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## **Patience Is a Virtue When Normalizing Monetary Policy**

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The views expressed today are my own and not necessarily  
Those of the Federal Reserve System or the FOMC.

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Thank you.

I would like to thank the Peterson Institute and Adam Posen for organizing this conference focusing on labor market issues. The functioning of the labor market is always of great interest to both academics and policymakers. But today, with the collapse of labor demand during the Great Recession and ongoing structural changes, judging the health and future of labor markets is both especially challenging and important. The work presented at this conference and others like it offer an opportunity to integrate the most recent research with the thinking of policymakers. In keeping with this theme, I will first offer my views on the labor market and how the issues raised here influence my thinking on monetary policy, and I will then discuss my more general strategy for considering when and how we should begin to normalize monetary policy.

Before I begin, let me note that the views I express are my own and do not necessarily represent those of my colleagues on the Federal Open Market Committee (FOMC) or within the Federal Reserve System.

### **Introduction and Summary**

Five long years have passed since the trough of the Great Recession, in mid-2009. Late that year the unemployment rate stood at an astonishing 10.0 percent. Since then, we have made significant progress in moving the unemployment rate back to a more normal number. Yet, at 6.1 percent, it remains too high. And, as we have heard all morning, other measures of labor market activity remain suppressed.

We have underperformed on the inflation front as well. Since 2008, year-over-year total inflation as measured by the Personal Consumption Expenditures Price Index (PCE) has averaged just 1.4 percent, well below its 2 percent target. Today, PCE inflation stands at 1-1/2 percent and is expected to move up only slowly toward the FOMC's target.

Nonetheless, we have come a long way in healing the injuries the financial crisis inflicted. Certainly monetary policy has been doing some heavy lifting. The Federal Reserve responded quickly to the unfolding recession by cutting the fed funds rate to near zero by December 2008. At the zero lower bound (ZLB), we then turned to unconventional measures, such as large-scale asset purchases and forward guidance about the federal funds rate to provide further accommodation. In the fall of 2012, with the unemployment rate hovering stubbornly at around 8 percent and core inflation steadily drifting lower than our 2 percent target, the Fed introduced open-ended asset purchases and, later, forward guidance that related federal funds rate actions to thresholds explicitly expressed in terms of our policy goals. Together, these efforts have

helped the economy make impressive progress toward our employment mandate and appear to be moving us closer to our 2 percent inflation target as well.

With the economy undershooting both our employment and inflation goals, monetary policy does not presently face a conflict in goals; actions that support employment growth also help move inflation up toward our target. Yet, as I look to the future and assess risks, I foresee a time when a policy dilemma might emerge: Namely, we could find ourselves in a situation in which the progress or risks to one of our goals dictate a tightening of policy while the achievement of the other goal calls for maintaining strong accommodation.

So what happens when a conflict emerges? In such cases, the FOMC has said that it will follow a “balanced approach” to achieving its policy goals. I will elaborate at length on this later, but let me summarize how I think we should operationalize this approach today. We should keep our focus on our policy goals and should be highly attuned to both the likelihood and the costs of missing those goals. To me, the risks imposed on an economy forced to operate at the zero lower bound on policy rates are paramount. Accordingly, before the Fed raises rates we should have a great deal of confidence that we won’t be forced to backtrack on our moves and face another painful period at the ZLB. We should be exceptionally patient in adjusting the stance of U.S. monetary policy — even to the point of allowing a modest overshooting of our inflation target to appropriately balance the risks to our policy objectives.

### **Conflicting Signs in the Labor Market**

Of course, to judge the success of policy, you have to know when you’ve actually reached your targets. Knowing when we hit our inflation target is straightforward. After all, a 2 percent increase in PCE prices is an easily identifiable number. But full employment is a far more nuanced concept. As the FOMC’s annual January “Statement on Longer-Run Goals and Monetary Policy Strategy” recognizes, maximum employment can be influenced by a large number of structural factors that can change over time and may not be directly measureable. In light of this uncertainty, the Committee considers many factors in gauging maximum employment. As the extremely relevant research presented at this conference makes clear, judging the degree of slack along these many dimensions is a difficult and complex task. But it is one that is critical for the conduct of monetary policy — we must have a good idea of what constitutes achievement of our full employment target.

