The Economic Club of New York

500th Meeting
112th Year

John C. Williams
President and Chief Executive Officer
Federal Reserve Bank of New York

March 6, 2019
New York City

Questioners: John Paulson, President
Paulson & Co.

Jan Hatzius, Chief Economist
Goldman Sachs

Introduction

Chairman Marie-Josee Kravis

I'm Marie-Josee Kravis, the Chair of the Economic Club, and I'm delighted to welcome you today to our 500th meeting of the Club. So it's a real milestone in our 112 years. (Applause) And during those years, of course, the Club has become the nation's foremost forum for discussion of economic policy, not only in our country but across the world.

But before we proceed with our program, I'd like to remember a very special contributor to this legacy of the club – Ray Price – who recently passed away. Ray was a long-term member of the club. He was a former board member and club president. And I'd like us to have just a moment of silence in his honor. (Moment of Silence)

I would now like to recognize our 280 members of the Centennial Society, many of whom are seated on the dais or elsewhere in the front of the room. And you really are the lifeblood of this club and you make the programming at the club possible, and I really want to thank you for your generosity. I'd also like to welcome the table of graduate students attending today from City University of New York - Medgar Evers School of Business, as well as our attending members of the 2019 Class of Economic Club Fellows.

And finally, it's a tremendous pleasure for me to now introduce a distinguished economist, a leader of the Federal Reserve System – John C. Williams – who last year, last June became President and Chief Executive Officer of the Federal Reserve Bank of New York. And in that capacity, of course, he also serves as a member, as Vice Chair of the Fed Open Market Committee.

Now, John obtained his A.B. degree at Berkeley and master's degree at London School of Economics, and a PhD at Stanford. Not so bad. He began his career in 1964...1994, I'm sorry, he's much younger than...(Laughter)...poor John, I'm aging you already as you just begin your position. So, John began as a research economist at the Federal Reserve Board of Governors in Washington, DC. And as an economist, I really want to underline the fact that John delved into issues that at the time were rather esoteric issues of business cycles, uncertainty, innovation. And those issues continue to inform markets but also monetary policy to this day. So he was really at the cutting edge of research at the time.

He then became Head of Research at the San Francisco Federal Reserve Bank and continued, of course, his work, and delved even deeper in issues of modeling. And in a way – I would argue – probably brought the Fed to the 21st century and these models are now available to public markets. Now John really has distinguished himself by his openness and his access and spent a lot of time when he was at the San Francisco Fed doing town hall meetings, meeting with students, and we're particularly happy that you're continuing this tradition and we hope that you will visit the club regularly.

In 2011, he succeeded Janet Yellen as President and Chief Executive Officer of the San Francisco Fed. And in June 2018, he became Chair of the New York Fed. So John will make his speech and then he will answer questions that will be led by John Paulson of Paulson & Company and Jan Hatzius from Goldman Sachs. So please welcome John Williams. (Applause)

John C. Williams, President and Chief Executive Officer
Federal Reserve Bank of New York

So, yes, I did start my career at the Fed when I was two years old. (Laughter) And, in fact, at times it feels like I've been at the Fed since 1964. But anyway, first of all, thank you so much for the very warm introduction. It's great to be here at the Economic Club of New York and speaking to this group, and I'm looking forward to the questions I get from the friends up here. I also should just say that it's a great honor to be invited to be on the Board of the Economic Club of New York. I'm very excited about that. And also, you know, this group has such a long, distinguished history of public discussion and debate on the important issues in front of us in the day. I hope that today's event will follow in that strong tradition.

Now, I am, in fact, today going to talk about monetary policy and interest rates. I have the feeling that if I didn't talk about interest rates at all, you would, many of you would feel shortchanged. So before I can continue anything, I'm going to say the usual Fed disclaimer that everything I say reflects my own views and not necessarily the Federal Open Market Committee, anybody else in the Federal Reserve. So we've gotten the disclaimer out of the way so my colleagues in Legal will be happy.

So, I do want to take us back to a time long ago, in a galaxy far, far away. Specifically, I'm thinking about the year 2001when Destiny's Child was topping the charts, when you had a Motorola flip phone and you were the coolest kid on the block. And, you know, in that time, which I'm picking up on the theme of the introduction, I was an economist at the Board of Governors in Washington. And I and my colleague Thomas Laubach were very focused on some of the kind of key issues that we were thinking about at the Federal Reserve. And specifically, burning the midnight oil trying to understand what the tech boom and the rapid productivity growth, and all the changes we were seeing in the U.S. economy in the late 90s, what that meant for interest rates, both in the short term, but also in the long run. These were obviously huge issues for the Fed at the time and also in trying to understand the economy. And thinking about those issues and researching those led Thomas Laubach and I to develop this model of something called the r-star.

