In my remarks today, I will focus on why global growth has been so anemic following the financial crisis and what we can do about it.

I think it is fair to say that the global recovery following the financial crisis has been disappointing. Growth is below pre-crisis levels for the United States, Europe, Japan and China. For example, in the U.S., real GDP growth has averaged only about 2.2 percent per year over the period from 2010 to 2015, below the pre-crisis average of 2.4 percent from 2003 to 2008. This slower growth performance has been accompanied by relatively low inflation rates – persistently below the objectives of the monetary policy authorities in the United States, Europe and Japan.

As I see it, there are many causes for these persistent shortfalls in growth, and they vary across regions and countries. Let me focus on the reasons for the United States in the post crisis period.

Growth has been weaker than expected for many reasons. The financial crisis was a searing experience that damaged household and business confidence in a profound way – with a more lasting effect than the typical economic downturn. The housing bust created both a large housing supply overhang and a large number of households that were underwater on their mortgages. Households needed to repair their balance sheets and bring down their debt service burdens to more manageable levels. Higher levels of unemployment further depressed demand.

Credit availability contracted. The tightening of credit standards occurred quite broadly – in housing credit, consumer credit cards and business lending. Some of the credit supply restrictions were imposed by banks that needed to repair their balance sheets, deleveraging by building up capital and working down their bad assets.

Fiscal outlays were not high enough to compensate for the contractionary impulse from these first three sources. The crisis led to a significant deterioration in the U.S. federal budget deficit and put pressure on state and local budgets. After the federal budget deficit reached around 10 percent of GDP at the peak, fiscal consolidation occurred at the federal level, as well as at state and local levels, restraining economic activity instead of supporting growth.

Productivity growth has also been quite low. In the period before the crisis (2003 to 2008), U.S. nonfarm productivity growth averaged 2 percent per year. Since 2010, productivity has been closer to 1 percent. While some of this decline can be explained by lower capital spending, the decline is difficult to fully explain.

Another explanation some have offered is that there is a measurement problem – we are understating output growth and overstating price inflation. This type of issue, long flagged as a hedonic adjustment, seems most credible in particular market segments, such as in healthcare. Alan Blinder has posed this question: Would you rather have 1970 healthcare at 1970 prices or 2016 healthcare at 2016 prices? Based on the measurement of prices, 1970 healthcare is a much better deal. Yet, when offered this choice, almost all choose 2016 healthcare. Why? The reason is that people highly value the advances in healthcare technology, such as in cardiac care, or in the procedures that are practical today, such as hip and knee replacement, that simply weren’t available 50 years ago.
U.S. economic performance has also been held back by developments in the rest of the world. Growth outside of the United States has slowed. In the euro area, comparing the period from 2003 to 2008 to the period from 2010 to 2015, annual real GDP growth slowed from 1.9 percent to 0.8 percent. Japanese growth has remained muted over these periods at 0.1 percent and 1.0 percent respectively. In China, reported growth rates over these two periods slowed from 11.3 percent to 8.3 percent. These developments, along with policy and risk events that have increased demand for U.S. assets, have contributed to significant U.S. dollar appreciation over the last two years. This dollar strength has created competitive challenges for U.S. exporters, especially in manufacturing, and has caused the trade sector to be a drag on U.S. economic activity.

Looking forward, despite the fact that U.S. economic growth has been disappointing, we have actually made considerable progress toward our monetary policy objectives. The United States is quite close to its employment and inflation objectives. On employment, there still seems to be a bit of slack in the U.S. labor market. But, that margin has shrunk greatly over the past few years. Payroll gains have been at least as robust as anticipated.

On inflation, we are still somewhat below our 2 percent objective. But, even here, I think there has been progress. Despite the strengthening of the dollar and the decline in energy prices, core PCE inflation has been quite stable over the past year – currently running at around 1.6 percent. That is not a tremendous difference from our 2 percent objective.

So why has the United States done a bit better compared to Europe and Japan in terms of achieving our monetary policy objectives. I think there are a number of contributing factors. First, U.S. household balance sheet repair occurred relatively quickly. This is in part because the housing foreclosure process wiped out many mortgage debts. Part was accomplished by a long period of very slow household debt growth. And part was accomplished by the sharp fall in interest rates that helped cut debt servicing costs.

Second, in the U.S., the banking system was recapitalized and deleveraging occurred quite quickly following the financial crisis. Capital from the Troubled Asset Relief Program, or TARP, was put into the large banks and soon many of them replaced this TARP capital by raising new equity. The SCAP stress test in 2009, and the annual CCAR stress tests that followed, worked to constrain the rate of bank capital distributions and, thereby, helped to build up bank capital ratios. And, U.S. banks worked hard to clean up their balance sheets. Poor assets were managed down or run off, and underwriting standards were tightened.

Third, the Federal Reserve was particularly aggressive early on in its pursuit of monetary policy accommodation in order to keep inflation expectations well-anchored. This is a necessary condition, in my view, to maintain the efficacy of monetary policy. If inflation expectations were to get unmoored to the downside, then it becomes more difficult to pursue a stimulative monetary policy.

Could things have been done differently in the U.S. in such a way that would have led to better outcomes? Absolutely. With the benefit of hindsight, we could have and should have been even more aggressive on the monetary policy side. While we made progress with some of the innovations on monetary policy that we eventually introduced – such as the open-ended purchase of $85 billion of Treasury and MBS securities per month – it would have been better if we had done this sooner.

There is a lot as well that is outside the Fed’s purview that could have been done to make the U.S. economy perform better. This includes tax reform, job retraining programs and infrastructure investment.

So, what can we do to bolster global growth in the future? The first is to undertake the necessary structural reforms to make our economies more efficient. Productivity growth is not preordained. The steps we take as countries to eliminate and lessen bottlenecks and improve our human and physical capital are important. The second is to ensure that our financial systems are well-functioning. Tremendous progress has been made globally in
implementing higher capital and liquidity standards post-crisis. But we still see some important banking systems impaired by bad loans, low profitability and inadequate capital.

The population aging in the developed world does imply that, purely from the productive factor side, less of the global growth contribution is likely to come from Japan, Europe and the United States. And economies like China are likely to continue to slow as their per capita income increases and they make the transition from investment-led consumption. But this doesn't imply a bad outcome. There are many other countries with tremendous potential for growth in areas such as Africa, Asia, and South America. Take, for example, the surge in growth that we are seeing out of India.

I am an optimist. To a large degree we do control our destiny. It is up to us to seize those opportunities.