The Economic Club of New York

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109th Year

The Honorable Janet L. Yellen
Chair, Board of Governors
Federal Reserve System

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Questioners: Alan Blinder
Professor of Economics at Princeton University

Glenn Hubbard
Dean, Columbia School of Business

Introduction

Chairman William C. Dudley

Welcome to the 452nd meeting of the Economic Club of New York in our 109th year. I'm Bill Dudley, Chairman of the Economic Club of New York and President of the Federal Reserve Bank of New York. The Economic Club of New York is the nation's leading nonpartisan forum for speeches on economic, social, and political issues. More than 1,000 prominent guest speakers have appeared before the club over the past century, and we've established a strong tradition of excellence.

I want to personally recognize and thank the 232 members of the Centennial Society. These club members continue to make an extraordinary contribution to ensure the financial stability of the club in its second century. Their names are in your programs. I'd also like to welcome students from NYU Stern School of Business whose attendance was made possible by a club member.

It gives me great pleasure today to welcome Federal Reserve Chair, Janet Yellen, a native daughter of this great city, to address the club once again. Dr. Yellen became Chair of the Board of Governors of the Federal Reserve System in February 2014. Prior to her appointment as Chair, she served as Vice Chair of the Board of Governors. She is Professor Emeritus at the University of California at Berkeley and formerly served as President of the Federal Reserve Bank of San Francisco and Chair of the Council of Economic Advisers. She graduated with a

summa cum laude from Brown in 1967 and received her PhD in Economics from Yale in 1971.

As Vice Chair of the FOMC, I have the great pleasure of working closely with Janet. She is an accomplished, committed, and thoughtful steward of the Federal Reserve. I am very fortunate that I've had the opportunity to work closely with her over the past decade. She is a wonderful colleague and trusted friend. Following her speech, as is our custom, two designated club members will ask her questions. Janet, the floor is yours. (Applause)

The Honorable Janet L. Yellen, Chair

Board of Governors

Federal Reserve System

Bill, thanks so much for that lovely introduction and good afternoon everyone. For more than a century, the Economic Club of New York has served as one of the nation's leading nonpartisan forums for discussion of economic policy issues. It's an honor to appear before you today to speak about the Federal Reserve's pursuit of maximum employment and price stability.

In December, the Federal Open Market Committee raised the target range for the federal funds rate, the Federal Reserve's main policy rate, by 1/4 percentage point. This small step marked the end of an extraordinary seven-year period during which the federal funds rate was held near zero to support the recovery from the worst financial crisis and recession since the Great Depression.

The Committee's action recognized the considerable progress that the U.S. economy had made in restoring the jobs and incomes of millions of Americans hurt by this downturn. It also reflected an expectation that the economy would continue to strengthen and that inflation, while low, would move up to the FOMC's 2 percent objective as the transitory influences of lower oil prices and a stronger dollar gradually dissipate and as the labor market improves further. In light of this expectation, the Committee stated in December, and reiterated at the two subsequent meetings, that it "expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate."

In my remarks today, I will explain why the Committee anticipates that only gradual increases in the federal funds rate are likely to be warranted in coming years, emphasizing that this guidance should be understood as a forecast for the trajectory of policy rates that the Committee anticipates will prove to be appropriate to achieve its objectives, conditional on the outlook for real economic activity and inflation. Importantly, this forecast is not a plan set in stone that will be carried out regardless of economic developments. Instead, monetary policy will, as always, respond to the economy's twists and turns so as to promote, as best we can in an uncertain economic environment, the employment and inflation goals assigned to us by the Congress.

The proviso that policy will evolve as needed is especially pertinent today in light of global economic and financial developments since December, which at times have included significant changes in oil prices, interest rates, and stock values. So far, these developments have not

materially altered the Committee's baseline – or most likely – outlook for economic activity and inflation over the medium term.

Specifically, we continue to expect further labor market improvement and a return of inflation to our 2 percent objective over the next two or three years, consistent with data over recent months. But this is not to say that global developments since the turn of the year have been inconsequential. In part, the baseline outlook for real activity and inflation is little changed because investors responded to those developments by marking down their expectations for the future path of the federal funds rate, thereby putting downward pressure on longer-term interest rates and cushioning the adverse effects on economic activity. In addition, global developments have increased the risks associated with that outlook. In light of these considerations, the Committee decided to leave the stance of policy unchanged in both January and March.

