This year, the Federal Reserve commemorates its 100th anniversary, and I will complete my more-than-three decades of service to this remarkable institution. It is sometimes hard for me to fathom that I have spent more than half my life in the Federal Reserve System, and roughly one-third of its existence! In many ways, I have grown up with this institution. When I reflect back on those 30 years, I am struck by the many changes that I have witnessed. The Federal Reserve has adapted and evolved. It is very much a learning organization. I don't have time today to go through all the changes I have seen over this 30-year period, so tonight I will share my reflections on some of the changes that have occurred in Federal Reserve operations. Then I will walk through some of the changes resulting from the financial crisis and severe economic recession. I will wrap up with thoughts on the collaborative spirit of the Federal Reserve. Before I start, I need to give the standard disclaimer that these are my views alone and not necessarily those of others in the Federal Reserve System.

On December 23, 1913, President Woodrow Wilson signed the Federal Reserve Act, which created the nation's central bank and set the stage for the establishment of 12 Reserve Banks, including one in
Cleveland. My Federal Reserve District covers all of Ohio, western Pennsylvania, eastern Kentucky, and the northern panhandle of West Virginia. The Federal Reserve was purposefully designed as a decentralized organization, with both public and private components and broad geographic representation. Our congressional founders recognized that the central bank needed to reflect the diversity of the nation while protecting decisions from political interference.

So what does a Federal Reserve Bank do? The Federal Reserve Banks cooperate with the Board of Governors in Washington, DC, in supervising commercial banks in our respective regions. We also conduct research on national and regional economic conditions; we provide financial services to banks and the US Treasury; and we are a resource for people and organizations that are involved in community and economic development. A Reserve Bank is a multifaceted operation with many moving parts, and over the past three decades or so, I have witnessed many changes and many accomplishments at the Federal Reserve Bank of Cleveland.

When I started at the Bank, most of our employees were involved in operational activities—that is, processing checks, cash, and savings bonds. Cash processing remains a core function at the Federal Reserve Bank of Cleveland, but we no longer process paper checks or Treasury bonds.

We once processed 11 million paper checks every night in my Reserve Bank District. That means we took in trucks full of checks, ran them through high-speed sorting machines, debited and credited the appropriate financial institutions, and then sent those checks to their ultimate destinations—it was a really large operation. But today the number of paper checks we process is zero. The Federal Reserve now primarily processes checks electronically. Other forms of payment have become popular, and Americans have simply stopped writing paper checks like they used to. Technological innovations have also produced new efficiencies, allowing Federal Reserve Banks to consolidate many operations. Those trends are a large part of the reason why our employee base at the Federal Reserve Bank of Cleveland has shrunk from 1,600 people when I took over as president to about 900 today. In fact, across the whole System, about 4,000 fewer people work at Reserve Banks today compared with 2003. Like the rest of the world, we at the Federal Reserve have harnessed the power of technology to become more efficient.

As the fiscal agent to the US Treasury, we are also using technology to make payments to and from government agencies more efficient. At the Federal Reserve Bank of Cleveland, we have developed a website called Pay.gov where the public can make payments to 175 agencies. In 2013, we processed 121 million transactions valued at more than $115 billion. If you have made a payment on your federal student loan recently, one of our Pay.gov employees processed that payment for you.

Advances in technology have had a tremendous positive impact on what we do at the Federal Reserve and how we do our work. Now let me turn to some of the changes that have occurred as a result of the financial crisis and severe economic recession.

In many ways, the 2008 financial crisis resembled a classic financial panic. A panic happens when investors and the public lose confidence in key financial institutions and markets. One of the first actions we took at the Federal Reserve to restore confidence in the banking system was to do what we were created to do—to serve as a lender of last resort. At the Federal Reserve Bank of Cleveland, lending to financial institutions in my District in 2008 totaled almost $100 billion. To give you an idea of how big that number is, in 2006 when
financial markets were more normal, our lending total was less than $2 billion.\(^2\) Put another way, we needed to provide 50 times the usual amount of liquidity to respond to the 2008 financial crisis.

