Thank you for the nice introduction. But let me say that it feels strange to hear you describe my upcoming retirement. I guess I’m still coping with the reality that my 42-year tenure at the Federal Reserve Bank of Atlanta is about to end.

When I graduated from Virginia Tech back in the mid 1960s, I surprised my family and friends by taking a job with the Atlanta Fed. Before I left, some of my classmates responded with a gag gift: a green eyeshade, like one of those visors tellers used to wear in old movies like “It’s a Wonderful Life.”

Many of my college friends were going into more glamorous fields such as aerospace or computer design. And in their minds, I was condemned to life in a stodgy, backwater industry. In that era it was thought you would choose one place to work and stay for your entire career.

But, as it turned out, the financial services industry and the U.S. economy went through a revolution. Technology, competition, and a growing demand for information were catalysts for dramatic change. Certainly, this transformation made my career more interesting, and I expect even more change ahead.

So, you might ask, “What’s the big deal?” Well, I believe that banking’s shift from a low-tech field without competition into a dynamic industry had a profound impact on our personal and business lives and is a major part of our nation’s economic success. In describing these changes today, I’d also like to point to some potential concerns for the next generation of policymakers.

Changing how money is used

Let me begin by talking briefly about what bankers call their “back office operations”—the payment systems that most people take for granted. In the 1960s, if you peeked inside the Fed or most commercial banks, you would have seen endless bundles of checks and cash being counted and sorted by hand. As you can imagine, the process was inefficient.

Often, it took three to five days or longer for a check to clear. During the high interest rate 1970s, folks would use this lag to their advantage through a practice we called “remote disbursement.”

For instance, oil companies were notorious for writing big checks to pay for Gulf of Mexico oilfield leases, and they used checks drawn on small banks in remote places such as North Dakota. With interest rates at 15 percent, each day’s delay in payment for a $50 million check was worth about $20,000. So receivers of these large checks sometimes would buy a plane ticket for a courier to physically take the piece of paper across the country to speed collection.

As more powerful technology became available we got busy and worked to improve the process. Not long after I started at the Fed, we realized that one computer-driven check sorter could do the work of 40 or 50 manual processors. Automated check processing became a classic application for emerging computer technology. Also, instead of relying solely on trucks, the Fed began to charter airplanes to carry checks long distances overnight.

Computers that made check processing more efficient also enabled new electronic payment systems such as the automated clearinghouse, which facilitates transactions like direct deposit of payroll checks. During that period, credit cards also became more popular. With new methods of payment, the whiz kids of the banking industry began to think that a checkless—even a cashless—society was imminent.

But it was not to be—at least not then. By speeding the collection of paper checks, the Fed may have delayed conversion to electronics. Also, regulations allowed banks to demand presentment of a paper check for payment, which also discouraged change. So many banks and their customers did not enthusiastically embrace new technology. In 2000 Americans were still writing 42 billion checks. And with the proliferation of automated teller machines, banks continued to circulate more—not less—cash.

Finally, a few years ago, the volume of check payments began to decline about 4 percent per year—while electronic payments volume started to increase at double-digit rates. This transition continues as debit cards become more popular and businesses convert more and more check payments to electronic entries at the point of sale. You may have seen some of those new types of electronic conversions on your own bank statement.

Looking ahead, I believe there will always be a market for cash and checks. But today’s kids who are now growing up on video games no doubt will prefer the convenience and speed of electronic payments. As money changes hands in new and faster ways, we face an evolving risk of fraud and identity theft. So consumers must be vigilant in managing their accounts. And financial institutions must ensure that their payment systems operate on a solid foundation of trust, which is at the heart of a strong financial system.

The challenge of competition in banking

Technology has changed not only payment, but also the whole financial system and U.S. economy. Just think of the impact of the Internet and the advance of cellular and digital communications. This recent progress has helped businesses to work more efficiently and allowed emerging economies around the world to develop more quickly than we ever imagined. Globalization, by the way, has lessened the cost of many imported goods and boosted demand for U.S.-produced goods and services.
Along with technology, banking also has been transformed by competition. When I joined the Fed in the 1960s, banks were subject to rigid controls imposed by the states and Congress during the Great Depression. The idea was to maintain financial stability by restricting competition—both geographically and along product lines.

There were strict limits on the interest banks could pay on savings deposits, and banks could not pay interest on transaction accounts. These restrictions were thought to prevent ruinous interest rate competition. The task of managing a bank balance sheet was largely a matter of following supervisory guidelines—green eye shade kind of work.

