

Questions and Answers: The Economic Recovery and the Path Forward

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It is great to be here at the National Association for Business Economics Economic Policy Conference. The theme of this year's conference, "Hard Truths, Difficult Choices," asks us to consider the challenges facing economic policymakers as our focus shifts from acute crisis response to long-term structural issues. To help inform this discussion, I will depart from the conventional format in two respects. First, I will skip the speech entirely and just go directly to questions and answers. And second, I will be asking all the questions.

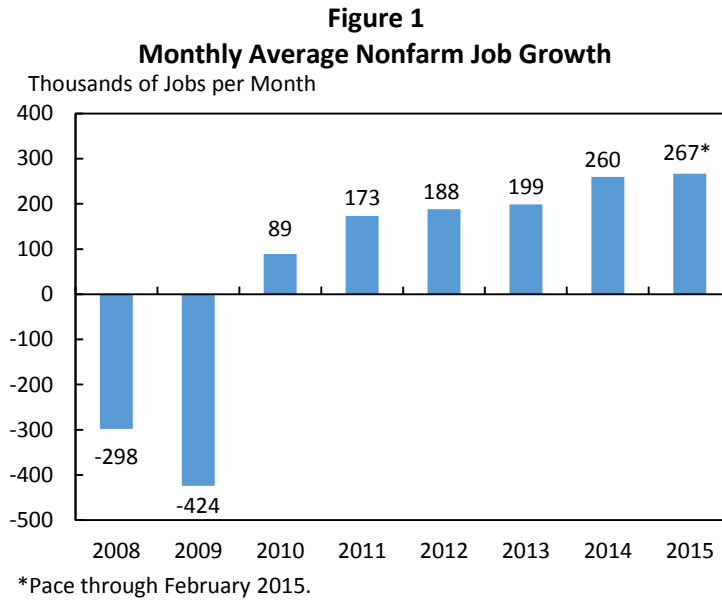
I will mostly be repeating the most frequent questions I get as I talk about the economy. And I should disclose at the outset, such questions rarely take the form of "can you tell us why the economy is just so perfect?" Indeed, given the often skeptical tenor of the questions I will pose, as befits the institutional role of the people who often ask me these questions, I hope my answers do not sound defensive. They are not intended to be so: the recovery really has been genuine and impressive in many dimensions, including the faster real wage growth than at the beginning of the 2000s, the fastest 12-month cumulative job growth since the 1990s, the fastest decline in the unemployment rate since the 1980s, the most consistently sustained 12-month pace of job growth since the 1970s, and the longest streak of job growth on record. But the U.S. economy could do even better. We are not completely back to normal from the depths of the crisis. And even if we were fully healed, we could make larger advances for middle class families by grappling with the decades-old challenges that threaten the well-being of the middle class. In fact, those are precisely the reasons the President continues to work so hard to strengthen the economy and better connect middle-class families to the benefits of economic growth through a set of policies I will also briefly address today.

Question: Is the labor market recovery genuine? Or is the unemployment rate only falling because people are no longer looking for work?

Answer: Yes, it is a genuine labor market recovery with the strongest payroll job growth since the 1990s. Broader measures of unemployment that take into account discouraged workers and others who are not fully participating have also declined substantially.

The U.S. private sector has now added jobs for 60 straight months, the longest streak of job growth on record. Each year of this recovery has seen more overall job growth than the previous, as shown in Figure 1, with 2014 seeing the fastest pace of job growth since 1999. And so far, the pace has been maintained in 2015. These employment gains are even more impressive when you consider the demographic changes that the United States is experiencing, with a reduction in the

prime-age population as the baby boomers age into their retirement years, a point to which I will return.

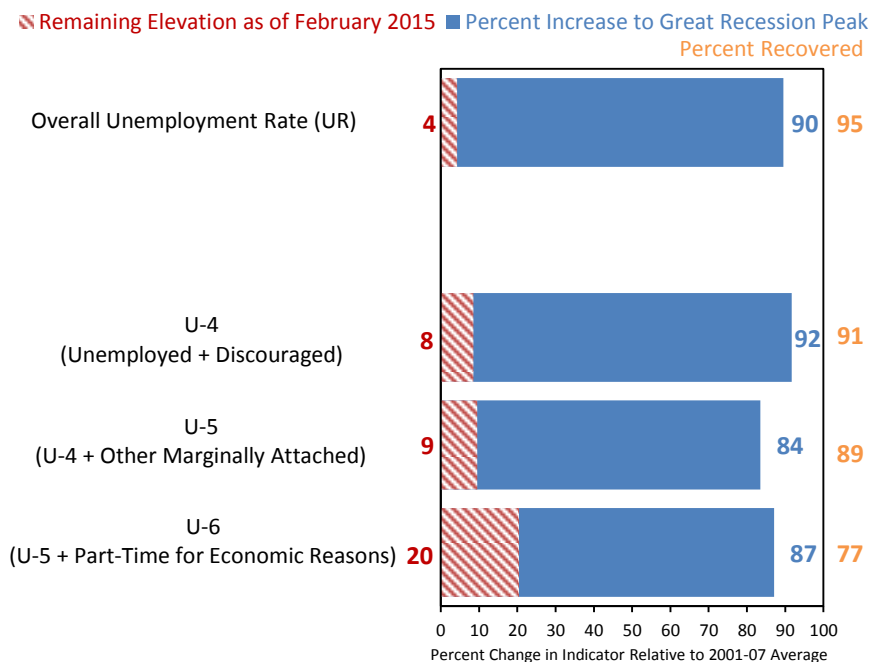


The fast pace of job creation has been accompanied by a fast pace of decline in the unemployment rate. Over the first 3 years of the recovery, the unemployment rate fell by 0.4 percentage point per year, but it is now falling 1.2 percentage points per year. In fact, the decline from 2013 to 2014 was the largest since 1984.

The Bureau of Labor Statistics (BLS) publishes broader measures of unemployment that also show substantial progress, as seen in Figure 2. The official unemployment rate rose 90 percent in the crisis relative to its average in the last expansion, but it has since recovered 95 percent of the way to where it started. A similar observation is true even when one accounts for discouraged workers or marginally attached workers (those who are not looking for a job but would take one if it were available). BLS's broadest measure of labor underutilization, U-6 which includes not only marginally attached workers but also workers employed part-time for economic reasons, has also shown considerable progress in recent years, falling 1.6 percentage points in the last twelve months as compared with a 1.2 percentage point reduction for the official unemployment rate.

Figure 2

Elevation and Recovery of Broader Measures of Unemployment



Question: But if the labor market recovery has been so strong, why has the labor force participation rate fallen by so much?