Another move we made to restore confidence in financial markets was to conduct a series of stress tests on the 19 largest financial institutions. Three of them are headquartered in my District. Stress tests put institutions through severe scenarios to see if they would have enough capital should housing prices suddenly plummet or the unemployment rate spike. Letting the public know that most banks had enough capital and making capital available through the government for those that didn’t was helpful in restoring public confidence in the banking system.

At the Federal Reserve Bank of Cleveland and across the Federal Reserve System, we now conduct stress tests every year on the largest institutions, and we help smaller banks conduct their own. We also lead the banks we supervise in annual capital planning exercises to ensure that they have enough capital to handle an economic shock. Another benefit of stress tests is they help ensure that banks have sufficient capital to continue to provide loans to creditworthy customers during a downturn. We learned during the crisis that some banks stopped lending in order to shrink assets to improve their capital ratios, which only aggravated the tight-credit situation. We also make public the results of those stress tests on the largest institutions. It is obviously useful for banks themselves to know they can weather a storm, but it is equally useful for the public to know that the banks are well capitalized. Again, it helps promote confidence.

An important feature of stress testing is the comparison of risks across banks. For example, we might look at levels of commercial real estate holdings across banks. We want to identify risks that are evident in multiple banks and which could have a larger impact on the financial system. The Federal Reserve has recognized the importance of monitoring banks as a group and not just as individual institutions. That is why, today, my staff at the Federal Reserve Bank of Cleveland includes a large number of financial system supervisors whose job goes beyond assessing the condition of individual banks. It is also why my staff has taken it upon themselves to better understand regional banks—what you might think of as mid-sized institutions. Understanding the proper level of regulation and supervision for regional banks is important given the relationships and common vulnerabilities among them.

These changes represent significant progress in the Federal Reserve’s approach to supervision and regulation in the aftermath of the financial crisis. Quite appropriately, we have shifted from a focus on the safety and soundness of individual banks to the financial stability of the entire system.

Another area where the financial crisis, severe recession, and slow recovery have prompted changes at the Federal Reserve is in the conduct of monetary policy. The Federal Open Market Committee, or FOMC, is the Federal Reserve’s monetary policy body. It consists of the seven members of the Board of Governors in Washington and the 12 Federal Reserve Bank presidents. Right now, I happen to be the longest-serving Federal Reserve Bank president. Janet Yellen is the new chair of the FOMC. We meet eight times a year to review financial and economic conditions and determine appropriate monetary policy responses. At each meeting, we have to decide how to best achieve the mandate that Congress has given us to promote maximum employment and stable prices. Put another way, monetary policy is supposed to preserve the value of the dollar while cultivating an economy where there are enough jobs for everyone.
who wants one.

At each FOMC meeting, we begin with reports from the staff on financial market developments and on US and worldwide economic developments. Then each Reserve Bank president and each governor provides comments on business conditions and their economic outlook. This is called the economic “go-round.” Next, we turn to a discussion of possible monetary policy actions, the so-called policy go-round. We usually have a selection of policy alternatives to discuss. Each participant gives his or her view, and the meeting ends with a vote on the federal funds rate target.

Eleven years ago, my description of an FOMC meeting might have stopped right there. But things have grown a bit more complicated in the interim. In the uncertain aftermath of the financial crisis, recession, and slow recovery, achieving our inflation and employment objectives has become much more challenging.

Before the crisis, the main policy tool we voted on was the federal funds rate. By way of background, the federal funds rate influences a whole host of other interest rates. So when the federal funds rate goes down, car loans get cheaper, home mortgages decline, and even credit card rates may get less expensive, to name just a few. And that has a positive impact on the broader economy. When consumers can borrow at lower interest rates, they can afford to buy more goods and services, and the businesses that supply those goods and services can hire more people. And when more people are working, they have more money in their bank accounts and may be more likely to spend. More spending creates more jobs, and more jobs create more spending. The entire economy benefits in a virtuous circle of growth. The reverse happens when we raise the federal funds rate. So that is why targeting the federal funds rate for many, many years was an effective way for the Federal Reserve to fulfill its objectives.

