

The Economic Club of New York

457th Meeting
109th Year

Dr. Stanley Fischer
Vice Chairman, Board of Governors
U.S. Federal Reserve System

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Introduction

Chairman Terry J. Lundgren

.... Chairman and CEO of Macy's Inc., and I'm also the Chairman of the Economic Club. So, welcome to our luncheon today. This is our 457th session of the Economic Club of New York in our 109th year of operation. The Economic Club of New York is the nation's leading nonpartisan forum for discussion on social, economic, and political issues, and more than 1,000 prominent speakers have appeared before this club and its members over the last century. I want to personally thank the 234 Centennial Society members who are largely responsible for the major contributions and support of this organization and to keep this organization fluid and financially stable and allow us to do programs such as today's program. I also want to welcome the students who are here. We like to include, as often as possible, students from universities sponsored by club members, and today we have students from Hamilton College, Manhattan College, and Columbia Business School. So, welcome to you.

I'm honored today to welcome Dr. Stanley Fischer, Vice Chairman of the Board of Governors of the Federal Reserve System. He took on this very important role in June of 2014, shortly after becoming a member of the Board of Governors. Prior to this, he was the Governor of the Bank of Israel from 2005 to 2013. And before that, Dr. Fischer served as Vice Chairman of Citigroup. He was also the Chief Economist for the World Bank and he was a Professor of Economics at MIT. He's been published numerous times with many articles, and he has authored or contributed to

many important books. Dr. Fischer was born in Lusaka, Zambia. He received his bachelors and his master's degrees in economics from the London School of Economics, and his PhD in economics from MIT. Following his speech, two designated club members will ask questions and this is a regular part of our program, and I'll introduce them as soon as you hear the speech from Dr. Fischer. And with that, while he's chewing on his salad, I would like to introduce Dr. Fischer. (Applause)

Dr. Stanley Fischer

Vice Chairman, Board of Governors

U.S. Federal Reserve System

Thanks very much, Terry. It's always – I say always, I think this may be the third time that I'm doing it – a pleasure to be at the Economic Club of New York. The issues we face now are very serious. There was a conference up in Boston this weekend which has gotten a lot of publicity and the problem is why is growth so slow and a related problem which is what I'm going to talk about today is why are interest rates so low? And what can we do about that, if anything?

So, let me start by thanking you for inviting me, and by telling you that in talking about the low level of interest rates, I'm talking about a topic not far from the minds of many in this audience for sure, but also many others in the United States and all over the world. And I have relatives in many parts of the world and a couple of them have written to me and said, just explain to me

why a few people sitting in a room in Washington, what you few people sitting in a room in Washington, D.C. matters more to us than what our guys sitting in their rooms in, whether it's Pretoria or London or wherever, do to us?

And it's a very interesting question. It's not the question I'm going to focus on mainly today. I'm going to focus on the fact that U.S. interest rates remain at an extraordinarily low level. And I will talk a little bit about policy rates at other central banks being lower still, even negative in some cases, even in countries like Switzerland, famous for their conservative monetary policies.

Long-term interest rates in many countries are also remarkably low suggesting that participants in financial markets expect policy rates to remain depressed for years to come. I'll try and present today a quantitative assessment of some possible factors behind low interest rates and also factors that could contribute to raising them in the future.

Now, I'm sure the reaction of many of you may be, "Well, if you and your Fed colleagues dislike low interest rates, why not just go ahead and raise them? You are the Federal Reserve, after all."

We are, but we operate in a particular economy and one of the goals today is to convince you that it's not that simple and that changes in factors over which we have little influence such as technological innovation and demographics are important factors contributing to both short-term and long-term interest rates being so low at present.

Now, should this worry us? Well, there are at least three reasons we should be concerned about such low interest rates. First, and I think most important, is the possibility that low long-term interest rates are a signal that the economy's growth prospects in the long run are dim. Later, I'll go into more detail on the link between economic growth and interest rates and one theme that will emerge is that depressed long-term growth prospects put sustained downward pressure on interest rates. And to the extent that low long-term interest rates tell us that the economic prospects for growth are poor, all of us should be very concerned, for – as we all know – economic growth lies at the heart of our nation's, and the world's, future prosperity.