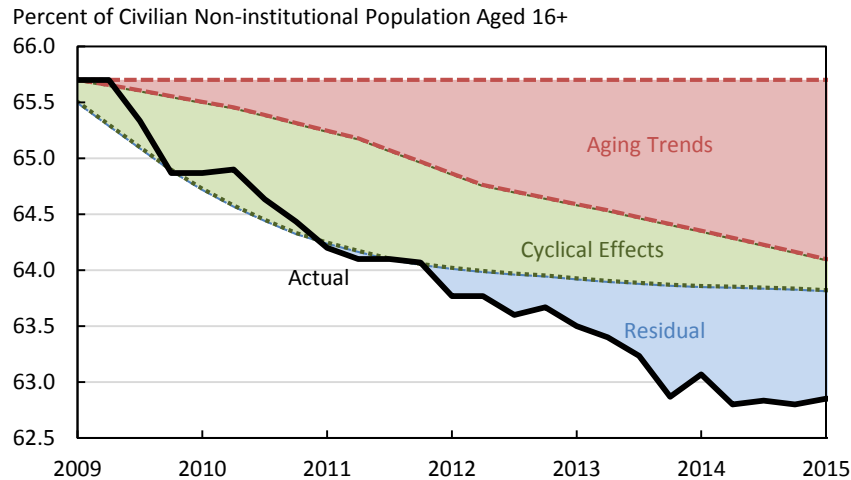
Answer: Three reasons: (1) the aging of the population as the baby boom turns into a retirement boom (just over half of the decline); (2) the normal cyclical reduction that will abate as the economy recovers (about one sixth of the decline); and (3) other reasons such as the high rate of long-term unemployment and longer-running trends in participation (about one quarter of the decline).

The first baby boomers turned 62 and became eligible for Social Security in 2008, starting a retirement boom that will play out over the next several decades. At the same time, the economy was hit by the worst recession since the Great Depression. Both of these factors sharply reduced the participation rate. The Council of Economic Advisers (CEA) estimates that 1.8 percentage points of the 3.1 percentage point decline in the participation rate since the end of 2007 is due to the aging population, as shown in Figure 3.¹ Another 0.5 percentage point is due to the normal operation of the business cycle.

¹ CEA models the magnitude of the aging effect on the labor force participation rate via several different methodologies, including analysis of participation rates by age, time series econometrics, and structural micro-data models. The finding that demographics account for approximately half the participation rate decline since 2007 is robust to changes in methodology. Business cycles effects are estimated using time series data, defining the cyclical position according to the unemployment gap. For more detail on our estimation methodology, see CEA's July 2014 report [The Labor Force Participation Rate Since 2007: Causes and Policy Implications](#).

Figure 3

Labor Force Participation Decomposition

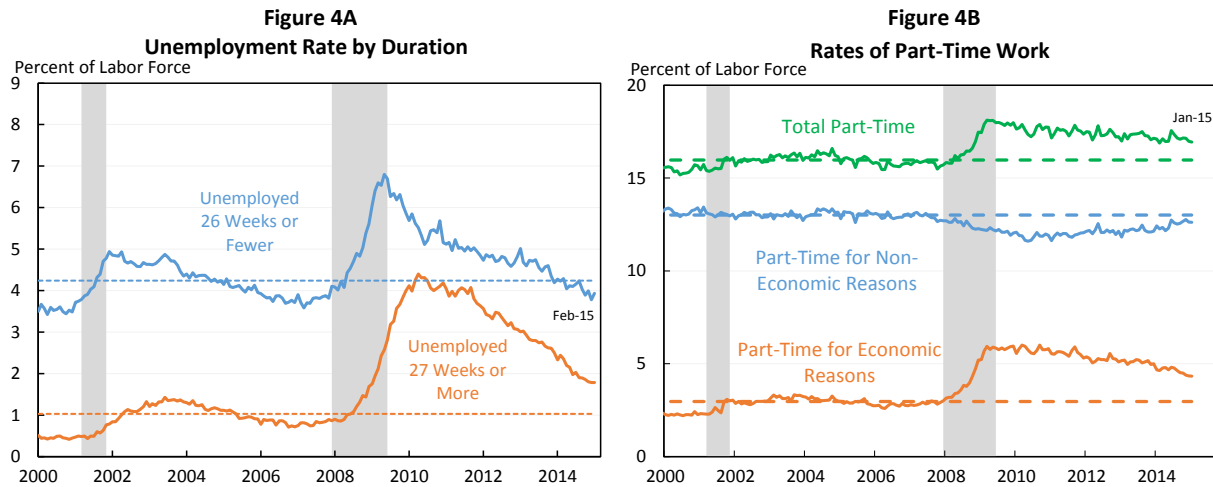


That leaves 0.8 percentage point unexplained. In part, this residual reflects trends unrelated to aging, including the fact that the participation rate for prime-age men has been falling since the 1950s and that the rate for prime-age women has been falling for the past decade and a half. This residual also reflects the unique severity of this recession that led to unusually long spells of unemployment and, potentially, structural changes that affect how the labor market responds to negative shocks as well.

Question: Is it fair to say, then, that this has been an imperfect labor market recovery?

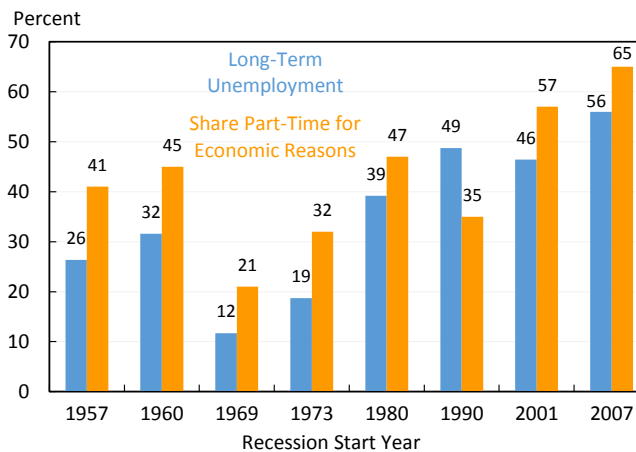
Answer: Of course it is not perfect. We are not yet fully recovered, and even when we are, the United States will still face a set of labor challenges that reflect both the continued fallout from the recession and longer-standing structural changes.

In addition to the residual decline in the participation rate I have just been discussing, the recession also led to an enormous run-up in long-term unemployment and people working part-time for economic reasons, as shown in Figures 4A and 4B. The long-term unemployment rate—tracking those out of work for 27 weeks or more—quadrupled and the rate of people working part-time for economic reasons nearly doubled. Both of these indicators have shown substantial improvement, with long-term unemployment now falling faster than short-term unemployment and virtually all of the people put back to work in the recovery have been in full-time, not part-time, jobs. Nevertheless, these broader indicators remain elevated, mirroring the labor force participation rate, which still remains low.



The experience in recent recessions indicates that the labor market may be more sensitive to shocks in these dimensions, with larger increases in long-term unemployment and part-time work for a given increase in the unemployment rate, as shown in Figure 5. In fact, these indicators have followed a similar pattern to the 2001 recession—only magnified proportionately to the larger recession experienced in 2007-09.

Figure 5
Increase in Long-Term Unemployment and Part-Time for Economic Reasons as a Percent of Increase in Overall Unemployment Rate



We do not fully understand why participation, long-term unemployment, and part-time for economic reasons have behaved this way. But one possibility we explore in Chapter 3 of the latest *Economic Report of the President* is that all of these are consequences of the decades-long reduction in labor market fluidity. A less fluid labor market makes it harder for workers to return to normal full-time employment after a large adverse shock such as the Great Recession. Because openings are scarcer, workers transitioning between jobs or trying to enter the labor force may take longer to find work, which may mean that they spend more time unemployed.