Our Chicago Fed research staff has been working long and hard, and in my remarks today, I will briefly talk about some of our results that touch on several of the most contested labor market issues on the table today. These involve labor force participation, job openings and wages. To give you the punch line, this research and work done by others in the field lead me to conclude that, although we have made great strides, a good deal of slack remains in the labor market.

### **Labor Force Participation and Employment**

As everyone in this room is aware, the labor force participation rate has fallen throughout the recession and recovery and is now at a 35-year low.<sup>1</sup> As Julie Hotchkiss described earlier this morning, it is well understood that much of the decline is due to trends that far predate the Great Recession. The movement of baby boomers into retirement age and the long-running declines in teenager and prime-age male participation would have significantly reduced labor force participation rates independently of the economic downturn.

Chicago Fed economists first did work on the prospects for a declining labor force participation trend back in 2001 — near the time the rate peaked at just over 67 percent.<sup>2</sup> Even after revisiting this topic numerous times and with multiple generations of research assistants running the programs, their views about the trends that are consistent with the composition of the population and a labor market near equilibrium have not changed much since then.<sup>3</sup> Among the many robustness analyses they performed, their models produce nearly the same trend for labor force participation as they have since 2001.<sup>4</sup>

Depending on the details of the specification, Chicago Fed economists estimate that at the end of the second quarter of 2014, the labor force participation rate was between 1/2 and 1-1/4 percentage points below trend. Furthermore, the participation rate was as much as 3/4 of a percentage point below predictions based on its historical relationship with the unemployment rate. This disparity suggests that there likely is an extra margin of slack in labor markets beyond that indicated by the unemployment rate alone.

It is interesting to dig further into these “labor force participation gaps.” Virtually all the gap during this cycle has been due to withdrawal from the labor market of workers without a college degree. By contrast, a participation gap never materialized for college graduates, even during the depths of the recession. There is no simple explanation for this striking contrast. It could be yet another symptom of long-running but difficult-to-model trends in the economy, such as job polarization and changes in social programs, which particularly impact the lower-skill work force.<sup>5</sup> Regardless, the divergent work

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<sup>1</sup> The labor force participation rate is defined as the share of the population aged 16 and older who are either employed or unemployed. To be unemployed, a person has to not have a job but be actively looking for work in the prior four weeks and to be currently available to work. These data are collected by the U.S. Bureau of Labor Statistics as part of its monthly *Current Population Survey*.

<sup>2</sup> Aaronson and Sullivan (2001).

<sup>3</sup> Aaronson et al. (2014).

<sup>4</sup> Specifically, the trends generated by Chicago Fed economists’ preferred models are very close whether they are estimated using data through 2002, 2007 or 2014.

<sup>5</sup> See, for example, Acemoglu and Autor (2011) and Charles, Hurst and Notowidigdo (2013). See Shierholz, Mishel and Schmitt (2013) for a skeptical view. An alternative explanation is based on changes in the use of social safety net programs, especially disability insurance (DI), that are partly cyclical in nature. The DI rolls have been increasing throughout this business cycle, although they have been on the rise, more or less uninterrupted, since the 1990s (Autor, 2011; and Burkhauser and Daly, 2011). The DI program tends to be cyclical partly because eligibility standards ease amid deteriorating labor market conditions (Mueller, Rothstein and von Wachter, 2013). That is, people with moderate disabilities are more likely to qualify for the DI program when there are fewer suitable jobs available.

behavior across education groups strikes me as an important fact and deserving of much further research attention.