A second concern is that low interest rates make the economy more vulnerable to adverse shocks that could put it into a recession. That is the problem of what used to be called the zero lower bound on interest rates. In light of several countries currently operating with negative interest rates, we now refer not to the zero lower bound, but to the effective lower bound. That's a number that's close to zero but negative. And operating close to the effective lower bound limits the room for central banks to combat recessions using their conventional policy tool – that is, by cutting the policy interest rate. And while unconventional monetary policies such as asset purchases, balance sheet policies, and forward guidance can provide additional accommodation, it's reasonable to think these alternatives are not perfect substitutes for conventional policy. The limitation on monetary policy imposed by low trend interest rates could therefore lead to longer and deeper recessions when the economy is hit by negative shocks.

The third concern that receives a great deal of attention from market participants is that low interest rates may also threaten financial stability as some investors reach for yield and compressed net interest margins make it harder for financial institutions to build up capital buffers. I should say that while this is a reason for concern and bears continual monitoring, the evidence so far does not suggest a heightened threat of financial instability in the post-financial-crisis United States stemming from ultra-low interest rates. However, to maintain that situation, I note that a year ago the Fed did issue warnings – they were successful warnings – about the dangers of excessive leveraged lending, and that concerns about financial stability are clearly on the minds of some members of the FOMC, the Federal Open Market Committee, that makes the interest rate decisions.

So, those are three powerful reasons to prefer interest rates that are higher than current rates. But, of course, we're keeping current rates very low at the moment because of the need to maintain aggregate demand at levels that will support the attainment of our dual policy goals of maximum sustainable employment and price stability, defined as the rate of inflation in the price level of personal consumption expenditures, whose target level is 2 percent.

That the actual federal funds rate has to be so low, and not only so low, but so low for so long, for the Fed to meet its objectives suggests that the equilibrium interest rate – that is, the federal funds rate that will prevail in the longer run, once cyclical and other transitory factors have played out – has fallen. Let me turn now to my main focus, namely an assessment of why the

equilibrium interest rate is so low.

Now I'm going to use a little bit of technical language, and to make it easier I'm going to use, say things in terms of technical language which was invented in the 1930s and has remained in use more or less until today, and I'll try not to exaggerate its use. So, we need to think about the real interest rate as the price that equilibrates the economy's supply of saving with the economy's demand for investment. So, we are looking for factors that boost saving, which tends to push the interest rate down, and that depress investment, which reduces the demand for saving, or both. Now, for those of you lucky enough to remember the economics you learned, we're looking at a point that's on the IS curve – that's the investment-equals-savings curve, and I'm sure many of you remember it. And because we're considering the long-run equilibrium interest rate, we're looking at the interest rate – now this is the definition of what we're looking at – the interest rate that equilibrates investment and saving when the economy is at full employment, as it's assumed to be in the long run. So, that's what we're looking for. At full employment, what would the interest rate have to be to be in equilibrium? And I will look at four major forces that have affected the balance between saving and investment in recent years and they may go back before the financial, great financial crisis, and then consider some that may be amenable to the influence of economic policy.

Factor number one, at the top of the list, is the economy's growth prospects. Among the factors affecting economic growth, two are predominant – gains in productivity and the growth of the

labor force. And we'll come back to all of these. Second, an increase in the average age of the population is likely pushing up household saving in the U.S. economy. Third, investment has been weak in recent years, especially given the low levels of interest rates. And fourth and finally, developments abroad, notably a slowing in the trend pace of foreign economic growth, may be affecting U.S. interest rates.

To assess the empirical importance of these factors in explaining low long-run equilibrium interest rates, I'll rely heavily on simulations that the Board of Governors' staff have run with one of our main econometric models, the FRB/US model known affectionately as Ferbus. This model is used extensively in policy analyses at the Fed and has many advantages, including its firm empirical grounding, and the fact that it's large and detailed enough to make it possible to consider a wide range of factors within its structure.

So, going through the four major forces I just mentioned, namely slow growth, population aging, weak investment, and slower foreign growth, I'll look first at the effect that slower trend economic growth, both on account of the decline in productivity growth as well as labor force, lower labor force growth, may be having on interest rates. And starting with productivity, gains in labor productivity have been meager – that's polite language – in recent years. One broad measure of business sector productivity has risen 1-1/4 percent per year over the past ten years in the United States. And stunningly, only 1/2 percent per year, on average, over the past five years.