So, r-star, for economists means the natural or neutral rate of interest. It's the level of interest rates you think would occur in the long run in the economy that's neither boosting economic growth nor holding back the economy. It's neither expansionary nor contractionary. And importantly, it's the normal interest rate you would expect to see in a normal economy.

And when thinking about what is, what determines what a normal interest rate is, we focus quite a bit of attention on something that we think is a very important determinant of interest rates in the long run and that's economic growth, the rate of economic growth, which we – showing our great creativity and innovation – decided to call g-star. So we focused on g-star, which is this idea of potential growth in the economy, how fast can the economy grow in a sustainable rate? And remember, you have to put back, think back in the time of the late 90s and early 2000s, GDP growth in the U.S. was over 4% per year. And so we were really focused on the issue of how does the tech revolution, the internet, all these things that are leading to very rapid growth, how are those affecting potential growth rate of the economy and thinking about what does it mean for interest rates in the long run. One of the things we discovered at the time was in an economy that's growing rapidly on an ongoing basis, this neutral interest rate or this normal interest rate of r-star was actually somewhat above 3%, which was significantly higher than our estimates were before the tech boom. So again, we were focused on trying to understand how these changes in the economy affect what a normal interest rate was.

Now, given that we were so focused on the tech boom and the new economy, it's somewhat ironic that since then both Thomas and I and many other economists have focused most of our attention on why r-star has dropped like a rock. Because we were focused on why it had risen so much, and since then what we've seen is a significant decline in estimates of this neutral interest rate. And in thinking about putting that into context, I said that, you know, our view of a normal interest rate around 2001was around a little over 3%. Since the Great Recession, these estimates have been well below 1%. A normal real interest rate below 1%, in historical context, in the post-World War II period, there is no period before the Great Recession where a normal interest rate was that low. So it's just a sea change in our views of what a normal interest rate or r-star was.

In thinking about these issues, we focused on a number of the determinants of why the, you know, interest rates have come down. And it goes back to these issues of the productivity growth, potential growth, and labor force growth, thinking about what are the determinants that drive g-star and kind of the potential of the economy and thinking about how those have affected the neutral interest rate.

So, if you go back to this, what you see, back to these questions, what you see is labor force growth has slowed considerably in the United States. We've seen the retirement of the baby boomers. We've seen birth rates come down over recent decades suggesting that our economy's potential growth rate is significantly lower than before. Similarly, with productivity growth, relative to the late 90s and early 2000s, we're seeing much slower productivity growth over the last decade in the U.S.

Now, for many people who have become enamored with their smartphones and all their electronic, other electronic devices, and how technology is changing our lives so much, this may seem counterintuitive, that productivity growth is so slow. After all, if you go, you know, you can order your new Nintendo Switch and get it delivered the same day. That obviously has got to be a huge change in productivity. But, in fact, it isn't, and that's a whole topic that I could talk about. But I'll leave that for another day. Today, the fact is that we've seen the slowing down of both productivity growth and labor force growth as a persistent feature of the U.S. outlook.

The other point I would make that I think is important to think about how the world has changed from 15 or so years ago is that these slowdowns in labor force growth and the demographics are also seen in many other countries around the world. So it's not just about the United States that demographics have shifted, but we're seeing it in other countries and similarly, with the productivity growth. This is much more of, the slowdown in productivity growth is a global phenomenon. And what that means is that this idea of an r-star or neutral interest rate hasn't just fallen in the United States to very low levels, we're actually seeing our estimates of r-star fall in countries across the globe. And I think that's an important part of the story

Now, you may be asking why am I going back to 2001, talking about, you know, a time when we actually would order takeout from a paper menu. It seems like a long time ago. But I think that thinking about what are the long run trends in our economy, what's a neutral interest rate, what's the economy's potential and how that's changed really helps set the scene for the economic outlook today. It provides a backdrop for us to think about what should we be expecting to see in the economy of this year and the next few years.

Now, in going, in thinking about what the economic outlook is, it's helpful to think about, well, what's its potential output? What do we think of as g-star? What's kind of a normal growth rate for the economy? Based on our current estimates, that's around 2%. So 2% GDP growth would be normal from this point of view. Now, that's a lot slower than many of us experienced in our lifetimes, but again it reflects a slowdown in labor force growth and in productivity growth. And in thinking about what's been happening in the U.S. economy, last year we saw GDP growth actually came in well above that. It was a little above 3% based on our most recent estimate.