The declining trend in labor force participation also influences how fast the economy can produce new jobs in the long run. Our estimate of the trend in payroll employment growth over the past 15 years averages roughly 100,000 jobs per month. Looking ahead, we think that declines in the labor force participation rate and population growth will bring the trend in payroll employment growth down to fewer than 50,000 jobs per month by 2016. This new benchmark probably will only become apparent in the monthly data once the economy closes the current 3.8 million employment gap. But barring sizable changes in immigration policy, policymakers and the public will need to get accustomed to a slower base of employment growth by the latter part of the decade.

### **Job Openings and Hiring**

This brings me to the issue of hiring and job openings. The job openings rate, as measured by the U.S. Bureau of Labor Statistics' *Job Openings and Labor Turnover Survey* (JOLTS) data, started climbing immediately after the recession and made it back to its pre-recession high this summer.<sup>6</sup> Yet, despite some improvement, the JOLTS hiring rate remains disappointingly below where it stood before the recession began.<sup>7</sup>

Why might firms advertise openings aggressively but be slower to fill them? Posting a vacancy is only part of the hiring process. Jason Faberman of the Chicago Fed, in collaboration with Steve Davis of the University of Chicago and John Haltiwanger of the University of Maryland, estimate that the overall effort that firms actually are putting into filling a job vacancy fell by over 20 percent during the recession. It has been slow to recover since and today still stands 8 percent below its 2006 peak and, for that matter, below where it was anytime during the last expansion.<sup>8</sup>

Davis, Faberman and Haltiwanger argue that low recruiting intensity may reflect employers' increased hiring standards. It could be that hiring standards become more stringent during an economic downturn. For example, if there is an unusually high degree of downward nominal wage rigidity, as Mary Daly and Bart Hobijn of the San Francisco Fed document has been the case over this cycle,<sup>9</sup> then employers may respond by filling fewer openings. If this story is true, then the high ratio of vacancies to hires is a further indication of slack in the labor market.

Alternatively, more stringent hiring standards might signal a persistent structural problem. For years, I've been hearing business people complain of difficulty in finding sufficiently qualified candidates. Furthermore, we hear anecdotes about firms being extremely picky and waiting for the perfect applicant. These behaviors may be indicative

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<sup>6</sup> The job openings rate is the number of job openings on the last business day of the month as a percent of total employment plus job openings.

<sup>7</sup> The hiring rate stood at 4.0 percent at its 2006 peak and fell to as low as 2.8 percent in 2009. Today, it is 3.5 percent.

<sup>8</sup> See Dice Hiring Indicators (2014).

<sup>9</sup> Daly and Hobijn (2014).

of a skills mismatch between jobs and workers. If this is the case, then it is possible that the steady-state level of the vacancy rate has increased, which would help explain why the improvement in vacancies we've seen over the past few years has been slow to translate into similar progress on hiring.

## **Wages**

If skills mismatch were an ongoing problem, we'd expect to see wages rising for those with the skills in demand. There is evidence of increasing wages in some occupations, but wage growth in general continues to be very modest at about 2-1/4 percent per year. That is a long way from the 3 to 4 percent benchmark implied by productivity growth and our inflation objective. Indeed, over the past three years, the unemployment rate has fallen by a percentage point per year; yet real wage growth has barely budged. It's hard for me to imagine a full labor market recovery without genuine improvement in compensation growth. But am I wrong? Has the wage Phillips curve completely broken down?

Some claim the answer is no — you just have to look at the right measure of unemployment. Alan Krueger, Judd Cramer and David Cho, among others, have shown that the relationship between real wages and the short-term unemployment rate during this cycle has been in line with historical norms, whereas the historical spike in long-term unemployment exerted minimal pressure on real wage growth.<sup>10</sup> Of course, the short-term unemployment rate is now close to its pre-recession level. So their model implies nominal wage growth should be returning to something close to the fundamentals implied by productivity growth and inflation.