Most states limited banks' ability to branch outside their home county. And in some places branching was entirely prohibited. With near monopoly power in their respective neighborhoods, banks had little incentive to grow or innovate. Hence, the cliché about bankers' hours of 3-6-3—take in money from savings accounts at 3 percent, lend it out at 6 percent, and hit the golf course by 3 o'clock.

In the 1980s, with high and rising inflation, the old regulatory framework began to unravel. Investment banks posed an early threat to the banking deposit franchise with the introduction of money market accounts, which some of you may remember.

To compete, banks issued large denomination certificates of deposit, which were not subject to interest rate ceilings, thus significantly increasing their costs. As restrictions on interest payments were lifted, more and more banks and thrifts got into trouble. We all remember the crisis in the savings and loan industry, which resulted in a bailout that was estimated to cost $175 billion.

The most difficult year in banking was 1988 when more than 200 banks failed. Earlier in that decade, I led our bank's supervision function. I remember setting up what we called 'the war room' at the Atlanta Fed. This was a place to deal with the complex closure of a family of banks in Tennessee. In the final days of that crisis, we worked around the clock to find a buyer for the largest of these banks—unsuccessfully, it turned out. We ended up just closing the bank and hoping this failure wouldn't lead to an old-fashioned bank panic.

The number of bank failures declined in the 1990s and has stayed low. Meanwhile, Congress continued to reform the regulatory framework. In turn, we saw the rise of well-capitalized megabanks leveraging technology to cut costs and offering diverse and sometimes complex new products in competition with investment banks and insurance companies. Now, it's often hard to tell the difference between banks and nonbanks.

This competitive fray directly benefits today's consumers and businesses, who enjoy lower-cost financial services, more choices and better access to capital. The growth of mutual funds has led to the rise of a new class of investors. Computers unleashed powerful innovations in credit scoring, and, with those new systems, some borrowers can qualify for a loan in minutes, if not seconds. Innovations in credit analysis and market segmentation have helped millions of Americans become homeowners.

If you want to buy a car, you can still get an old-fashioned two-year loan, but today you can also choose to make payments over eight or even 10 years. Along with traditional fixed-rate mortgages, we now have adjustable rate mortgages, interest-only mortgages, reverse amortization mortgages, and more. And in today's financial supermarket, we also can find home equity loans, mutual funds, hedge funds and countless other ways to borrow or invest. With advances in information technology and mathematical modeling, today's financial markets are better than ever at allocating risk to those with the greatest appetite for it.

Is all of this competition a good thing? All in all, I'd say the answer is yes. However, sometimes I fret about some of the implications of our global connectedness and the sheer size of some financial institutions and their new products. And I worry that some homeowners don't really understand their new and not-yet-fully-tested mortgages.

Overall, however, I believe our economy is much stronger and more resilient today because of the creative adjustments our financial sector has made in response to the sometimes painful challenges of competition.

The economy in transition
What are the lessons of technology, innovation and competition for our economy? During the mid-1960s, one-third of the jobs in the United States were in manufacturing, and during the decades after World War II, there was not much global competition.

Now, only one in nine U.S. jobs is in manufacturing, and most of the new factory jobs require technical skills. The fastest growing fields—financial services included—depend on knowledge, not physical labor.

We've all heard the sometimes bitter debate on outsourcing and immigration. However, our ports and logistics facilities overflow with low-cost goods from overseas. Imports and exports—added up—are now equivalent to about one-fourth of gross domestic product. That figure 40 years ago was about 10 percent. Today's economy is truly global.

We're all aware of our current preoccupation with lost jobs to other parts of the world, both in manufacturing and the services sector. But looking at the data, you'll see three important facts. First, the majority of jobs lost involve relatively low-skilled, low-productivity work in fields like apparel production and call centers. Second, with respect to manufacturing, while it's true there are fewer factory jobs as a proportion of total U.S. employment, the U.S. share of the value of world manufacturing output has remained stable, reflecting increases in worker productivity. Third, while it's true that certain service-oriented jobs have moved to other countries, we still export more services to the rest of the world than we import from others.

What's the bottom line of these changes in our economy? The march of globalization is relentless, and businesses will have to keep spending more on technology to improve productivity. Technology allows consumers and businesses to compare prices from vendors around the world and find new and less expensive sources. And innovations in supply-chain management reduce the inventory swings that used to be commonplace in our economy, helping to dampen the contribution of inventory adjustments to economic cycles.

Painful lessons in monetary policy
Good economic outcomes depend on good monetary policy, where I've spent the past 10 years of my career. Recent experience in this area offers several other lessons.
In the 1960s, economic growth was strong in part because of the fiscal stimulus of tax cuts and increased military and social spending. The Fed’s policy of leaning against inflationary pressures attracted little attention. But in the 1970s, policymakers tried to insulate the economy from relative price movements in one important commodity—oil. The big mistake in this policy was the failure to recognize that controlling inflation was a necessary first requirement for sustaining long-term growth.