I will next describe the Committee's baseline economic outlook and the risks that cloud that outlook, emphasizing the FOMC's commitment to adjust monetary policy as needed to achieve our employment and inflation objectives.

Readings on the U.S. economy since the turn of the year have been somewhat mixed. On the one hand, many indicators have been quite favorable. The labor market has added an average of almost 230,000 jobs a month over the past three months. In addition, the unemployment rate has edged down further, more people are joining the workforce as the prospects for finding jobs have

improved, and the employment to population ratio has increased by almost ½ percentage point. Consumer spending appears to be expanding at a moderate pace, driven by solid income gains, improved household balance sheets, and the ongoing effects of the increases in wealth and declines in oil prices over the past few years. The housing market continues its gradual recovery and fiscal policy at all levels of government is now modestly boosting economic activity after exerting a considerable drag in recent years.

On the other hand, manufacturing and net exports have continued to be hard hit by slow global growth and the significant appreciation of the dollar since 2014. These same global developments have also weighed on business investment by limiting firms' expected sales, thereby reducing their demand for capital goods; partly as a result, recent indicators of capital spending and business sentiment have been lackluster. In addition, business investment has been held down by the collapse in oil prices since late 2014, which is driving an ongoing steep decline in drilling activity. Low oil prices have also resulted in large-scale layoffs in the energy sector and adverse spillovers to output and employment in industries that support energy production.

On balance, overall employment has continued to grow at a solid pace so far this year, in part because domestic household spending has been sufficiently strong to offset the drag coming from abroad. Looking forward however, we have to take into account the potential fallout from recent global economic and financial developments, which have been marked by bouts of turbulence since the turn of the year. For a time, equity prices were down sharply, oil traded at

less than $30 per barrel, and many currencies were depreciating against the dollar. Although prices in these markets have since largely returned to where they stood at the start of the year, in other respects economic and financial conditions remain less favorable than they did back at the time of the December FOMC meeting. In particular, foreign economic growth now seems likely to be weaker this year than previously expected, and earnings expectations have declined.

By themselves, these developments would tend to restrain U.S. economic activity. But those effects have been at least partially offset by downward revisions to market expectations for the federal funds rate that in turn have put downward pressure on longer-term interest rates, including mortgage rates, thereby helping to support spending. For these reasons, I anticipate that the overall fallout for the U.S. economy from global market developments since the start of the year will most likely be limited, although this assessment is subject to considerable uncertainty.

All told, the Committee continues to expect moderate economic growth over the medium term accompanied by further labor market improvement. Consistent with this assessment, the medians of the individual projections for economic growth, unemployment, and inflation made by all of the FOMC participants for our March meeting are little changed from December. A key factor underlying such modest revisions is a judgment that monetary policy remains accommodative and will be adjusted at an appropriately gradual pace to achieve and maintain our dual objectives of maximum employment and 2 percent inflation. Reflecting global economic and financial developments since December, however, the pace of rate increases is now expected to be

somewhat slower. For example, the median of FOMC participants' projections for the federal funds rate is now only 0.9 percent for the end of 2016 and 1.9 percent for the end of 2017, both ½ percentage point below the December medians.

As has been widely discussed, the level of inflation-adjusted or real interest rates needed to keep the economy near full employment appears to have fallen to a low level in recent years. Although estimates vary both quantitatively and conceptually, the evidence on balance indicates that the economy's neutral real rate – that is, the level of the real federal funds rate that would be neither expansionary nor contractionary if the economy was operating near its potential – that rate is likely now close to zero. However, the current real federal funds rate is even lower, at roughly minus 1-1/4 percentage point, when measured using the 12-month change in the core price index for personal consumption expenditures that excludes food and energy. Thus, the current stance of monetary policy appears to be consistent with actual economic growth modestly outpacing potential growth and further improvements in the labor market.

Looking beyond the near term, I anticipate that growth will also be supported by a lessening of some of the headwinds that continue to restrain the U.S. economy, which include weak foreign activity, dollar appreciation, a pace of household formation that has not kept up with population and income growth and so has depressed homebuilding, and productivity growth that has been running at a slow pace by historical standards since the end of the recession. If these headwinds gradually fade as I expect, the neutral federal funds rate will also rise, in which case it will, all

else equal, be appropriate to gradually increase the federal funds rate more or less in tandem to achieve our dual objectives. Otherwise, monetary policy would eventually become overly accommodative as the economy strengthened.