My staff's research comes to a somewhat different conclusion. Using models similar to those Michael Kiley presented here this morning,<sup>11</sup> they find that pools of potential workers other than the short-term unemployed, notably the medium-term unemployed and the involuntary part-time work force, substantially influence wage growth at the state or metropolitan statistical area (MSA) level.<sup>12</sup> Today, medium-term unemployment is down a good deal, but the involuntary part-time work force is still very high. According to their model estimates, if labor market conditions were at their 2005–07 levels, average real wage growth would be roughly 1/2 to 1 percentage point higher over the past year — another sign of the cyclical shortfall in labor market health.

To sum up, with many important measures of labor market activity still well short of our estimates of cyclical norms, I believe it is a bit premature to say that we are close to our full employment target. That said, while it has taken longer than anyone would like, our

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<sup>10</sup> Krueger, Cramer, and Cho (2014). This same result appears for the price Phillips curve, as shown, for example, by Gordon (2013).

<sup>11</sup> Kiley (2014).

<sup>12</sup> Aaronson and Jordan (2014). The medium-term unemployed are those unemployed five to 26 weeks. Persons employed part time involuntarily for economic reasons (such as slack work or unfavorable business conditions) are those who want and are available for full-time work but have had to settle for a part-time job.

progress has been good. And there is good reason to anticipate that we will achieve full employment and price stability within the FOMC's current forecast horizon. Indeed, in the Committee's *Summary of Economic Projections* released about a week ago, most participants anticipated that the unemployment rate would return to its long-run neutral level by the end of 2016 and that inflation then would be in the range of 1-3/4 to 2 percent.

## **A Balanced Approach to Monetary Policy**

Now let me turn to my views on monetary policy.

I can't speak to my FOMC colleagues' forecasts and how they interact with their views regarding appropriate policy. But, for my part, I think it is more likely that we will achieve our employment mandate before inflation is clearly headed back to 2 percent. Conceptually, this could raise a policy dilemma — achieving our inflation objective would call for strong accommodation, while achieving our employment target usually would call for earlier policy normalization. However, the story is even more complicated than that because important risk factors also come into play. In some ways the insight from Nobel laureates Lars Hansen and Tom Sargent regarding robust control evaluations help form my assessment.<sup>13</sup> I see two important and divergent ways my forecast could go wrong. One is that I may be overestimating the underlying strength in the real economy and its ability to exit from the ZLB. Guarding against this risk calls for a more patient removal of accommodation. The second is that I may be wrong about the inflation outlook, and we could be poised for a much stronger rise in inflation than I am forecasting. This risk calls for more aggressive rate hikes.

How do I think policy should balance these divergent risks? How should these risks affect my views about how to follow the FOMC strategy of pursuing a balanced approach to achieving our policy goals?

In my mind, current circumstances and a weighing of alternative risks mean that a balanced policy approach calls for being patient in reducing accommodation — that is, being patient about when we first increase the federal funds rate and being patient about setting the pace of rate increases once we have begun to move. Let me explain how I get there.

## **Proceed Cautiously in Normalizing Policy**

To say the least, conducting monetary policy at the ZLB has been a difficult experience that we all want to avoid repeating unnecessarily. In the winter of 2009, with the unemployment rate soaring to double digits, the Fed would have very much liked to lower the nominal federal funds rate an additional 300 basis points; but we couldn't because the rate was already at zero. Faced with a pressing need to provide additional accommodation, we were forced to turn to innovative, but controversial, unconventional monetary policies. These policies have been extremely helpful. But there is no denying that they were second-best options; the ZLB had made lowering the fed funds rate,

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<sup>13</sup> See, for example, Hansen and Sargent (2008).

which is our first-best interest rate tool, infeasible.

Everyone will welcome a return to more normal times and a reliance on the traditional policy framework of adjustments to the federal funds rate. But the decision about when to begin to raise rates shouldn't be made prematurely. Rather, the decision for policy liftoff has to be made for the right reasons — that is, it should be dictated by economic conditions.