Now, the economy grew much faster than its long-run trend. I think three factors come immediately to mind. One was obviously the fiscal stimulus. Also, earlier in the year we saw some synchronized global growth that was, I think, helping many countries, including the U.S. economy. And then through much of the year, it was still quite favorable financial conditions. So all these factors help kind of give the economy some tailwinds that allowed us to grow well above our long-run potential. Looking into, now that we're into 2019, looking further ahead, my view is that these tailwinds, some of them have calmed quite a bit and others have actually reversed in the last several months.

So, let me talk a little bit about that. I would mention three factors that have, I think, affected the shift from the slowdown of growth from last year to this year. One is global growth is definitely slowing relative to what we were seeing, I'd say, a year or so ago, the same as geopolitical risks are very much front and center for many around the world, and the financial conditions since late last year have definitely tightened somewhat. So, in putting all this together, my view is after seeing GDP growth a little above 3% last year, my forecast is that we'll see GDP growth this year of around 2%, which is a pretty significant shift from one year to the next.

Now, let me go through these three factors to help kind of frame that. First of all, on the slower global growth, we definitely have seen signs and actually hard data – especially from Europe and China – of slowing growth. I would really note in particular the slowdown in Europe growth seems to be pronounced. How does that affect the U.S. economy? Well, it means less demand for our exports, which then spills into a little bit less growth in the U.S. economy.

On the geopolitical risk side, I think we all know that we're all watching very carefully what happens to our friends across the pond in terms of Brexit, but more generally, some geopolitical risks in Europe, that they're going through in several countries right now. And adding to that, it's obviously the issues about trade negotiations between the U.S. and China and other countries. And when you put that together, higher angst around the geopolitical and economic outlook is a cause for businesses and households to maybe step back from longer term investments or hiring decisions and postpone those until the air has cleared, which is a second factor that I think is holding back growth somewhat.

The third one really gets to this shift in financial conditions we saw starting late last year and continuing to today. And that is that relative to before, overall financial conditions have tightened somewhat. That means businesses and households are likely to – all else equal – to spend somewhat less this year and we'll expect a little bit less growth out of that. You know, one data point I would bring up which already was in trend, even throughout last year is we have seen there's quite a bit of slowing in the housing sector and housing construction, which I think in part reflects somewhat less favorable financial, financing costs for buying a house. Now, all of these factors again kind of come together and tell us that an economy that was growing 3% last year due to some favorable tailwinds, we're now expecting to see growth closer to 2%.

Now that clearly has created quite a bit of angst and worry and, in fact, some fears of recession to see a significant decline in the economic outlook. But I want to put that into perspective. You remember I started with this discussion of g-star, this notion of how much should our economy be expected on a normal average year to grow, and our current estimate is around 2%. So when we see this slowdown, people shouldn't be saying, well, what's happening to the economy that would cause you to think that this would be down to 2%? In fact, this would be actually something considered to be more normal, 2% growth in the new economy, new normal economy, is more the usual rather than the exceptional.

And thinking about people being concerned about growth of 2%, again I would put it in the perspective that this shouldn't be such a worry, but instead seeing something that's pretty predictable. That if you thought ahead, you would have been expecting potential growth on that level.

Let me turn a little to monetary policy and how to put all this together. If you look at it strictly through a monetary policy lens, let me go through the checklist. So we have unemployment at around 4%, a very strong labor market. We've seen very solid job growth. We're seeing growth for the economy that was very good last year and looks to be still around our sustainable potential level this year. And we're seeing inflation around 2%, our preferred inflation goal. So, from a monetary policy perspective, honestly this is about as good as it gets in terms of achieving our goals, and I think that's a very good starting place.

What does that mean for monetary policy? Well, with the economy basically strong, inflation near our target and growth around a sustainable level, you know, to me, monetary policy is becoming more normal. In particular, my view of a neutral or r-star is about ½ a percent. So we have inflation around 2%, so if you add 2% inflation to this idea of a neutral real interest rate, that's about 2 ½%, that's roughly where the federal funds rate is, our policy tool. So, again, we're in a good economy. We're in a monetary policy, at least in my view, right around a neutral.

So, that brings me to the question of, well, what is the future going to hold? We're in a good place now. Monetary policy is roughly neutral in my view and the economy is in a good place. So that baseline is good. But, of course, there's always uncertainties around the economic outlook and we need to be thinking through some of those.