Implicitly, this expectation of fading headwinds and a rising neutral rate is a key reason for the FOMC's assessment that gradual increases in the federal funds rate over time will likely be appropriate. That said, this assessment is only a forecast. The future path of the federal funds rate is necessarily uncertain because economic activity and inflation will likely evolve in unexpected ways. For example, no one can be certain about the pace at which economic headwinds will fade. More generally, the economy will inevitably be buffeted by shocks that cannot be foreseen. What is certain, however, is that the Committee will respond to changes in the outlook as needed to achieve its dual mandate.

Turning to inflation, here too the baseline outlook is little changed. In December, the FOMC anticipated that inflation would remain low in the near term due to the drag from lower prices for energy and imports. But as those transitory effects faded, the Committee expected inflation to move up to 2 percent over the medium term, provided the labor market improves further and inflation expectations are stable. This assessment still seems to me to be broadly correct. PCE prices were up only 1 percent in February relative to a year earlier, held down by earlier declines in the price of oil. In contrast, core PCE inflation, which strips out volatile food and energy components, was up 1.7 percent in February on a 12-month basis. That's somewhat more than

my expectation in December, but it's too early to tell if this recent faster pace will prove durable. Even when measured on a 12-month basis, core inflation can vary substantially from quarter to quarter and earlier dollar appreciation is still expected to weigh on consumer prices in the coming months.

For these reasons, I continue to expect that overall PCE inflation for 2016 as a whole will come in well below 2 percent but will then move back to 2 percent over the course of 2017 and 2018, assuming no further swings in energy prices or the dollar. This projection, however, depends critically on expectations for future inflation remaining reasonably well anchored. It is still my judgment that inflation expectations are well anchored, but as I will shortly discuss, continued low readings for some indicators of expected inflation do concern me.

Although the baseline outlook has changed little on balance since December, global developments pose ongoing risks. These risks appear to have contributed to the financial market volatility witnessed both last summer and in recent months.

One concern pertains to the pace of global growth, which is importantly influenced by developments in China. There is a consensus that China's economy will slow in the coming years as it transitions away from investment toward consumption and from exports toward domestic sources of growth. There is much uncertainty, however, about how smoothly this transition will proceed and about the policy framework in place to manage any financial

disruptions that might accompany it. These uncertainties were heightened by market confusion earlier this year over China's exchange rate policy.

A second concern relates to the prospects for commodity prices, particularly oil. For the United States, low oil prices, on net, will likely boost spending and economic activity over the next few years because we are still a major oil importer. But the apparent negative reaction of financial markets to recent declines in oil prices may in part reflect market concern that the price of oil was nearing a financial tipping point for some countries and energy firms. In the case of countries reliant on oil exports, the result might be a sharp cutback in government spending. For energy-related firms, it could entail significant financial strains and increased layoffs. In the event oil prices were to fall again, either development could have adverse spillover effects to the rest of the global economy.

If such downside risks to the outlook were to materialize, they would likely slow U.S. economic activity, at least to some extent, both directly and through financial market channels as investors respond by demanding higher returns to hold risky assets, causing financial conditions to tighten. But at the same time, we should not ignore the welcome possibility that economic conditions could turn out to be more favorable than we now expect. The improvement in the labor market in 2014 and 2015 was considerably faster than expected by either FOMC participants or private forecasters, and that experience could be repeated if, for example, the economic headwinds we face were to abate more quickly than anticipated. For these reasons, the FOMC must watch

carefully for signs the economy may be evolving in unexpected ways, good or bad.

The inflation outlook has also become somewhat more uncertain since the turn of the year, in part for reasons related to risks to the outlook for economic growth. To the extent that recent financial market turbulence signals an increased chance of a further slowing of growth abroad, oil prices could resume falling, and the dollar could start rising again. And if foreign developments were to adversely affect the U.S. economy by more than I expect, then the pace of labor market improvement would probably be slower, which would also tend to restrain growth in both wages and prices. But even if such developments were to occur, they would, in my view, only delay the return of inflation to 2 percent, provided that inflation expectations remain anchored.