I have said many times that I agree with Minneapolis Fed President Narayana Kocherlakota: Policy at all times must be goal-oriented.<sup>14</sup> Our experiences since the crisis began and current economic conditions are highly unusual. The FOMC should not simply set its policy instruments by mechanically aligning them with historical norms if those norms are not relevant harbingers for the attainment of both of our dual mandate goals. Rather, our policy instruments should be set to achieve our ultimate goals as efficaciously as possible given current and prospective economic conditions, all the while with an eye on managing against important risks to the outlook.

What does that mean now? I believe that the biggest risk we face today is prematurely engineering restrictive monetary conditions. In this scenario, the FOMC could misjudge the presence and magnitude of economic impediments and misread the recent progress we have made as evidence of sounder economic trends. If we were to presume prematurely that the U.S. economy has returned to a more “business as usual” position and reduce monetary accommodation too soon, we could find ourselves in the very uncomfortable position of falling back into the ZLB environment. Such an outcome could be a serious setback to the timely attainment of our dual mandate policy objectives.

This risk consideration means that the decision to lift the funds rate from zero should be made only when we have a great deal of confidence that growth has enough momentum to reach full employment and that inflation will return sustainably to 2 percent. We should also proceed cautiously and keep the path of rate increases relatively shallow for some time after we begin to raise rates. This approach will allow us time to assess how the economy is performing under less accommodative financial conditions and reduce the odds of overaggressive rate hikes choking off progress toward our policy goals.

## **History Shows That Premature Exit Is a Risk**

### **Great Depression**

Past experience with the zero lower bound also counsels patience. History has not looked kindly on attempts to prematurely remove monetary accommodation from economies that are in or near a liquidity trap. The U.S. experience during the Great Depression — in particular, in 1937 — is a classic example for monetary historians: In response to the positive growth and reflation that occurred after devaluation and suspension of gold convertibility, the Fed raised reserve requirements, the Treasury sterilized gold inflows, and there was a fiscal contraction. Subsequently, the economy

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<sup>14</sup> See, for example, Kocherlakota (2013).

dropped back into recession and deflation. During this time, interest rates remained very low. The discount rate was lower after 1937 than before, and Treasury bill rates were less than 1 percent. By many economic accounts, it took the big fiscal expansion associated with World War II to exit the Great Depression.

### **Japan over the Past 20 Years**

We can also learn from the Japanese experience over the past 20 years. After attempting to expand production and avoid deflationary prospects in the late 1990s, monetary policy reversed course prematurely in the early 2000s as the inflation rate inched above zero; deflationary pressures soon reemerged and policy rates returned to zero by 2001. This experience was repeated again later in the decade. Indeed, it has only been over the past year — following nearly 20 years of stagnation — that we see the recent goal-oriented monetary expansion making significant headway in extracting Japan from below-target inflation.

### **Recent European Experience**

The recent European experience in 2011 is yet another example of premature tightening. Despite the headwinds from continuing debt-overhang and recent financial distress, European authorities in 2011 judged that the eurozone economy was emerging from recession and headline inflation was at risk to rise persistently above target. The European Central Bank (ECB) responded by raising policy rates in 2011. They soon had to backtrack as output in the eurozone fell again and inflation began to march down below target. Today, the eurozone faces continued economic weakness and an inflation rate that is just about 1/2 percent. As a result, the ECB recently lowered policy rates to the ZLB, has started undertaking additional unconventional monetary policies, and is now encouraging fiscal expansion among eurozone countries that are able to do so.

These lessons from monetary history strongly suggest that there are great risks to premature liftoff from the zero lower bound or near-ZLB conditions. Unless economic conditions are fundamentally strong and the previous impediments to growth have receded sufficiently, the odds remain high that monetary authorities will need to retreat right back into the ZLB.