However, it may also lead to more time out of the labor force or taking part-time work while they are searching for full-time work.

Question: The labor market has genuinely strengthened, albeit with your caveats. But if that is the case, why are we not seeing increased GDP growth?

Answer: We are seeing increased GDP growth.

Real GDP grew at an annual rate of 2.7 percent over the last two years, up from 2.1 percent over the first 3-1/2 years of the recovery, as shown in Table 1. This acceleration in real output largely reflects the acceleration in consumer spending, a category that represents 68 percent of GDP and has grown at 2.8 percent over the last two years, up from 2.1 percent earlier in the recovery. A turnaround in the State & local sector from contractionary to expansionary has also helped and, more recently, so has the shift of federal fiscal policy to a more neutral stance. Countering these positive developments, however, the pace of residential investment increases has slowed. So too has the pace of exports, paralleling a slowdown in the global economy.

Table 1
Components of Real GDP
(percent change at an annual rate)

	Start of Recovery (09:Q2-12:Q4)	2013 and 2014 (13:Q1-14:Q4)
Gross Domestic Product	2.1	2.7
Consumer Spending	2.0	2.8
Business Fixed Investment	5.2	5.4
Residential Investment	5.9	4.6
Exports	7.4	3.6
Imports	6.8	4.0
Federal Gov't	- 0.6	- 3.1
State & Local Gov't	- 2.2	1.2

Question: But why did real GDP growth slow in Q4?

Answer: We should not place too much weight on any one data point because GDP is sensitive to transitory factors. Indeed, the same volatile factors that elevated third-quarter GDP reduced fourth-quarter GDP.

If I had to look at just one data point to measure growth, I would look at real private domestic final purchases (PDFP), the sum of personal consumption and business fixed investment. PDFP

is a more stable, forward looking indicator that captures more of the signal and less of the noise than headline GDP—and it happens to have been roughly constant over the last three quarters.

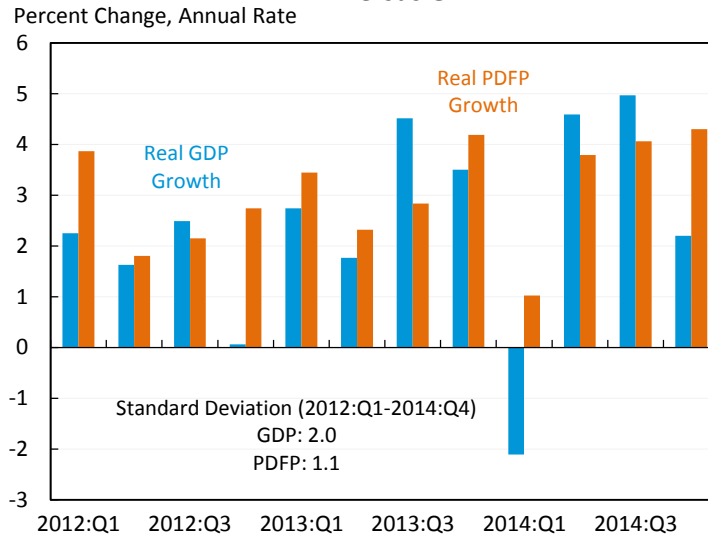
Real GDP, the headline indicator, slowed from 5.0 percent in the third quarter of 2014 to 2.2 percent in the fourth quarter. In the third quarter, GDP was boosted by two transitory factors—an especially large increase in defense spending and an especially large increase in net exports—both of which reversed in the fourth quarter. In the 2015 *Economic Report of the President*, CEA analyzed a range of indicators to find which one was the best predictor of one-quarter-ahead real GDP growth, a way of gauging which component of GDP had the highest level of signal about the economy relative to noise. The best predictor, measured by the R^2 , a statistical concept that captures how much of the future variation is explained by the variable, turns out to be PDFP, as shown in Table 2.

Table 2
Component Ability to Forecast One-Quarter-Ahead
Real GDP Growth

Component (Real)	Predictive Power (Adjusted R^2) of GDP
Government	-0.02
Exports	0.02
Inventories	0.02
Gross Domestic Product (GDP)	0.22
Final Sales of Domestic Product	0.23
Imports	0.28
Fixed Investment	0.29
Mean Output (GDP, GDI)	0.29
PCE	0.30
Gross Domestic Income (GDI)	0.31
Final Sales to Domestic Purchasers	0.33
Final Sales to Private Domestic Purchasers (PDFP)	0.36

The comparative stability of PDFP as compared with GDP is shown in Figure 6. Focusing on 2014, PDFP was indeed low in Q1 amidst four Northeast Snowfall Impact Scale (NESIS)-rated storms, the most on record. But PDFP did not experience nearly as large a swing as GDP, which was temporarily reduced by factors like inventory reductions as well. As the weather improved, PDFP rebounded—but again, not as much as GDP which was, in part, boosted by temporary factors. And PDFP has indicated consistent growth in the second half of 2014.

Figure 6
PDFP versus GDP



Question: But even if one looks beyond a single quarter and focuses on the entire recovery, why has growth been lower than in previous economic expansions?

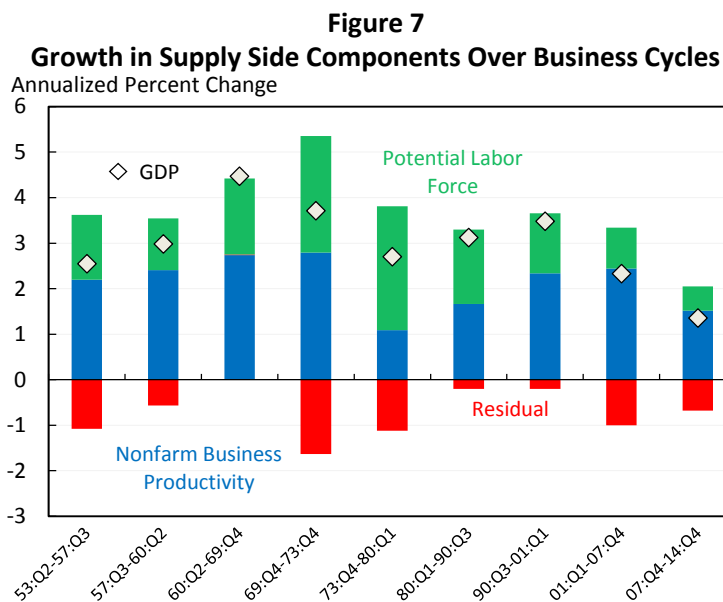
Answer: *The largest difference between the speed of the current recovery and previous expansions is that the workforce is growing more slowly for demographic reasons.*

From 1960:Q2 to 2007:Q4, real GDP grew at an average annual rate of 3.4 percent, as compared with 1.2 percent GDP growth since 2007:Q4. So measured peak-to-peak, growth in this business cycle has been 2.2 percentage points below the historical average. Measuring just the recovery, the economy has expanded at a 2.3 percent annual rate—which is 1.7 percentage points below the 4.0 percent growth rate average for the six recoveries from 1960 to 2007.