By contrast, over the 30 years from 1976 to 2005, productivity rose a bit more than 2 percent per year. Now these all sound like little things, but as I learned many years ago from the late, the late Herb Stein with whom I had the privilege of working early in my career, the difference between a growth rate of 1 percent and a growth rate of 2 percent is 100 percent. And if you want income per capita to double in 35 years – approximately the age of a generation – you need 2 percent growth. If you want it to take double that amount of time, you'll manage that with 1 percent growth. That's the difference between 1 percent and 2 percent – whether it's every generation that is double the income of its parents, or whether you have to wait two generations to get a doubling relative to the base year. So, these are very big changes and they're very consequential for the future. And although the jury is still out on what is behind the latest slowdown in productivity gains, prominent scholars such as Robert Gordon of Northwestern and John Fernald of the San Francisco Fed suggest that smaller increases in productivity are the result of a slowdown in innovation that is likely to persist for some time, and has persisted for some time. And the attempt to discover what is going on with productivity is a major growth industry – one of the few we apparently have. But unfortunately, the rate of productivity growth in that industry isn't so high either.

Lower long-run trend productivity growth, and thus lower trend output growth, affects the balance of saving – the balance between saving and investment – through a variety of channels. With a slower pace of innovation, there are fewer profitable opportunities in which to invest and that pushes down investment demand. Lower productivity growth also reduces the future income

prospects of households, lowering their consumption spending today and boosting their demand for savings. Thus, slower productivity growth implies both lower investment and higher saving, both of which tend to push down interest rates.

In addition to a slower pace of innovation, it is also likely that demographic changes will weigh on U.S. economic growth in the years ahead, as they have in the recent past. In particular, a rising fraction of the population is entering retirement. And according to some estimates, the effects of this population aging will trim about 1/4 of a percentage point from labor force growth in coming years. Now 1/4 of a percent doesn't sound like much, but remember the Herb Stein statement that I just gave you.

So, both lower trend increases in productivity and slower labor force growth imply lower overall economic growth in the years ahead – a view which is consistent with the most recent Summary of Economic Projections of the FOMC. That is what we all know, fondly or not, as the dot plots. And in the dot plots, the median value for the rate of growth in real GDP in the longer run is now just 1-3/4 percent compared with an average growth rate of 1990 to 2005 of about 3 percent. So, we're projecting 1-3/4 – very recently we had a very good decade of 3 percent growth and we don't see the prospects for that.

Now we can use simulations of the Ferbus model to figure out the consequences of such a slowdown in longer-run GDP growth for the equilibrium federal funds rate. Those simulations

suggest that the slowdown to the 1-3/4 pace of growth anticipated by the members of the Federal Open Market Committee would eventually trim about 120 basis points from the longer-run equilibrium federal funds rate. That means that the slowdown in growth has a massive effect on long-term interest rates.

So now let me move to the second major development on my list. In addition to its effect on labor force growth, the aging of the population is likely to boost aggregate household saving. That's because the increase in the ranks of those approaching retirement in the U.S. and in other advanced economies is growing, and that group typically has above-average saving rates. One recent study by Federal Reserve economists suggests that population aging – through its effects on saving – could be pushing down the longer-run equilibrium federal funds rate relative to its level in the 1980s by as much as 75 basis points. So, that's two factors.

In addition, a third factor is weak investment. Analysis with the Ferbus model suggests that given how low interest rates have been in recent years, investment should have been considerably higher in the past few years. And according to this model, this shortfall in investment has depressed the long-run equilibrium federal funds rate by about 60 basis points. Investment is low, may be low, for a number of reasons. One is that greater perceived uncertainty could also make firms more hesitant to invest. Another possibility is that the economy is simply less capital intensive than it was in earlier decades. And there was a very nice article in the *Wall Street Journal* on the weekend saying that modern breakthrough firms are

simply not generating the amount of investment and the amount of employment that earlier breakthrough inventions generated.