But that ended in late 2008. With the economy on the brink of another depression, we lowered the federal funds rate to zero. It can’t go any lower than that, so when the economy needed further support we had to turn to unconventional tools. The most well-known of those tools is what we call large-scale asset purchases, or what you may know as Quantitative Easing, or QE. The goal of the asset purchase program is to maintain downward pressure on long-term interest rates. After the crisis, the Federal Reserve’s asset purchases have risen to unprecedented levels, although the purpose of the program is still to lower interest rates for consumers and businesses. Today we are in our third round of QE, and studies show that the asset purchases have succeeded in pushing down longer-term interest rates and have generally eased financial conditions.

Another tool we have turned to is what we call forward guidance. We are telling the public that we expect that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. Again, we had limited previous experience with forward guidance. Yet like our experience with large-scale asset purchases, this unconventional tool has also proven itself effective. It has helped convince the public that interest rates will remain low, just as we had hoped. Lenders are more willing to continue making loans at lower rates because they have confidence that interest rates will stay low, and businesses and consumers can make decisions with more certainty about the borrowing environment.

So those are two unconventional tools we are using to attain our objectives. Not only are they new to us in scale and scope, they are also new to the American public. Recognizing that, we have engaged in a parallel effort to help the public and financial markets understand why we are doing what we are doing. That is because the
effectiveness of monetary policy depends importantly on the public’s expectations of how policy will evolve.

So let me give some specific examples of how the Federal Reserve has tried to make clearer the link between our policy actions and developing economic conditions. In January 2012, the FOMC published a statement of longer-run goals and policy strategy. It was in that statement that we first announced that our inflation objective would be 2 percent. That was a big step—we had never before publicly announced a numerical goal for inflation. We also began publishing FOMC participants’ estimates of the longer-run normal unemployment rate. That way, people will know what we think of as maximum employment. Right now, the range is from 5.2 percent to 6 percent, but that is subject to revision over time.

Another way that we have enhanced communications around our objectives is by releasing FOMC participants’ forecasts for inflation, the unemployment rate, and economic growth. These forecasts also include projections of future federal funds rates that we see as most appropriate for achieving the Committee’s objectives. All of this information is included in our quarterly Summary of Economic Projections, which is posted on the Federal Reserve Board’s website.

So now, the public can see more transparently how the FOMC expects the economy to develop relative to its longer-run objectives. And forgive me for sounding like a late-night TV commercial, but wait—there’s more! The chair of the FOMC now takes questions at quarterly press conferences, another first. In a time when the use of unconventional tools could have ratcheted up uncertainty about monetary policy, these communications have instead delivered a much-needed dose of clarity to the public and financial markets.

Through all of these changes, what has impressed me the most has been the commitment of the people around the FOMC table to consistently come together on policy actions aimed at achieving our shared objectives. I would even venture to say that we could not have made as much progress as we have in getting people back to work and keeping prices stable without this commitment.

We arrive at each meeting with our own forecasts based on analysis by our own staffs. We have widely different backgrounds—you may have heard the old joke that it’s difficult to get two economists to agree on anything; well, at the FOMC you can add lawyers, former bankers, and bank examiners to that mix. We work hard to develop a policy action that the Committee can broadly support.

I don’t think I’m going out on a limb to say that the FOMC has always been a collegial group. What I can tell you for certain as an eyewitness for the past 11 years, however, is that the Committee under Ben Bernanke’s leadership took purposeful steps to strengthen its commitment to collaboration and consensus-building.