The largest reason for these differences is simply demographics. The population today is growing at 1.1 percent a year, as compared with 1.5 percent growth in this earlier period. But this greatly understates the demographic differences. The first baby boomers came of age in the 1960s and started a wave into the workforce, a wave that was reinforced by an influx of women into the workforce. In contrast, as I mentioned earlier, the first baby boomers turned 62 in 2008 and became eligible for Social Security—the beginning of a retirement boom. Overall, the population of prime-age workers (those age 25 to 54) grew 1.4 percent annually from 1960 to 2007 and has fallen 0.2 percent annually since then, a 1.6 percentage point difference.² Another concept, the Congressional Budget Office’s (CBO) potential labor force grew at 1.7 percent per year from 1960 to 2007 and by 0.5 percent per year since then, a 1.2 percentage point difference. Regardless of the series used, these demographic shifts explain the majority of the difference between current rates of growth and historical rates of growth.

² These broader periods conceal substantial variations—for example, from 1970-79 prime-age population grew at an 2.2 percent annual rate while from 2000-07 it grew at an 0.6 percent annual rate.

This comparison is shown systematically for all of the postwar business cycles in Figure 7. It decomposes peak-to-peak growth rates (or peak-to-present growth rates for the current cycle) into the growth of the potential labor force, productivity growth, and a residual that captures a range of factors including shifts in employment rates and hours worked. Overall, it shows that the biggest variations in GDP growth rate come from changes in the potential labor force, which itself is a function of demographic changes and not the business cycle. Productivity growth has varied over time, but by somewhat less.



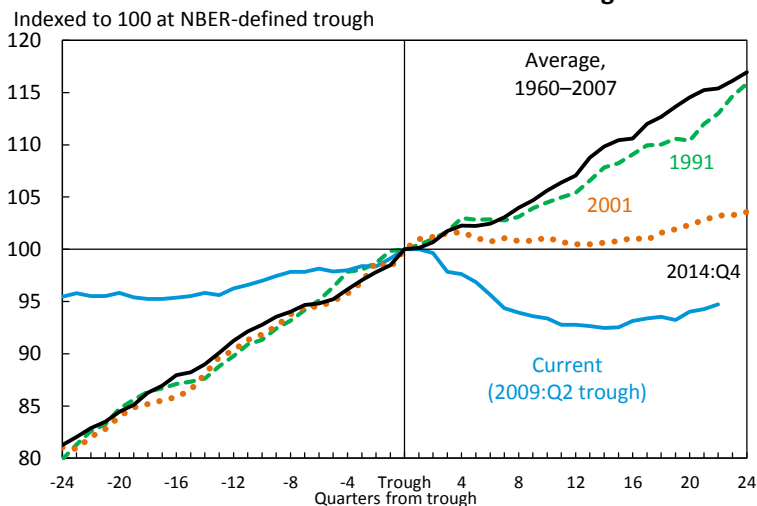
Question: But demography is only the “largest” difference. Why else is growth slower than in the past?

Answer: There are a number of possibilities, but three of the most plausible (and not mutually exclusive) candidates are: the unusual contraction in State and local government, the aftermath of the crisis, and the global growth slowdown.

While the most common answer for what makes this business cycle different is the global financial crisis, I want to start with a possibility that is less widely appreciated: the unusual behavior of State and local government spending, as shown in Figure 8. Following every other postwar business cycle recession, State and local spending increased, acting as a countercyclical force that helped speed the recovery. In contrast, State and local spending continued to drop, only rising slowly since 2013:Q1. All told, if State and local spending had followed the pattern of previous business cycles, the growth rate would have been 0.4 percentage point higher per year.

Figure 8

Real State and Local Government Purchases During Recoveries



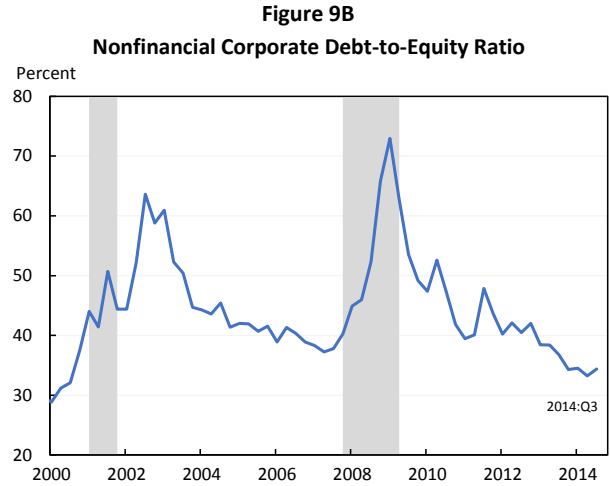
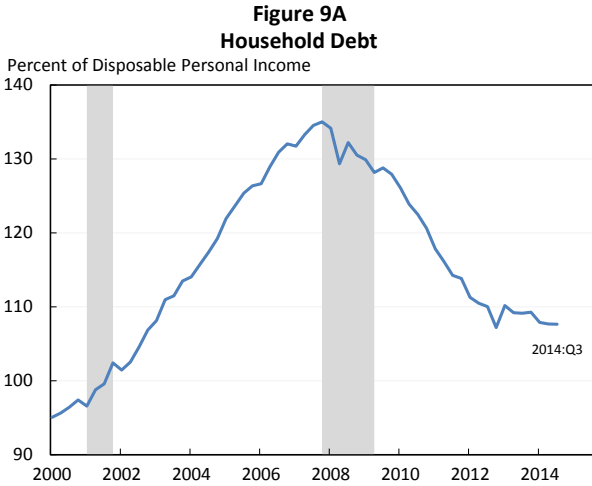
The second potential explanation is that the United States is not recovering from a normal cyclical recession, but from a financial crisis. Carmen Reinhart and Ken Rogoff have argued that growth is substantially slower following a financial crisis.³ Christina Romer and David Romer have constructed what they argue is a more nuanced and comprehensive database and do not see this result.⁴ And there is an ongoing debate about the relative importance of bank weaknesses that constrained lending versus the inability of overly indebted consumers to spend.⁵ But regardless of one's view on the relative importance of these factors, it would be reasonable to expect that the crisis could have long-lasting effects.

This includes the fact that many of the precipitators of the crisis were worse than those at the onset of the Great Depression—for example, the Great Recession began with a much larger decline in household wealth, a larger decline in global trade, and similar declines in employment and output. Moreover, the crisis was precipitated by a real estate bubble—an obstacle to rapid increases in homebuilding, the standard driver of previous V-shaped recoveries. The related increase in household and business debt in the run-up the crisis took several painful years to work off, as shown in Figures 9A and 9B.

³ Carmen M. Reinhart & Kenneth S. Rogoff, 2009. "The Aftermath of Financial Crises," *American Economic Review*, American Economic Association, vol. 99(2), pp. 466-72, May.