So let me go through a few possible scenarios that I think are relevant. One is the economy could actually, we could see some of these geopolitical risks recede, be resolved relatively soon. We could see other positive developments that lead the economy to kind of get back to its rather robust trajectory that we saw last year. So that's one upside possibility. The second scenario, I think, is basically the one I've laid out. Growth, roughly at trend, a continuation of a very solid economy. And, of course, there's always the downside risks. There are certain risks that could realize that would knock the economy somewhat off course. So thinking about these various scenarios, what does it mean for monetary policy?

And again, I start from the point that I think we're in a very good place. The economy is in a good place. So how will monetary policy respond depending on these various scenarios? And my answer to that is simple. It depends. It depends on what happens in the economy and it depends on what's the appropriate response to any changing circumstances. And I'm going to say something that I've been saying a lot for several years. I'm going to keep saying, for as long as I'm in this position and I'm guessing I'm going to keep saying for the rest of my life, but I still think what I'm about to say is very important in the current juncture. And that is, it's really important for the Fed to continue to be very data-dependent. Data-dependent is the key phrase for thinking about how we respond to changing economic circumstances.

We just had our, in January, our last FOMC meeting. We indicated that given where the economy is and the outlook that we decided not to change the target federal funds rate. And we also indicated appropriately that given the circumstances that we're in, with essentially no inflationary pressures, given the global and economic financial conditions, that we could afford to be patient in making future decisions around policy. And I think that makes complete sense given the situation we're in, and given the fact that there are still significant uncertainties looming large.

In terms of thinking about monetary policy, I think it's helpful to have a metaphor, a nautical metaphor in mind. And that is that monetary policy is like steering a large ship. Our policy actions can leave a wake miles long. Our actions reach far into the future. And so when we think about taking the decisions that we make, we really need to think about how they affect the economy over a longer period of time. And we really need to be collecting all of the data that we have, and by data I mean the economic statistics, I mean talking and following what's happening in the financial markets, what's happening in the global economy, and also talking to business leaders from around the country and hearing from people in the business community and more generally about what's happening. Taking all that data together and analyzing it and trying our best to achieve a continuation of the situation we're in now – a strong labor market, inflation near 2%, and steady good growth.

I started with a discussion of why r-star and g-star and these ideas are important. I think they're important because they help frame, not only how to think about monetary policy and the decisions that we make, but also about what real, kind of a normal economy looks like now that we've fully recovered from the recession. And now we're moving to a phase that I think of as a more normal economic cycle.

Moderate growth that we're seeing, and I expect this year, should not be a surprise. It's something that we should have been expecting for some time and it should not be a source of particular worry or concern. You know, for those of you who are still surprised that 2% growth is actually pretty good, my only comment is maybe you're listening to Beyoncé a little too loud and haven't been watching the data signs that we've been watching for a long time.
So, you know, again I'd go back to my punch line on all of this. The economy is in very good shape. The outlook has uncertainties. We have to be flexible. We have to be data-dependent and again focus really on just trying to keep this economy on the track that it currently is. Thank you very much. (Applause)

QUESTION AND ANSWER PERIOD

CHAIRMAN MARIE-JOSEE KRAVIS: Thank you John. Thank you so much for providing context and sharing very thoughtful insights with us. And I have to say it's wonderful to hear an economist say I've been saying this for a long time and I continue to say it and I'm going to continue to say it. That's very seldom the case. We often hear on the one hand, on the other hand. So thank you very much. And on that, I'll invite John Paulson to please start the Q&A.

JOHN PAULSON: Thank you for your remarks, John. My first question is on forecasting a recession. In November when Fed Chair Jerome Powell was here he said he didn't know what might cause the next financial downturn and that there's some event that nobody sees coming oftentimes. As you specialize in monetary policy in uncertainty, do you have thoughts on what might be the trigger of the next downturn?

JOHN C. WILLIAMS: Well, obviously this is a version of the question, what keeps me up at night, so that's a terrific question and a timely one because I think this does come up in the context of an economy that's going from pretty – I would say growth that was pretty strong to growth that's maybe more moderate. So, you know, I think the way I think about where the risks are, obviously some of them are internal in terms of do we see imbalances in the U.S. economy? At times recessions, I think, have been caused by, you know, say the housing bubble or other imbalances with the tech bubble in the late 90s. I don't see those right now. Honestly, if you were to say what are the top three risks to the U.S. economy right now that I'm focused on, they're pretty global. It's what's happening in Europe, both economically and the geopolitical risks around Brexit, around the situation in Italy and more broadly in Europe. Obviously a slowdown in China, we know not only affects China and the region but affects the global economy. So those are areas that we, I personally find to be a particular area of focus. And again it's this uncertainty aspect. In terms of indicators of a recession or some risk of that, I mean, you know, I think for us the important thing to do is to keep policy well positioned. And now I'm going to use a tennis metaphor. So I'm sure there's like, 90% of the people here are much better tennis players than me so don't listen to my tennis metaphor, listen to the policy part. So we want to be well positioned to adjust however we need to do. If the economy, like I said, slowed significantly, you need to adjust policy in that way. If it were to speed up, it would be able to adjust to that. And that's just, I think we're well positioned for that and basically no matter which way it plays out, we can adjust as needed.

