journey.”

— James Bullard, President and CEO