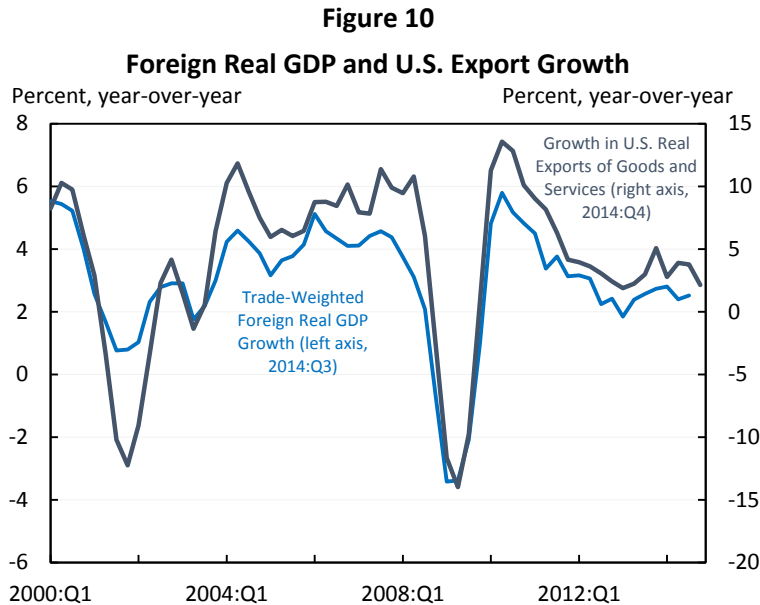
⁴ Christina D. Romer & David H. Romer. 2015. "New Evidence on the Impact of Financial Crises in Advanced Countries." Working Paper. March.

⁵ See, e.g. Atif Mian & Amir Sufi. 2014. *House of Debt: How They (and You) Caused the Great Recession, and How We Can Prevent It from Happening Again*; Greetje Everaert et al. 2015. "Does Supply or Demand Drive the Credit Cycle? Evidence from Central, Eastern, and Southeastern Europe." International Monetary Fund Working Paper WP/15/15. January.



Even with these obstacles, the U.S. economy has performed substantially better than most of the other large economies that also experienced a systemic financial crisis in 2007-2008, and was one of the first economies to return to its pre-crisis level of output per working-age population. This fact underscores both the vigor of the policy response in the United States and the difficulties inherent in recovering from a financial crisis.

Third, the U.S. recovery has been slowed by reduced international demand for U.S. exports over the course of the recovery. The prolonged slump in Europe and the steady slowing of economic growth in China and other economies have contributed to a notable slowdown in international demand for U.S. exports as shown in Figure 10. The euro area crisis also had additional adverse effects through financial channels and heightened uncertainty.



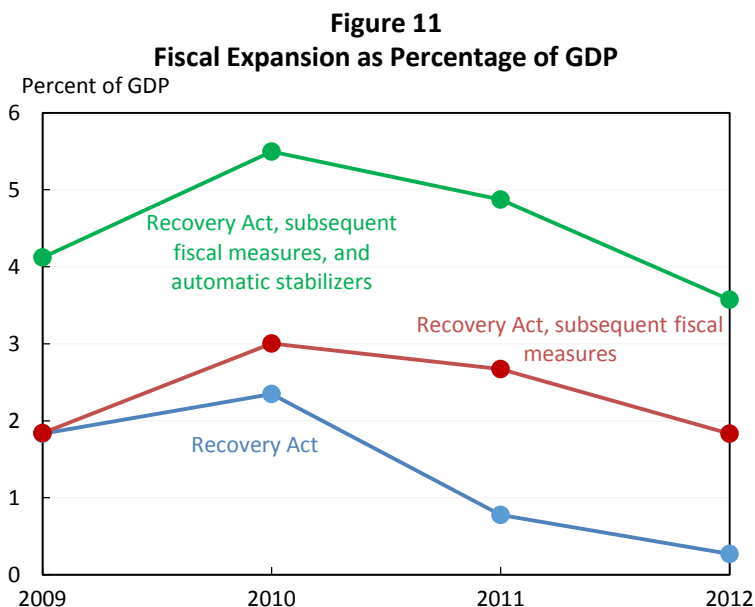
State and local spending, the overhang from the crisis, and the global slowdown are each individually able to explain essentially all of the non-demographic deviation between measured growth rates in this business cycle and previous business cycles. But in addition, some

economists have pointed to a range of issues involving data revisions and the increased difficulty of measuring an economy with greater services and especially technology.⁶ Although these issues may be important, they are beyond the scope of this discussion.

Question: What about the role of Federal policy in the recovery?

Answer: The fact that the United States has recovered further and faster than past historical benchmarks or other advanced economies today is an indicator of how effective our response has been, but growth would have been even stronger with the President’s full agenda.

The United States is in this stronger position because, broadly speaking, we have gotten policy right. The United States passed its first round of fiscal support in February 2008, when the unemployment rate was still 4.9 percent and few economists even thought that the economy had already slipped into recession. The Recovery Act signed into law by President Obama a year later was the largest single countercyclical effort in American history and it was followed by a dozen additional fiscal-jobs measures that, together, peaked at more than 3 percent of GDP in 2010—providing a combined fiscal expansion of \$1.4 trillion, doubling the initial expansion provided by the Recovery Act itself. Together with automatic stabilizers, the fiscal support to the economy totaled 5.5 percent of GDP, as shown in Figure 11.⁷



But we would be in even better shape if we had not missed some important opportunities. The President sought additional fiscal measures that Congress did not act upon, including the American Jobs Act proposed in 2011, the extension of unemployment insurance benefits this past year, increased upfront investments in infrastructure, and timely substantial relief from the sequester—all of which would have further accelerated the recovery.

⁶ E.g., Martin Feldstein. 2014. “The Future of American Growth.” Project Syndicate. January.

⁷ See Chapter 3 of the 2014 *Economic Report of the President* for a fuller discussion of these issues.

The Administration's fiscal efforts were accompanied by accommodative monetary policy. The Federal Reserve cut the target Federal Funds rate to effectively zero at the end of 2008 and has kept it there ever since. On top of zero rates, the Fed implemented unconventional policy tools such as quantitative easing and forward guidance.

These macroeconomic policies complemented the rescue of the financial sector through capital injections, an effective stress testing regime that helped to restore credibility to the system, and additional initiatives to support the automotive and housing sectors. All told, not only has the financial system been stabilized, but it has been done at effectively zero cost to the taxpayer. These steps, together with Dodd-Frank Wall Street Reform and Basel III, have resulted in substantially healthier capital ratios for our banks and a more broadly robust financial system.

Altogether, Alan Blinder and Mark Zandi estimated that the combination of these macroeconomic and financial policies prevented the loss of a further 8.5 million jobs and prevented the unemployment rate from rising above 16 percent in the wake of the crisis.⁸

Question: You listed all the reasons for slower output growth, but isn't the real problem slower productivity growth? And doesn't this suggest that growth will be slow in the future?

Answer: There is no reason to believe that productivity growth will be substantially slower in the future. And there is some cause for optimism—but if we put the right policies in place there would be even more cause for optimism.

Some economists have argued that the slower productivity growth in recent years is evidence that the U.S. economy is shifting toward a sustained period of sluggish productivity. John Fernald, for example, has argued that total factor productivity growth slowed prior to the Great Recession and that the potential GDP is lower than commonly estimated.⁹ Robert Gordon has argued that faster productivity growth in the 1950s, 1960s, and 1995-2005 was the result of special, one-time factors and we are unlikely to be able to continue to innovate at that pace going forward.¹⁰ Some commentators have seized on the last few years of productivity growth (2010-13)—which averaged 0.7 percent per year—to argue that potential growth rates will be much lower going forward.