CHAIRMAN MARIE-JOSEE KRAVIS: Let me ask Jan to continue and then we'll go back to...we'll play tennis.

JAN HATZIUS: I don't have a question about tennis, but I want to go back to the September 2018 FOMC meeting. At the time, the committee, the median projection for the funds rate had three hikes in 2019 and one hike in 2020. And, you know, with a forecast that growth would be slowing from the temporarily kind of elevated rates of 2018. And, you know, we've seen some bad news in a few areas, even relative to that forecast in the meantime but it's been relatively limited in general. Even when you look at financial conditions, there's been at least a partial round trip on that. But if I'm hearing you correctly, you're now saying that there isn't really a lean in terms of where the funds rate is going to go. You're talking about patience, funds rate in line with the neutral rate. So if there's no lean now and it was 100 basis points of tightening in '19 and '20 previously, that would be quite a large shift relative to what's happened in the economy and even in the market. So, I guess my two-part question is, one, am I right in hearing you? Am I hearing you correctly that there's no lean? You're not expecting any moves from the current 2-1/4 to 2 ½% rate in 2019 or 2020? And the second part of the question is, if so, and we've seen such a large move in response to a relatively limited amount of information, could it be that we're going to shift right back on the back of relatively small amounts of new information?

JOHN C. WILLIAMS: So, September does seem like a very, very long time ago to me because I think there have been some pretty significant shifts. And I think, to get to your question, so I am going to answer directly, like what's happened in the last six months roughly, or a little less than that. I think in September we were, and I'm speaking for myself here obviously, we were seeing indications and signs that in September, and in December of perhaps, obviously in Europe raising signs of weakening growth, concerns about China, definitely financial conditions tightening later in the year. And, you know, obviously fiscal policy would be less, provide less stimulus in 2019 than in 2018. So all of those issues were part of my thinking about the economy. Back then I thought the economy would slow from about 3% to about 2 ½%. My own view back in September would be that unemployment would be trending downward, probably around 3 ½% or even less. And honestly at the time I thought inflation would not only get to 2%, but would be trending above that. So that was, you know from my perspective it was an economy that was not just strong, but was exceeding a sustainable rate with unemployment getting to, you know, historically very low levels and risks of a pickup in inflation may be more prominent. I think the developments since then have shifted my view on all these dimensions. First of all, I think that those signs that we saw of slowing global growth have materialized, and concerns about that have shown up in actual data. I know the forecast of pretty much everybody out there, whether it's the ECB, the European Commission, the OECD, everybody has, I think, revised downward their forecast for European growth. And I think that one of the challenges there is the uncertainty obviously getting closer to Brexit and some of these other issues. In terms of financial conditions, you're right. Financial conditions tightened quite a bit in some of the analyses late last year or early this year. You know, at the low, it would suggest a bigger effect on growth this year. Financial conditions have reversed partially the decline. That said, I think part of that is the reassessment of monetary policy. So if we hadn't, I think, shifted our communication around the likely path of interest rates, I don't think financial conditions would have responded as much as they have. In terms of, you know, thinking about the view of, well, we were expecting, or many of us were expecting to raise interest rates this year as of December, I think given that forecast, that seemed to be a pretty reasonable baseline view of where a policy would be appropriate to go. Again, that wasn't a commitment or a promise or anything. It's just a view given the economic forecast that I had that somewhat higher interest rates would be consistent with achieving our goals. My view now is that economic growth is likely to be closer to trend. Unemployment, which I didn't talk about, is basically the unemployment rate will continue to be low, below 4, around 4% or below, but not trending much lower. And the inflation data and the inflation expectations data, I think, have confirmed that inflationary risks just don't seem to be out there right now at all. And so again suggesting somewhat, suggesting that we don't need to tighten the monetary policy maybe as much as I previously thought. In terms of your answer, so I think the data have changed. I think the outlook has changed enough. The risks are obviously out there as part of that story. And so, at least from my perspective, I've had a shift in my own view of the appropriate path for policy. In terms of whether we would change or I would change my views back, well, I did mention that in the speech. If this was, you know, kind of a head fake, if the economy really did grow at 2 ½ - 3% this year, if inflation did start picking up more, then obviously we would have to reassess that. I think that the patience, in my view, the patience language and this ability to be flexible is not a commitment. It's not a commitment saying we're not going to raise interest rates. It's really saying right now the economy is in a really good place. Given the level of interest rates, we have some time to collect more data – to get to your point – reassess the economic outlook and come to a judgement. So I'm not going to say whether I think that we would ever need to raise interest rates or lower interest rates in the future, but for the time being I think we're in a good place. And I don't have any particular lean – I think is the term you used – about where policy should be changing from where it is now.