Unfortunately, the stability of longer-run inflation expectations cannot be taken for granted. During the 1970s, inflation expectations rose markedly because the Federal Reserve allowed actual inflation to ratchet up persistently in response to economic disruptions – a development that made it more difficult to stabilize both inflation and employment. With considerable effort, however, the FOMC gradually succeeded in bringing inflation down to a low and stable level over the course of the 1980s and early 1990s. Since this time, measures of longer-run inflation expectations derived from both surveys and financial markets have been remarkably stable, making it easier to keep actual inflation relatively close to 2 percent despite large movements in oil prices and pronounced swings in the unemployment rate.

Lately, however, there have been signs that inflation expectations may have drifted down. Market-based measures of longer-run inflation compensation have fallen markedly over the past year and a half, although they have recently moved up modestly from their all-time lows. Similarly, the measure of longer-run inflation expectations in the University Of Michigan Survey Of Consumers has drifted down somewhat over the past few years and now stands at the lower end of the narrow range in which it has fluctuated since the late 1990s.

The shifts in these measures notwithstanding, the argument that inflation expectations have actually fallen is far from conclusive. Analysis carried out at the Fed and elsewhere suggests that the decline in market-based measures of inflation compensation has largely been driven by movements in inflation risk premiums and liquidity concerns rather than by shifts in inflation expectations. In addition, the longer-run measure of inflation expectations from the Michigan Survey has historically exhibited some sensitivity to fluctuations in current gasoline prices, which suggests that this measure may be an unreliable guide to movements in trend inflation under current circumstances.

Moreover, measures of longer-run inflation gleaned from surveys of business and financial economists, such as those reported in the Survey of Professional Forecasters, the Blue Chip Survey, and the Survey of Primary Dealers, have largely moved sideways in the past year or two. Taken together, these results suggest that my baseline assumption of stable expectations is still justified. Nevertheless, the decline in some indicators has heightened the risk that this judgment

could be wrong. If so, the return to 2 percent inflation could take longer than expected and might require a more accommodative stance of monetary policy than would otherwise be appropriate.

Despite the declines in some indicators of expected inflation, we also need to consider the opposite risk that we are underestimating the speed at which inflation will return to our 2 percent objective. Economic growth here and abroad could turn out to be stronger than expected, and, as the past few weeks have demonstrated, oil prices can rise as well as fall. More generally, economists' understanding of inflation is far from perfect, and it would not be all that surprising if inflation was to rise more quickly than expected over the next several years. For these reasons, we must continue to monitor incoming wage and price data carefully.

Let me now turn to the implications for monetary policy of this assessment of the baseline outlook and associated risks.

The FOMC left the target range for the federal funds rate unchanged in January and March, in large part reflecting the changes in baseline conditions that I noted earlier. In particular, developments abroad imply that meeting our objectives for employment and inflation will likely require a somewhat lower path for the federal funds rate than was anticipated in December.

Given the risks to the outlook, I consider it appropriate for the Committee to proceed cautiously in adjusting policy. This caution is especially warranted because, with the federal funds rate so

low, the FOMC's ability to use conventional monetary policy to respond to economic disturbances is asymmetric. If economic conditions were to strengthen considerably more than currently expected, the FOMC could readily raise its target range for the federal funds rate to stabilize the economy. By contrast, if the expansion were to falter or if inflation were to remain stubbornly low, the FOMC would be able to provide only a modest degree of additional stimulus by cutting the federal funds rate back to near zero.

One must be careful, however, not to overstate the asymmetries affecting monetary policy at the moment. Even if the federal funds rate were to return to near zero, the FOMC would still have considerable scope to provide additional accommodation. In particular, we could use the approaches that we and other central banks successfully employed in the wake of the financial crisis to put additional downward pressure on longer-term interest rates and so support the economy – specifically forward guidance about the future path of the federal funds rate and increases in the size or duration of our holdings of longer-term securities. While these tools may entail some risks and costs that do not apply to the federal funds rate, we used them effectively to strengthen the recovery from the Great Recession, and we would do so again if needed.

Of course, economic conditions may evolve quite differently than anticipated in the baseline outlook, both in the near term and over the longer run. If so, as I emphasized, the FOMC will adjust monetary policy as warranted. As our March decision and the latest revisions to the Summary of Economic Projections demonstrate, the Committee has not embarked on a preset

course of tightening. Rather, our actions are data dependent, and the FOMC will adjust policy as needed to achieve our dual objectives.