The basis for conviction about a pessimistic outlook for productivity growth is relatively weak. First, productivity growth is an especially volatile series and it is best measured over longer

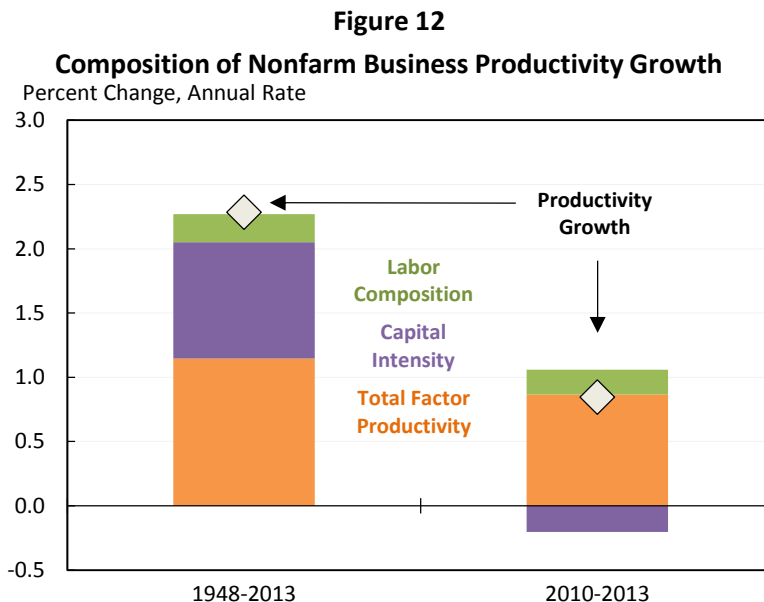
⁸ Blinder, Alan, and Mark Zandi. 2010. "How the Great Recession Was Brought to an End." July (<http://www.economy.com/mark-zandi/documents/end-of-great-recession.pdf>).

⁹ John G. Fernald. 2014. "Productivity and Potential Output Before, During, and After the Great Recession." NBER Working Paper. June.

¹⁰ Robert J. Gordon. 2012. "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds." Centre for Economic Policy Research. September.

windows. Research by Goldman Sachs and others has found that averages over longer windows are better predictors of productivity growth than averages over shorter windows.¹¹

This point is especially true for the current business cycle. For example, productivity growth from 2008 to 2009 was high at 3.2 percent annually, the flip side of some of the low growth from 2010 to 2013. Both sets of numbers have been influenced by the dynamics of the business cycle. Figure 12 shows that the principal shortfall between labor productivity growth in this recovery and the historical average has been a reduction in the increase of capital intensity, or business investment, not total factor productivity growth (TFP). This is important because there is good reason to believe that the relatively slow investment was the result of crisis-induced deleveraging, a capital overhang in the wake of the reductions in output, and the implications of a standard accelerator model for investment. As such, it would not be something one would want to extrapolate forward over the next decade or two, while TFP may be more of a gauge of the underlying ability of the U.S. economy to innovate.



While the data do not support a strong presumption of slowing productivity growth in the future, there is certainly substantial reason to be uncertain about the future of productivity growth which, unlike the demographic factors I was discussing above, can be very difficult to predict. There are, however, some reasons to be optimistic—including the potential in a variety of areas including cloud computing combined with mobile devices, biotechnology and personalized medicine, advanced materials, and clean energy research—some of which may not be fully reflected in the productivity data.¹² But the degree to which we make advances in these areas—and productivity growth more broadly—will depend on the policy choices we make, as I discuss briefly at the end of these questions and answers.

¹¹ E.g., Goldman Sachs Research. 2014. “US Daily: Trend Productivity Growth: 2% Still Seems About Right (Mericle).” November.

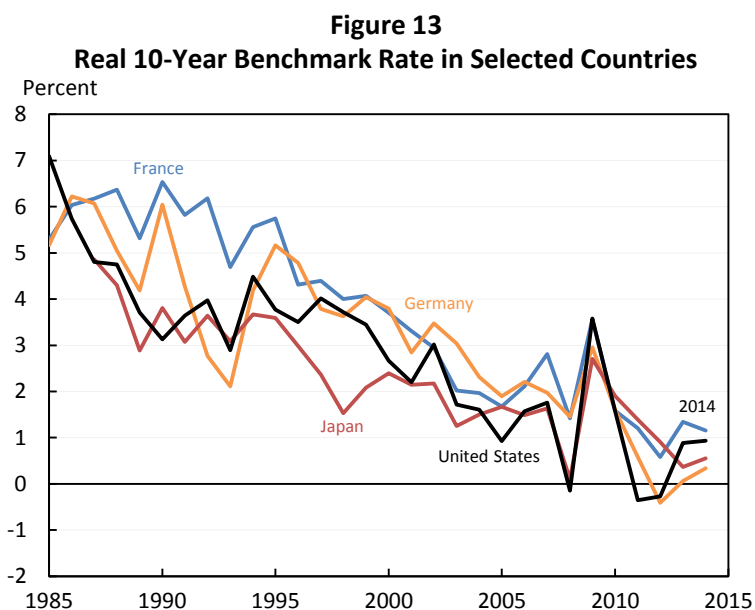
¹² Erik Brynjolfsson & Andrew McAfee. 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*.

Question: But what about secular stagnation, isn't that weighing on U.S. growth?

Answer: No, at least not in the United States today. However, it could present an increased risk in the future.

One hypothesis concerning the current situation facing the global economy is “secular stagnation,” a term that Larry Summers revived from Alvin Hansen.¹³ For this purpose, I define it as a *demand*-side phenomenon characterized by chronically insufficient aggregate demand that cannot be remedied by conventional monetary policy. Specifically, even a real interest rate of zero does not generate enough investment growth to utilize the economy’s potential. The fear is that this leads to a vicious cycle—inadequate demand leads to falling inflation, which leads to higher real interest rates, which leads to even less adequate demand.

The possibility of falling into a secular stagnation trap is closely linked to slower growth of *supply*, including for the demographic reasons discussed above. This is one of the reasons, together with the global savings glut and a shift in portfolio preferences, that the real interest rate has fallen so much across economies in recent decades, as shown in Figure 13.



In some countries, like Japan and possibly the euro zone, the combination of a low equilibrium real interest rate and low inflation expectations makes it hard for monetary policy to be as accommodative as it might otherwise be, supporting the genuine fear that the secular stagnation hypothesis describes important features of these economies today.