For example, at his first meeting as chairman in 2006, Ben Bernanke wanted to increase interactions among participants at the FOMC meeting, so he introduced what he called a “two-handed” intervention. Instead of raising just one hand to get the chair’s attention to be called on to give comments in the economic and policy go-rounds, you could raise both hands to signal that you wanted to ask a question of someone else at the table or to add a comment. Chairman Bernanke also started the practice of going last on the important policy go-round. He listened to everyone’s views around the table before laying out his own views and suggesting a way forward.

Hearing the diversity of views and interacting in this way around the table helps us reach better decisions. I draw this picture in contrast to the stereotypical portrayal of FOMC participants in the media. The
media is fond of classifying FOMC participants as the “hawks” who want to tighten policy and the “doves” who want more accommodation. I myself have been called a “centrist,” and it has been said that watching the center tends to give you a good sense of which way the Committee is leaning.

I have also never dissented at a meeting. But I want to point out that for all the headlines the dissenters grab, dissents are actually quite rare on the FOMC. In my 11 years serving on the Committee, only 11 of my 40 colleagues have dissented. To put it even more plainly, there have been 48 total dissenting votes since 2003 compared with about 1,000 votes supporting the consensus.

Overall, I think the Committee’s nearly unanimous voting record is extraordinary given everything we have gone through since the financial crisis, severe economic recession, and ensuing slow recovery. A less-collaborative FOMC may not have been able to move as aggressively or creatively to embrace the unconventional tools that proved vital in stabilizing the financial system and putting the economy on a path to recovery. It wasn’t uncommon in the thick of the crisis for any of us on the FOMC to receive a weekend phone call from Ben Bernanke asking us about our views. The collegial and respectful atmosphere of the FOMC allowed us to quickly process a range of different views and forecasts, and then move forward with a well-considered decision. You never know where the best ideas are going to come from, so you have to be open to hearing different perspectives. We do not have to look too far, unfortunately, to see examples of institutions that have failed to foster a collaborative atmosphere, with gridlock and standoffs the unfortunate consequence.

Now I would like you to think back to the opening of my remarks when I told you about the Federal Reserve’s origins. I noted that the Federal Reserve was designed to be decentralized so that different views could be heard and it would be protected from short-term political influence so the best long-term interests of the country could be pursued. I did not say that Congress forced us to embrace change and collaboration. Those words are not in the Federal Reserve Act, or in any subsequent legislation. But we do have the freedom to work together toward our objectives of getting Americans back to work and keeping prices stable. To me, that is the genius of the System.

Incidentally, Janet Yellen’s first meeting as chair of the FOMC will be next month. Though I will be a part of only two meetings under her leadership, I would wager that one thing she won’t change will be the commitment to building consensus and being open-minded in order to reach solutions that benefit the US economy.

So to sum up, today I have talked about some of the changes I have observed during my time at the Federal Reserve Bank of Cleveland. We have moved away from processing paper payments and enhanced the way we supervise the banking system. The Federal Reserve has adopted some unconventional monetary policy tools and we have changed the way we communicate. And the Federal Open Market Committee has embraced a consensus-building approach to achieving its objectives.

My career with the Federal Reserve has been extremely satisfying. My family immigrated to this country from Italy when I was five years old, and I remember helping my parents study for their citizenship test. I was fascinated by the way the American government was set up and the different responsibilities the various entities carried. From then on, I knew I wanted a career in public service. But as they say, “be careful what you wish for,” because I never in my wildest
dreams could have imagined participating in policymaking during this extraordinary time in our country’s economic history. It has been a humbling and inspiring experience. And I have felt enormously privileged to serve in this capacity. Thank you for the opportunity to speak with you tonight, and I look forward to taking your questions.

1. 21,459 vs. 17,724.

2. Lending in 2006 was through the Federal Reserve Bank of Cleveland’s discount window. The 2008 total encompasses $25.7 billion in Federal Reserve Bank of Cleveland discount window (primary credit) lending and $71.6 billion in loans through the Federal Reserve Bank of Cleveland under the Term Auction Facility, a Federal Reserve discount window lending program created in December 2007.

3. FOMC voters who served in an interim capacity (alternating for their president) are not included in this count.