Financial market participants appear to recognize the FOMC's data-dependent approach because incoming data surprises typically induce changes in market expectations about the likely future path of policy, resulting in movements in bond yields that act to buffer the economy from shocks. This mechanism serves as an important automatic stabilizer for the economy. As I have already noted, the decline in market expectations since December for the future path of the federal funds rate and accompanying downward pressure on long-term interest rates have helped to offset the contractionary effects of somewhat less favorable financial conditions and slower foreign growth. In addition, the public's expectation that the Fed will respond to economic disturbances in a predictable manner to reduce or offset their potential harmful effects means that the public is apt to react less adversely to such shocks – a response which serves to stabilize the expectations underpinning hiring and spending decisions.

Such a stabilizing effect is one consequence of effective communication by the FOMC about its outlook for the economy and how, based on that outlook, policy is expected to evolve to achieve our economic objectives. I continue to strongly believe that monetary policy is most effective when the FOMC is forthcoming in addressing economic and financial developments such as those I've discussed in these remarks, and when we speak clearly about how such developments may affect the outlook and the expected path of policy. I've done my best to do so today in the

time that you have kindly granted me. So let me stop there. Thank you for your attention, and I would be glad to take some questions. (Applause)

QUESTION AND ANSWER PERIOD

CHAIRMAN WILLIAM DUDLEY: Thank you. Our two questioners today are Alan Blinder, Professor of Economics at Princeton University and Glenn Hubbard, the Dean of the Columbia School of Business. Alan, the first question is yours.

ALAN BLINDER: Thank you. Do I still get to call you Janet, or is it Madam Chairman?

THE HONORABLE JANET L. YELLEN: I think Janet works for us.

ALAN BLINDER: Janet, you spoke today, as you have in the past, about external threats to the U.S. economy. As you recall, there was a famous sentence in the September FOMC statement that highlighted these global risks, then dropped from the next statement. In the March statement it was highlighted again and, in fact, as I read it, it was practically the only downside risk that bore explicit mention in the view of the Committee. And then I think I heard you say in the talk, you were looking for sort of dissipating headwinds from those sorts going forward. So could you explain to us how important these external factors are compared to internal risks which are always present?

THE HONORABLE JANET L. YELLEN: So I'd be glad to. I think with respect to the internal or domestic spending and how the economy has been doing, it has progressed in a remarkably satisfactory manner. The labor market has been consistently improving and the U.S. economy and domestic spending, while there's some volatility from quarter to quarter, the U.S. economy has proven remarkably resilient. But financial market concerns and broader concerns about global financial developments – I highlighted particularly the pace of global growth and the prospects for oil prices – these developments and concerns about the developments, those developments both last summer and more recently at the turn of the year, have risen. They are significant in terms of the U.S. outlook, both directly, slower growth abroad does, in spite of the fact that trade is still relatively a small share of U.S. domestic, the U.S. domestic economy; we are exposed to the direct effects, slower export growth from slower growth abroad. And as importantly, the financial market repercussions of slower growth which tends to mean a stronger dollar, lower equity prices and so forth, higher risk spreads, do have implications for the U.S. outlook. In January, we had been through a month or so of heightened volatility and concern about these developments. In our January statement, the Committee highlighted these developments. The U.S. economy was continuing to perform well and we declined to characterize the likely impact we thought that they would have. We said we were assessing their implications for the economy and the balance of risks. In our most recent statement in March, we indicated that global economic and financial developments pose risks, and I've tried to explain today the risks that those developments pose. Now we did not say that on net we thought the

balance of risks was to the downside. I would point that out. There are risks, but they're not all to the downside. And in particular, as I tried to emphasize today, although we do see as part of the baseline scenario somewhat slower global growth, the easing in financial market conditions that's come about because longer-term Treasury yields are down about 40 basis points since September, the Committee, in its latest projections, has indicated it sees as a main scenario a slightly more gradual pace of rate increases. Those things have cushioned the effects. So the baseline is some negative effect from slower global growth, essentially unchanged financial conditions, a slightly more gradual pace likely of increases in the funds rate, but continuing risks attached to global developments in both directions.