JOHN PAULSON: Thank you. My second question concerns the tools the Fed has to stimulate growth in a downturn. Since short-term interest rates are not likely to rise as high as they have been in the past, the Fed will have less room to cut rates to stimulate growth in the event of a downturn. What other tools does the Fed have besides interest rate cuts to stimulate growth in a downturn? And would negative interest rates, as they've done in Europe and Japan, be one of those tools?

JOHN C. WILLIAMS: John, that's a really important question because, again, we're in a time where the U.S. economy is strong, but we do need to be taking this time to be thinking hard as we have at the Fed about what's our playbook if we have another economic downturn which will eventually happen? And I'm hoping the U.S. will be like Australia with 27 years without a recession. But we still need to, I think, out of prudence plan if that isn't the case. So, you've already hit upon the key, some of the key policy tools that we have. Obviously, we can cut interest rates to respond to a downturn. We could, if it was appropriate, go back to what people often call quantitative easing or asset purchases like we did during the downturn in the last decade. We could consider negative interest rates. We did, at the FOMC, discuss and consider going negative interest rates in terms of the interest on the reserves that we pay. It was a decision that as a committee, made, not to do that. We only got down to close to zero. But one of the things we're doing at the Fed and my colleagues around the world, you know, other economies are doing, is assessing and evaluating the experience of Japan and of the ECB and the Swiss National Bank and other countries about what are the constant benefits of having negative interest rates versus some of these other tools like quantitative easing. I think my preliminary read is the cost-benefit tradeoff of negative interest rates is not quite as favorable as QE. But again I would never exclude any of the possible tools in thinking about that. I think, if I could take maybe three steps back on this question, the Federal Reserve is undertaking this year a very deep kind of assessment and review of our monetary policy framework, the way we've set our long-run strategy and our policy goals. This is something that Vice Chair Clarida has been leading and gave a great speech on here in New York recently. This is something we're going to do a lot of outreach, not only academic conferences, but outreach to the communities across this country to think about how do we best achieve our goals of maximum employment, price stability, and whether the current framework and the current set of tools is adequate or helps us succeed or are there other ways to think about policy or how to communicate policy that might help us be even more effective in the future. I think that's a conversation that's part of your question, and it's something that I've been very supportive of and we're going to be doing a lot of work this year and continuing into the next year as we think about some of these issues so that we're well prepared for whatever may come.

JAN HATZIUS: Thanks. I have a bit of a follow-up on that question and specifically on changes in the inflation targeting framework. You've spoken about a concept called average inflation targeting where effectively you would target a modestly higher inflation rate during the good part of the cycle because you know that during the bad part of the cycle, you might be well below the 2% target. And I have two questions about that. Number one, do you have some numbers for us, how high that overshoot should be during the good part of the cycle, so in a sort of standard, pretty nice expansion, you know, 2-1/4%, 2 ½ %, 3%? What should that number be? And I realize all of this is very preliminary obviously. And the second part of the question is whether this would still be a bygones, a bygones policy where you basically consistently shoot for 2-1/4 or 2 ½ or whatever the number is during the good part of the cycle no matter what came before? Or whether a particularly severe undershoot would cause you to really want to make up ground and lift that number in the recovery from the slump?