But secular stagnation is not relevant for thinking about the United States in 2015 or in the near term. A self-sustaining recovery is well underway and inflation expectations remain anchored

¹³ Much of the debate surrounding secular stagnation is presented in a VoxEU.org e-book on the topic that includes contributions from many of the most prominent voices in the debate. *Secular Stagnation: Facts, Causes, and Cures: A VoxEU.org eBook*. 2014. CEPR Press.

well above zero. But, as discussed above, slower population growth and the retirement of the baby boomers likely imply that potential GDP growth going forward will not match the rates enjoyed in the second half of the twentieth century—a factor that reflects not “secular stagnation” but just standard growth mechanics. At the same time, the longer-term downward trend in U.S. interest rates increases the risk that in responding to the next recession—whenever it occurs—monetary policy will again be constrained by the zero lower bound. Therefore, secular stagnation is best understood not as a binary phenomenon that either exists or does not exist, but as a probabilistic risk. And going forward there is more risk that in a future recession monetary policy will be constrained by the zero lower bound. Thus, it is important to think about other steps—like building on the improvements we have already made to fiscal automatic stabilizers—that would help maintain aggregate demand in the face of shocks.

Question: Is there anything that does worry you about the outlook for the U.S. economy?

Answer: Although forecasters expect continued increases in growth rates and declines in the unemployment rate over the near term, one should always be cognizant of our uncertainty about the economy.

As I discussed above, while U.S. forecasts have been upgraded, forecasts for the rest of the world have been downgraded. This, together with a stronger dollar, would present a headwind for U.S. exports. To date, however, the U.S. economy has seen increased domestic momentum—and the domestic economy is 87 percent of U.S. GDP—and the global slowdown is being roughly offset by the tailwind from lower oil prices. Nevertheless, the global slowdown represents a risk—not only because of trade linkages, but also because of the global financial system and overseas earnings—which is why the United States is engaged with its G20 partners to strengthen growth abroad.

Domestically, one of the reasons that growth has strengthened is a reduction in manufactured fiscal crises and harmful austerity—and it is essential that this reduction continue. Moreover, the recovery will also depend on the policies we adopt.

Finally, as the economy gets closer to its potential one of the sources of growth—the closing of the output gap—will no longer be available. Instead, we will just grow in line with our potential. It is hard to predict the future, but we can be confident that the unemployment rate will not continue falling by 1.2 percentage points per year for the next five years. And as a result, as the economy gets back to full recovery, the pace of job growth will move towards a more normal rate. Moreover, a fundamental driver of future income growth will be a healthy growth rate of productivity, itself an area of uncertainty that is potentially contingent on our policy choices, as I discussed earlier.

Question: What about anything else that excites you about the U.S. economy? Surely it is not all downside risk?

Answer: *The slowest growth of health costs in fifty years, the reduced U.S. dependence on foreign oil, and a number of technological developments are all exciting.*

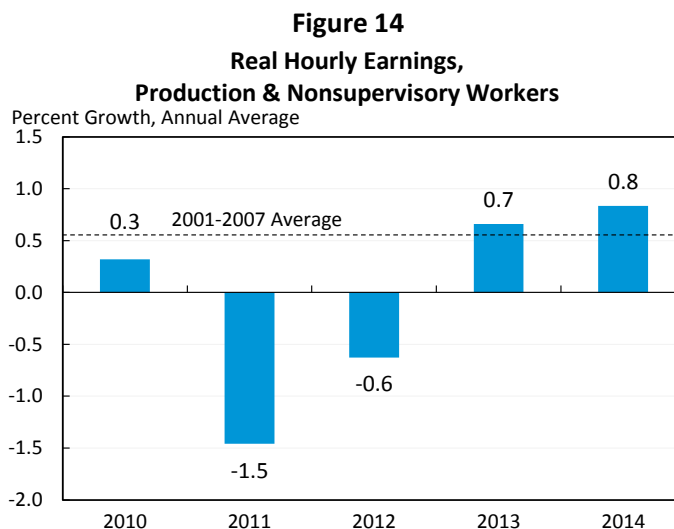
These are also all topics that I have addressed elsewhere—including in the *Economic Report of the President* (which contains all wisdom on the economy)—so as exciting as they are I will skip over them here—but feel free to ask more audience questions about these when I am done with my prepared questions and answers!

Question: But middle-class families still are not feeling the growth, as wages have not risen.

Answer: *Real wages rose in 2013, 2014 and so far in 2015—but we need to see more sustained gains in wages.*

If you are trying to assess living standards, you need to adjust wage growth for inflation. The fact that nominal wages grew 8.6 percent in 1981 was not indicative of it being a better year for workers than the 2.3 percent wage growth in 2014, particularly since inflation-adjusted wage growth was negative in 1981 and positive in 2014. As a result, our expectation for nominal wage gains needs to be adjusted for the fact that we are currently in an environment with lower expected inflation.

Real wages grew in 2013, and 2014, as shown in Figure 14. Both nominal and real wage growth have continued into the first two months of 2015. Lately, however, the biggest driver of real wage growth has been falling prices—driven by falling gasoline prices—a factor that we cannot expect to sustain indefinitely. Moreover, these data are averages for production and nonsupervisory workers so they do not fully reveal the continued increase in wage inequality. Sustained, meaningful real wage growth will require increased and broadly shared nominal wage growth.



Question: So why are middle-class incomes, adjusted for inflation, lower than they were before the crisis?

Answer: Middle-class income growth slowed starting in the 1970s due to a combination of slower productivity growth, rising inequality and—starting in the 1990s—falling labor force participation rates. These long-standing trends were compounded by the Great Recession.

Chapter 1 of the 2015 *Economic Report of the President* includes an extensive discussion of the role that productivity, inequality, and labor force participation play in shaping the growth of family incomes. During the first decades following World War II—until approximately 1973, as shown in Table 3—these three factors aligned to support the middle class. Labor productivity grew at an annual rate of 2.8 percent, the income distribution grew more equal, and labor force participation rose as women joined the workforce. The confluence of these three factors fostered solid underlying growth that was shared among a broad range of Americans.

**Table 3
U.S. Middle-Class Income Growth and its Determinants**

	1948-1973	1973-2013
Real Middle-Class Income Growth		
Average Household Income for the Bottom 90 Percent <i>(World Top Incomes Database)</i>	2.8%	-0.3%
Median Household Income with Benefits <i>(CBO, adj. for household size)</i>	N/A	0.4%
Median Household Income with Gov't Transfers/Taxes <i>(CBO, adj. for household size)</i>	N/A	1.0%
Productivity Growth (annual rates)		
Labor Productivity Growth	2.8%	1.8%
Income Shares		
Bottom 90 Percent	66% → 68%	68% → 53%
Labor Force Participation Rate		
Prime Age Male (25-54)	97% → 95%	95% → 88%
Prime Age Female (25-54)	35% → 52%	52% → 74%

But over the last few decades, labor productivity growth has slowed, income inequality has increased, and labor force participation has declined. And since the 1970s, middle-class incomes have grown at a substantially lower pace than they did before these shifts. Table 4 presents a set of thought experiments in which we consider the impact on middle-class incomes had these trends continued in recent years at their robust paces from earlier in the twentieth century. These thought experiments highlight how important each of these factors are for the incomes of middle class families. Indeed, if our earlier high rates of productivity growth had continued, if we had maintained our achievements in reducing inequality, and if women had continued to enter the labor force to reach parity with men, real middle-class incomes would be nearly twice the levels we experience today.