GLENN HUBBARD: Janet, thank you for your remarks and thank you for your leadership in these very interesting times. My question for you is on the gradual evolution of gradualism. So the unemployment rate which is a variable highlighted by both the Fed and many economists in policy decisions has fallen to a level that's arguably consistent with full employment and is likely to continue to decline. Payroll growth is resilient even in the presence of the somewhat downbeat international developments. And at the same time, while GDP growth is weak relative to some previous recoveries, forecasts are roughly in line with potential GDP growth and core inflation is starting to rise. So with those factors in mind, here's my question. How should one think about the slower normalization being allocated among three factors? Is the Fed more worried about the outlook than the scenario I just described? Is the Fed modifying its reaction function? Or did market participants really just misunderstand the way the Fed started

normalization?

THE HONORABLE JANET L. YELLEN: Okay, that's a great question. Let me try to address it. So you started by pointing out that essentially the U.S. economy is doing well. We are close to our maximum employment goal with a 4.9 percent unemployment rate and the median estimate among participants of a longer- run normal rate is about 4.8 percent. We're close. Although as I've often pointed out and still continue to personally believe, I think there's a little more slack in the labor market than one would surmise by looking at the unemployment rate alone. And here I'm particularly thinking about abnormally high levels of involuntary part-time employment. And perhaps, we have seen some decline in what I would call the cyclical component of labor force participation, but it might be that there remains some cyclical depression, people who have become discouraged who could be brought into the labor market. But we're close on our maximum employment objective. And inflation, while low, there's good reason to believe it's moving up. I've cast some doubt on whether or not 1.7 percent core inflation, how much one should read as an uptrend, but certainly it might be the case. So in light of that, what is the FOMC's assessment and why did it change? In particular, I assume you're comparing December with March. So in a sense, the assessment is not much changed. The baseline economic outlook that the Committee saw, both in December and March, looks quite similar. But the Committee in March did rethink to some extent the policy path that's appropriate to achieve an essentially unchanged outlook. So I would say the major thing that's changed between December and March that affects the baseline outlook is a slightly weaker projected pace of global growth. Now

when you ask about, you asked me did the reaction, the Fed's reaction function change, and that's an interesting question. I would say no, but let me talk about that for a second. Sometimes when people think about a reaction function, you think about some simple function relating the stance of policy, the level of the fed funds rate, to a few simple measures like GDP or the unemployment rate and inflation. And if that's how you think about the reaction function, you might say, oh, didn't the reaction function shift? Because your projections for GDP and inflation changed almost not at all and yet the path for the fed funds rate shifted down a bit. So I would say that I think that's too simplistic a way to think about the reaction function. We're looking at a whole variety of factors that impact the outlook for the U.S. economy and when we see a factor move that can affect the outlook, and global growth is a perfect example, if I am seeing a downgrading of the outlook for global growth and understand that that's something that with an unchanged stance of policy would lead to weaker growth and less progress in the labor market and on inflation than would be desirable, ideally we want to get ahead of that development and adjust our thinking about the path of policy in order to counteract it before it shows up as a degradation in our forecast for unemployment and inflation. Now that may look like a shift in the reaction function, but it really isn't. It's simply saying we are looking at many factors beyond some list of just two – inflation and unemployment – that should drive policy decisions. And I've tried to make clear that global growth was an important factor. We're trying to get ahead of it and the market response has been favorable. You also asked to what extent did more worry play a role? And I'd say it played a small role. Let me say there was another thing that played a small role which is also the Committee in terms of what is the long-run level of the neutral federal

funds rate? And for that matter, what is the likely long-run level of GDP growth? We're really quite uncertain about that. The Committee, you can see in our forecasts, we don't have such pessimistic forecasts that you would put the Committee largely in the secular stagnation school, but those estimates have been coming down too. And in March there was a down shift, a small down shift in the Committee's median expectation of the longer-run normal level of the federal funds rate. GDP growth in the longer-run has also been moving down slightly over a longer time period. So that partly explains the downward shift as well. Risks, it's not the key driver, but look when the federal funds rate is very close to zero, the asymmetry that I talk about, I discussed in my speech, always exists. We have more room to respond by raising rates if we get behind the curve and need to move faster. Although we do have tools, as I've emphasized, our ability to respond certainly by using the federal funds rate is more limited. And for many years that asymmetry has played a role making us be cautious about raising rates and when risks increase it also, with that downside risk perhaps being a little bit more salient, that also plays a small role as well.