And the costs of being mired in the zero lower bound are simply very large. I have already talked about how the ZLB prevents using our very best policy tools to address negative shocks. The constraint also means that interest rates cannot fall low enough to equate the supply of saving with the demand for investment. This, of course, significantly impedes capital formation, future economic growth, and further employment expansion. Furthermore, the ZLB often comes hand in hand with undesirably low inflation or even a falling price level, carrying with it the associated costs of debt deflation on the real economy.

### **The Risk of Too-High Inflation**

What about the other risk to our policy goals that I mentioned — the risk that the U.S. economy could face pricing pressures that accelerate rapidly and ultimately leave

inflation far above our 2 percent target for an unacceptably long period?

At some point when the economy has clearly overcome the remaining impediments from the largest economic and financial downturn since the Great Depression, the odds of inflation rising noticeably above target could become palpable. But such a breakout is just not at all very likely today. Indeed, many Fed critics have been voicing this concern since 2009, and it hasn't even come close to happening.

What if inflation just ran moderately above target for some time? Well, I see the costs of this outcome as clearly being much smaller than the costs of falling back into the ZLB. First, I believe the U.S. economy could weather the modest increases in interest rates that would be needed to keep inflation in check. Such rate increases would be manageable for the real economy; this is particularly true if industry and labor markets have already made the most difficult reallocations of jobs and overcome other factors so that productive resources are more efficiently and fully employed. Second, as I've noted many times in the past, a symmetric inflation target means we should be averaging 2 percent inflation over time. We've averaged well under that 2 percent mark for the past six and a half years. With a symmetric inflation target, one could imagine moderately-above-target inflation for a limited period of time as simply the flip side of our recent inflation experience — and hardly an event that would impose great costs on the economy.

The murky state of inflation expectations is another factor that enters my risk management considerations. For inflation to take off rapidly, we would have to see a jump in inflationary expectations. But inflationary expectations have been quite stable. Indeed, we may be facing a quite different problem. Many forecasters — myself included — assume that stable 2 percent inflation expectations will be an important factor helping to pull actual inflation up. Over the past five years, professional forecasters' projections for long-run inflation have been at the 2 percent target and Treasury Inflation-Protected Securities (TIPS) break-evens have been flat. Yet actual inflation has only just recently made it back up to 1-1/2 percent. Moreover, we still have not seen much at all in the way of higher inflation compensation being built into interest rates or wages. So there is cause for concern that expectations might not produce as strong a pull on inflation as we hope.

We can turn to the Japanese experience again to highlight this risk. Long-run inflation expectations in Japan have averaged a little over 1 percent. Yet during that period, the only time inflation was palpably above zero — let alone not in outright deflation — was when consumption taxes increased or oil prices spiked. So inflation expectations may remain stable while inflation itself lags for a prolonged period.

## **Conclusion**

As I think about the process of normalizing policy, I conclude that today's risk-management calculus says we should err on the side of patience in removing highly accommodative policy. We need to solidify our confidence that our ultimate exit from the

zero lower bound will occur smoothly — and in a way that sustains our escape from it. A corollary to this is we should not shy away from policy prescriptions that generate forecasts of inflation that moderately overshoot our 2 percent target for a limited time. Such a policy strategy more properly balances expected costs and benefits. And it would leave me with much more confidence that inflation will not stall out below target once we start raising rates.

I agree with Atlanta Fed President Lockhart in thinking that we ought to be “whites of their eyes” inflation fighters.<sup>15</sup> The last thing we want to do is regress back into the ZLB. Indeed, such a relapse would be a sign there was something else going on that was preventing the economy from being as vibrant as we thought possible.

To summarize, I am very uncomfortable with calls to raise our policy rate sooner than later. I favor delaying liftoff until I am more certain that we have sufficient momentum in place toward our policy goals. And I think we should plan for our path of policy rate increases to be shallow in order to be sure that the economy’s momentum is sustainable in the presence of less accommodative financial conditions.

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<sup>15</sup> Lockhart (2014).

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