After the 1970s oil price shocks, it became fashionable to embrace the false notion that one could improve economic outcomes by trading a bit of inflation for growth. As we should now know, a bit of inflation can get out of hand quickly, especially when consumers and businesses expect more price increases, waste time and effort trying to beat inflation, and then rush to spend more money in a vicious inflationary cycle. The consequences of high inflation were and remain economically poisonous: increased uncertainty and risk, the added incentive to consume instead of invest, cost of living adjustments, and other marketplace distortions.

During the early 1980s, Fed Chairman Paul Volcker and his Fed colleagues broke the back of high inflation by raising interest rates well into double digits. The costs were huge—both in economic and human terms. The U.S. economy endured two painful recessions. And along with the run-up in bank failures that I just mentioned, entire industries such as homebuilding collapsed. Because of our tough policy, the Fed was suddenly thrust into the public limelight.

By 1996, when I became Atlanta Fed president and part of the Fed policymaking group, inflation expectations were, once again, under control. About that time, the federal budget deficits were reined in. With the fortuitous convergence of low inflation and rapid growth, we enjoyed the longest economic expansion in U.S. history. In hindsight, I may have been naive, but I thought that Americans had truly learned the value of responsible fiscal and monetary policy working in tandem to foster economic growth for the long-term.

The last decade, under the leadership of former Fed Chairman Alan Greenspan, also brought about major changes in how the Federal Reserve communicates our monetary policy actions and thinking. This transparency was and still is consistent with greater public scrutiny of the Fed and parallels the increase of financial information in the private sector that is central to today’s market-based approach to regulation.

As amazing as it may sound today, until 1994, there was no announcement about the direction of monetary policy—not even after Federal Open Market Committee meetings. Market participants had to divine whether or not rates had changed by looking at conditions in money markets. This “quiet” (or silent) approach to communications gave rise to a cottage industry of “Fed watchers” who were devoted to interpreting our policy actions and likely policy direction.

Now, after each FOMC meeting, we not only announce our action but also provide brief comments on the economy and potential risks to the outlook. For the last three years, we have even tried to signal the likely path of policy—in my view, an approach that’s worked well during this particular period.

Our new Fed Chairman, Ben Bernanke, has talked about the need to make our policy goals even clearer. Minutes of our recent FOMC meetings indicate that the Fed is studying and debating the limits to what we should say about the outlook and possible future policy actions. My Fed colleagues and I have found that market reactions to our Fed comments can be surprising. And, in an environment of seemingly endless data reports, it’s sometimes hard in the short run to distinguish meaningful economic signals from noise.

This thinking about transparency will evolve. And I expect the Fed will keep trying new and different ways to communicate important views and actions, including perhaps establishing targets for acceptable levels of inflation. Clearly, more central bank communications are helpful, but there is ample room to debate how to reflect the range of views and uncertainties that are inherent in the policymaking process.

An interconnected world
While I’ve tried to make the case that our financial system and economy have gone through revolutionary changes in the past 40 years, I want to leave you with the notion that things will keep getting more complex and more interesting.

From a payments perspective, our vision of an efficient, predominately electronic system is in sight. There will be fewer and bigger banks, and competition will keep altering our financial marketplace. We will all face more potential risks and rewards as the selection of financial products continues to multiply.

Our financial system and our economy will continue to become more interconnected. Every moment of every day, vast sums of money zip around the world. Nine years ago a financial panic in Asia quickly led to financial market repercussions around the world. And with the emergence of China and India and increasing U.S. indebtedness, the global flow of funds will continue to grow, and our economy will depend more and more on events and decisions that occur outside our national borders.

Monetary policymakers must continue to account for all of these changes and others we can’t envision as technology advances and shocks occur. We’ve been reminded over and over how adaptable and resilient our U.S. financial system and economy are, and no doubt we’ll be tested again. I’m leaving the FOMC confident in the Fed’s commitment to keep inflation at bay. I’m sure future policymakers will remember the lessons we learned in the past 40 years about what happens when you start down the slippery slope of trading inflation for growth.

I wish my college buddies who gave me the green eye shade were here with us today. Contrary to what they might have expected, my experience as a central banker has been fascinating and, at times, downright exciting.

For a long time, I’ve enjoyed an up close and personal view on banking and the economy, and pretty soon I’ll be watching from the bleachers. Looking ahead to the next four decades, I think we all have good reason to expect our financial system and our economy will remain strong and continue to be the envy of the rest of the world.

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