ALAN BLINDER: If I may I'd like to take you back to something you spent about a sentence on in answering Glenn which is potential GDP, and in particular labor productivity. One can look at the Fed's forecast and back out the assumption, the tacit assumption of labor productivity over the next two years and then into the long run. And it's a number in the range of 1.7 percent, give or take only a little, something like that. As you know, the recent performance over the last five years of that time series, labor productivity has been more like ½ percent per annum which

means not only has the Fed not bought into any serious aspect of secular stagnation but it's actually forecasting an explosion relative to the last five years of productivity improvement. So I wonder if you could speak about that level of, what's behind that optimism?

THE HONORABLE JANET L. YELLEN: So you're absolutely right that for the last five years, I believe, business sector productivity has been very disappointing, about four-tenths of a percent per year. I think my own estimate of productivity; structural productivity growth would be quite a bit higher than that, at least 1 percent. I wouldn't, I'm not sure we're 1.7; I don't know where the math of that comes from. That's a little higher than what I would have anticipated for the next several years. But you know a lot of that decline in productivity growth reflects a decline in total factor productivity growth or the pace of technological change and it's hard to see why that would have occurred. It's hard to see that that's, it's a very unanticipated development that doesn't seem to be driven by any fundamentals. And we're, many of us, are penciling in an assumption as you say that's just suspiciously low. I think there have also been questions about the measurement of output and we may see when the NIPA revisions come in; there are often significant re-estimates of the level of output growth that could change that. So we are forecasting it will move up but I have to say really a source of huge uncertainty and really don't know. If we're wrong, if productivity growth remains very depressed as it could, and output growth comes in, in line with our forecasts – now that might not be true either if productivity growth is low – but we could see a more rapid improvement in the labor market than we are currently anticipating. And, of course, that would have implications for policy.

GLENN HUBBARD: I'd like to take the conversation away from a consensus toward a hypothesis of a recession. And in the eventuality of a recession, you commented on the fact that you still have tools, particularly in asset purchases, to provide accommodation. How effective do you think those tools would be in a potential recession through wealth effects if monetary policy acts alone or is this something that you would expect fiscal policy to play a role in if a recession were to happen in the next year or two?

THE HONORABLE JANET L. YELLEN: So as I indicated, I do think there is now getting to be a pretty large literature looking at the impact of our various unconventional policies, forward guidance, asset purchases, extending the maturity of our portfolio, what is the impact of those actions on longer term rates and on spending in the economy. Many other countries are now using similar tools so we also have studies of foreign experience to rely on and the main take-away from my standpoint is they have been effective policies. They have made a difference. And inflation would be lower and unemployment higher now by noticeable amounts had we not employed those policies. But I think there's no getting around the fact that monetary policy in the United States and many other advanced countries has been under a substantial burden and has not gotten a lot of help from fiscal policy. And I certainly myself couldn't have imagined six, seven years ago that we would be employing the policies we are now or that the euro area or Japan would be doing similar things. I think it's a blend or a mix of policies that is not as healthy as I think I would ideally like. And from a medium term perspective, it certainly would be

helpful to see fiscal policy play a larger role. Of course, what's made that difficult both in the United States and other advanced nations is the debt to GDP ratios have risen to high levels and given trends in demographics may be on an unsustainable path and that is very legitimate concern. But with real rates as low as they are, investment-oriented fiscal policies it seems to me there's a case for that. And if we do find ourselves, contrary to my expectations, in a world where for many years we are faced with low equilibrium and actual real interest rates, this isn't a transitory thing that will pass as we expect, but becomes a more permanent part of the landscape; I think we will have to seriously consider the fiscal-monetary mix. (Applause)

CHAIRMAN WILLIAM C. DUDLEY: Thank you very much Janet. Thank you Alan and thank you Glenn. You can come here and speak anytime. The next meeting of the club will be a Member-Guest Breakfast at the University Club on April 28. We'll be hosting the former Governor of the Bank of England, Lord Mervyn King, on the occasion of his just-published book, *The End of Alchemy: Money, Banking, and the Future of the Global Economy.* We're also pleased to announce that Eric Schmidt, the Executive Chairman of Alphabet, has confirmed that he will speak at the club at a luncheon on June 2. So I hope many of you can join at these and other upcoming events. Enjoy your lunch. (Applause)