JOHN C. WILLIAMS: Right. And so this is part of the discussion and debate around what we call monetary policy framework. Because our current framework and the way we describe it, this is true of not only the U.S. and the Bank of Japan, the ECB, you know most central banks describe this as flexible inflation targeting where you say I want to get inflation to your target which is 2% for us. And I'm always aiming to bring inflation, wherever it is, back to 2% from above or below. And it's kind of this idea of just trying to get back to 2% and then on average hopefully you'll be around 2%. The experience of the last couple of decades, both in Japan and then pretty much in every advanced economy, a very low neutral interest rate, a very low r-star plus a lower bound, not zero lower bound, but still a lower bound on interest rates has taught us that it is much harder to get inflation back to 2% from below than you might have thought given some of the constraints on monetary policy in a very, very low interest rate environment. So the basic premise of this idea of average inflation targeting to me is that if you think about, if you have a goal of 2% inflation, it should really be that on average, over, you know, a longer period of time, that inflation is around 2%. Sometimes a little bit above, sometimes a little bit below, but averages 2%. It's, to me, a relatively minor or modest modification, but a modification of the way we describe the policy framework today. So you get into the technical question or kind of how do you implement that, and those are obviously the relevant questions. Is it a policy that you say, well, after a period where inflation is low, do you try to make up for that? Do you just try to have an inflation rate that's slightly above 2% in good times? So those are the different alternative ways of describing this. To me, I go back to kind of what I think the fundamental thing you want to do, you know, in this kind of framework, is just anchor inflation expectations at 2% so that when people are making their decisions, whether they're business people or people deciding to buy a house or a car, that they just think, well, I'm expecting inflation will be 2% over the time, the horizon that I'm thinking about, and not get caught up in the fact that sometimes it's well below and it's hard to get it back to 2%. So my view is if any way of doing this, it keeps the average inflation rate at 2% and also kind of anchors expectations around that 2% would be effective at getting the main objective. There are a lot of issues about exactly how you would implement that and I think those are the kinds of topics that obviously people will be thinking about. Now, I should be very clear, no decisions have been made. You know, we're in the early days. It's still March. We're just starting a process of thinking about some of these issues. And again this is, we do things on Fed time here so it'll take a lot of study, a lot of analysis, and for my colleagues at the table, a lot of memos. So we'll be working on this for quite some time. And importantly, I think, you know, having these conversations in the public is good. Being transparent and saying all we're trying to do is achieve our dual mandate goals as best as we can. We're not trying to create high inflation or anything like that. We're just trying to achieve our goals as best we can and thinking hard about how to do that. This issue about bygones is closer to price level targeting, again another one of the options out there. But more to be learned, more to be discussed over the next year or so.

CHAIRMAN MARIE-JOSEE KRAVIS: Two quick questions.

JOHN PAULSON: Okay, my last question concerns balance sheet normalization. The Fed had $910 billion of assets in the summer of 2008 before the financial crisis began. The balance sheet peaked at around $4.5 trillion. It has since been reduced to about $4 trillion currently. At what point will the Fed stop its balance sheet normalization? Is there a target and a time frame?

JOHN C. WILLIAMS: Did you say we were out of time for questions? (Laughter) This is the question of the day. So it's interesting because for much of the, all the facts you had were exactly right. We rose from under a trillion to $4.5 trillion. Now we're roughly at $4 trillion on our balance sheet. This is part of the normalization. During the crisis or following the crisis and the slow recovery the Fed bought Treasury securities and mortgage-backed securities and other agency securities in order to lower long-term interest rates and try to get the economy growing faster, get America back to work. So we're now moving that back very gradually in a predictable way to what the new normal balance sheet is. And so the announcement that the FOMC did make is that our plans are that in the future, that for the foreseeable future we'll be continuing the conduct of monetary policy that we've been doing for the past decade. And that means having what we would call a floor system with ample reserves so we're adjusting the interest rates by adjusting some of these administered rates – the interest on reserves and repo rates – to keep the actual market rates right in alignment with the FOMC decision. So that decision that has been made and made public suggests a balance sheet that will not be anywhere near as small as the $800 or $900 billion number you indicated. The other thing is that since ten years ago, or twelve years ago, the amount of currency outstanding which is one of the liabilities of the Federal Reserve has more than doubled. So there's been a lot of changes that have happened from twelve years ago, from this $800 to $900 billion number to what the new normal for our balance sheet will be. Big drivers are the currency on the liability sides have increased, the amount that the U.S. Treasury holds with the Fed has increased for policy reasons. For their own reasons, it makes sense. Other changes have happened and also our plan is to hold more reserves in the banking system in support of the new monetary policy operating framework. I don't have a hard answer for when are we going to stop and exactly how much we're going to further reduce the balance sheet. It's obviously – as everyone knows who follows the Fed – it's something that we are actively discussing. Again, I think the most important point is the balance sheet is not going to get anywhere near as small as it was before because the world has changed. But for the time being, you know we're still shrinking in a very predictable well, I think, telegraphed way. Over the coming months, I expect we'll make further decisions. And as soon as we make those decisions, we'll announce that. I mean one of the things we have learned from all this experience is that transparency is helpful. It's helpful for us to explain what we're doing and why. It's also helpful for the economy for people to understand why are you doing what you're doing, how do you think about how you're going to change that so that people can plan around that. And that's a commitment we have is to continue to do that as well as we can.