Table 4
Counterfactual Scenarios for Productivity, Equality, & Participation

Thought Experiment	Factor	Base Period	Percentage Impact on 2013 Average Income	Income Gain to 2013 Typical Household
Impact of Higher Growth	Total Factor Productivity Growth	1948-1973	58%	\$30,000
Impact of Greater Equality	Share of Income Earned by Middle	1973	18%	\$9,000
Impact of Labor Force Participation	Female Labor Force Participation Rate	1948-1995	6%	\$3,000
Combined Impact	All of the Above		98%	\$51,000

Question: What does all of this mean for what the Federal Reserve should do?

Answer: I do not comment on monetary policy. The Federal Reserve is an independent agency.

The policy of Administration officials not commenting on the Federal Reserve goes back several decades and helps the economy both by protecting the independence of the Federal Reserve and reducing uncertainty and miscommunication.

Question: Then what can the Administration do about all of this?

Answer: The President’s middle-class economics agenda aims to strengthen growth and ensure that it is widely shared.

The U.S. economy is not fully recovered, and significant resources—including in the labor market—remain underutilized. As the recovery continues to progress, it is important that we focus on the underlying structural reforms that will ensure our growth is strong and shared with all Americans. The President’s approach to economic policies, what he terms “middle-class economics,” is designed to do just that. Middle-class economics is about (i) growing the size of the pie through added productivity growth; (ii) ensuring that more people share in the benefits of that growth; and (iii) encouraging more labor force participation. The U.S. economy has substantial structural strengths and our stronger economic recovery is building on these strengths, including the lowest health cost growth in fifty years, reduced dependence on foreign oil, and enormous innovative potential. But additional policies would enable us to more fully capitalize on these strengths.

Policies such as expanded trade, new infrastructure investment, business tax reform, balanced deficit reduction that allows for more investments in research and education, including early childhood investments, are all likely to have substantial benefits for productivity growth. Labor is more productive when it works with more productive capital, and these policies are designed to strengthen the United States’ physical, human, and intellectual capital.

Another set of policies would directly reduce income inequality, including the minimum wage increase, expanded Earned Income Tax Credit, and skills training designed to help low-skill workers build their careers. These measures build on earlier income-progressive steps to reduce inequality, including the Affordable Care Act's exchange subsidies and Medicaid expansion, as well as previous reforms to the individual income tax code. Educational investments, perhaps most importantly investments in early childhood education, can both increase overall productivity and reduce income inequality.

Policy changes can also help draw new people into the work force. Working-families policies, including child-care access, high quality early childhood education, promoting workplace flexibility, paid sick leave, and tax credits for secondary earners are all examples. Policies to make career transitions easier such as a pro-work unemployment insurance program, retraining opportunities, and reduced occupational licensing barriers are another example.

Question: Wow, does this mean we really could make the economy perfect?

Notes to Figures and Tables

Figure 1

Source: Bureau of Labor Statistics, Current Employment Statistics; CEA calculations.

Figure 2

Note: All rates are expressed as a percent of the labor force and are seasonally adjusted.

Source: Bureau of Labor Statistics, Current Population Survey; CEA calculations.

Figure 3

Note: Year axis denotes first quarter of year noted.

Source: Bureau of Labor Statistics, Current Population Survey; CEA calculations.

Figure 4A

Note: Shading denotes recession. Dashed lines represent pre-Great Recession (December 2001-December 2007) averages.

Source: Bureau of Labor Statistics, Current Population Survey; CEA calculations.

Figure 4B

Note: Shading denotes recession. Dashed lines represent pre-Great Recession (December 2001-December 2007) averages.

Source: Bureau of Labor Statistics, Current Population Survey; CEA calculations.

Figure 5

Note: Increases are measured from the first month of the recession to the peak in the overall unemployment rate. The 1980s recessions are consolidated into a single cycle.

Source: Bureau of Labor Statistics, Current Population Survey; CEA calculations.

Table 1

Source: Bureau of Economic Analysis, National Income and Product Accounts.

Table 2

Note: Mean output refers to the average of GDP and GDI. The quarterly growth rate of real GDP is regressed on four lags of growth rates for the listed variables over 1984:Q1 to 2014:Q4, using revised data.

Source: Bureau of Economic Analysis, National Income and Product Accounts; CEA calculations.

Figure 6

Source: Bureau of Economic Analysis, National Income and Product Accounts of the United States; CEA calculations.

Figure 7

Note: Residual includes the growth rate of the labor force participation rate, the employment rate, the work week, the productivity differential and the ratio of the population (16+) to potential labor force. Diamonds indicate the annualized growth of the geometric mean of GDP and GDI.

Source: Bureau of Economic Analysis; CEA Calculations.

Figure 8

Note: The 1960–2007 average excludes the 1980 recession due to overlap with the 1981–82 recession.

Source: Bureau of Economic Analysis, National Income and Product Accounts; National Bureau of Economic Research; CEA calculations.

Figure 9A

Note: Shading denotes recession.

Source: Federal Reserve Board, Financial Accounts of the United States.

Figure 9B

Note: Shading denotes recession.

Source: Federal Reserve Board, Financial Accounts of the United States.

Figure 10

Source: Bureau of Economic Analysis; national sources via Haver Analytics; CEA calculations.

Figure 11

Note: Data is displayed in calendar year terms for all series.

Source: Congressional Budget Office, The Budget and Economic Outlook: 2014 to 2024; Office of Management and Budget; Bureau of Economic Analysis, National Income and Product Accounts.

Figure 12

Note: Annualized percent change in nonfarm business productivity is approximately equal to the sum of the growth rates of total factor productivity, capital intensity and labor composition.

Diamonds indicate nonfarm business labor productivity growth.

Source: Bureau of Labor and Statistics; CEA calculations.

Figure 13

Source: National sources via Haver Analytics; CEA calculations.

Figure 14

Source: Bureau of Labor Statistics, Current Employment Statistics; CEA calculations.

Table 3

Note: Income levels from the World Top Incomes Database are deflated with the CPI-U-RS price index, and income levels from the Congressional Budget Office (CBO) are deflated with the personal consumption expenditures price index. Income shares are provided by the World Top Incomes Database, cited below, and median household income including benefits, transfers, and taxes is provided by CBO. CBO median income is extended before 1979 and after 2010 with the growth rate of Census median income.

Source: World Top Incomes Database; Census Bureau; Congressional Budget Office; Bureau of Labor Statistics; Bureau of Economic Analysis; CEA calculations.

Table 4

Note: These thought experiments are intended to demonstrate the importance of these three factors for middle-class incomes. They do not consider second-order effects or interactive effects. The first thought experiment assumes that an increase in productivity is associated with an equal increase in the Census Bureau's mean household income. The second thought experiment uses the Census Bureau's mean income of the middle quintile as a proxy for median income. The third thought experiment assumes that newly-participating women will have the same average earnings as today's working women, and halts the growth of female labor force participation when it reaches parity with male participation. The first and third thought experiments assume that income gains are distributed proportionally such that mean and median incomes grow at the same rate. Dollar gains are calculated off a base of the Census Bureau's median household income in 2013. The fourth thought experiment compounds the effects of the first three.

Source: World Top Incomes Database; Census Bureau; Congressional Budget Office; Bureau of Labor Statistics, Current Population Survey; Bureau of Economic Analysis; CEA calculations.