JAN HATZIUS: My final question also relates to the monetary policy framework, but specifically about inflation expectations. I think there is a view that's been expressed by a number of FOMC participants that inflation expectations may be somewhat below the level consistent with the 2% longer term inflation rate. But when I look at the indicators out there, it's not obvious to me and I wanted to get your view on this. I mean it's true that break-even inflation rates in the TIPS market are somewhat below 2%, certainly if you can translate them into PCE terms. But it's also true that there's quite a lot of research about liquidity premia and risk premia. If you take that research seriously, typically you would still find that expected inflation is still pretty consistent with the 2% target even at the current levels. And then I look at the surveys, forecasters, long-term inflation forecasts are exactly 2%, at least according to the Survey of Professional Forecasters. And household inflation expectations, you know, 2.3% in the Michigan Survey, 3% on a three-year basis in the New York Fed Survey actually. So I want to get your view. Do you think we're below 2% or at levels consistent with less than 2% at this point?

JOHN C. WILLIAMS: So, I mean, it's obviously a really important question because we think that, you know, most of our economic models and analyses suggest that business and household decisions depend on what people think inflation will be in the future. If you think inflation will be high, you'll make different decisions than if you think it'll be low. It is something we've studied very carefully. And I do think it's whac-a-mole quite honestly. Every time we get a new measure of inflation expectation, we said, finally, we've got it. This is the number we should be focused on. There's all this research and other issues that come up that show, well, that's not a perfect measure, and we have the surveys and the New York Fed Survey. And I think all of these are informative and valuable. So to answer your question, I think it's hard to distinguish between our inflation expectations right at 2 or are they at 2-1/4 or 1-3/4. So it's always going to be hard for us to know are they anchored right at the right place. I am one of the people – you know that – who has highlighted the fact that we've seen inflation expectations come down over the last five to ten years. Now some of that might be an adjustment that has nothing to do really with people's views of underlying inflation. It could be other measurement issues involved in that particular data source. But it is something that I do pay attention to because I do think that if you go back to the history of central banking for, you know, as long as you can think of – over 100 years for the Fed – having a nominal anchor, having people believe that low and stable inflation is something that we are, you know, achieving on a regular basis, I think is critically important for economic prosperity. So the Fed, the one thing the Fed or any central bank, I think, you know, mission number one is to provide stable prices over a longer period of time. Normally, in my career, you know, I went to college in the 80s and grad school in the early 90s, the worry was I thought my career was going to be about let's keep inflation from getting too high. You know fighting the kind of the inflation, the too-high and variable inflation that we saw in the 60s, 70s, 80s. I do think that the world, the challenges are on the other side now. We're seeing this in Japan, in Europe, in many countries where they've really struggled for now many, many years of inflation being too low. So my answer to your question is I'm not, you know, I think that inflation expectations in the U.S. are pretty well behaved. I think even the range are anchored at our goal and that's a good thing. Definitely, it's something on my radar that looking around the world and seeing how inflation has been under the target year after year and how that's changing behavior in those countries, we don't want that to happen here. And I think the framework question really is maybe it's not to solve a problem we have, but it's to avoid a problem that we could have of the inflation anchor slipping slower. So, by the way, these were awesome questions from both of you. Thank you so much. (Applause)

CHAIRMAN MARIE-JOSEE KRAVIS: So, thank you to Jan Hatzius and to John Paulson for your questions. And thank you so much for your generosity, your time, and for your very candid answers. And I guess I will share with all of the members here that John Williams has also joined the board of the Economic Club of New York. So we're happy that you'll be more of a permanent fixture at the Economic Club. So, thank you very much. I just want to remind everyone that Monday, March 11, we will have a Women's Summit. We do that annually. Last year we discussed gender equality in business. This year we'll look at women and the investment world, women in VC and asset management and investing in general. We'll open the meeting with Indra Nooyi at lunch and the meeting will continue through the afternoon. So I welcome as many of you as possible at the University Club on Monday. And then we will have on March 14, David Rubenstein from the Carlyle Group and also a colleague who chairs the Economic Club of Washington, DC. So enjoy your lunch and thank you. (Applause)