And finally on my list are developments abroad. Many of the factors depressing the United States interest rates have also been working to lower foreign rates. For example, many advanced foreign economies face a slowdown in longer-term growth prospects similar to, or possibly greater than, what is happening in the United States, and that affects their equilibrium interest rates. In the Ferbus model, lower interest rates abroad put upward pressure on the exchange value of the dollar and thus lower net exports. And Ferbus simulations suggest that a reduction in the equilibrium federal funds rate of about 30 basis points would be required to offset the effects in the U.S. of a reduction in foreign growth prospects similar to what we have seen in the United States.

Now, I made a mistake and I put the clicker in my bag which is on the ground there. Well, this is technological progress. If you remember to bring this little device with you, you can do it seamlessly. So first slide, this shows the effects of these four factors. And you will see that each factor is considered separately. I'm not trying to add them together. And why? Because there's some overlap between the factors I'm talking about at present, particularly the link between slower growth and the remaining three factors. Slower growth reduces the rate of investment for instance. So, don't add those numbers up. They're all parts of a very complex mosaic.

So, the costs of low interest rates, including limits on the ability of monetary policy to respond to recessions is what we've covered. Now that we know where lower interest rates may be coming from, I want to turn to the question of what might contribute to raising longer-run equilibrium interest rates. And this relates to the question which is very popular which is called the only game in town. That is the charge that the Federal Reserve is the only game in town. Well, it doesn't have to be the only game in town. There are other sources of policy which could also be affecting long-run interest rates and those are connected to growth.

So, here's one that is very difficult to put one's hands on, but I'll mention it because one has a feeling that it's part of the story. And that is that Keynes, as you know, wrote about what he called animal spirits. Animal spirits is what optimistic investors have. There's something in the atmosphere, in their insides, in their equilibria, that suddenly has made them feel good about the economy. That's not the economy we're in today unfortunately. But that could change, and those things do change.

So, the first bar in this second slide illustrates the effects on the longer-run equilibrium federal funds rate of an increase in business sector investment equal to 1 percent of GDP. As you can see, such a rebound in investment would raise the equilibrium funds rate by 30 basis points, according to Ferbus. And in addition, higher investment would improve the longer-run growth prospects of the U.S. economy, although the direct effects are fairly small, with real GDP growth rising only about 10 basis points on the growth rate.

Now, I come to the second set of bars on that chart. Over the years, many economists – some of them write textbooks – have noted that expansionary fiscal policy could raise equilibrium interest rates. That’s generally regarded as a disadvantage, or was in the time when interest rates were more normal. So what I show in the next two bars is, first, the impact of a boost in government spending by 1 percent of GDP and another that cuts taxes by 1 percent of GDP. According to Ferbus, both policies, if sustained, would lead to a significant increase in the equilibrium federal funds rate. Higher spending by 1 percent of GDP would raise the equilibrium interest rates by about 50 basis points. Lower taxes would raise equilibrium rates by about 40 basis points. Now, I need to note that the Ferbus model does not contain a great deal of detail about taxes and government spending. These are thus the effects of very broad changes in income taxes and government spending, and not those of any specific, detailed policy measures.

And before I go further, I also need to emphasize that these are estimates from just one model and other models may give different results. But these are standard results, namely that the effects of federal spending are greater than those of a cut in taxes and that both are expansionary. Those are standard results that you’d find in the simplest textbook IS-LM model. One of my colleagues once said that economics is a field in which the frontier is closest to the introductory course, but you have to study it for seven years to believe it and to believe that what you read in the first course remains true. That’s true in this case too.

Stimulative fiscal policies as these could be beneficial if the economy entered a recession. And,

of course, it would be important to ensure that any fiscal policy changes during a recession did not compromise long-run fiscal sustainability.

Government policies that boost the economy's long-run growth rate would be an even better method of raising the equilibrium interest rate. This is a point I've made in the past. There's disagreement about what the most effective policies would be, some combination of more encouragement for private investment, improved public infrastructure – and many economists have emphasized improved infrastructure – better education for sure, and more effective regulation is likely to promote faster growth of productivity and living standards – and also to reduce the probability that the economy and, particularly, the central bank will in the future have to contend with the effect of lower bound.

So, in summary, a variety of factors have been holding down interest rates and may continue to do so for some time. But economic policy can help offset the forces driving down longer-run equilibrium interest rates. And some of those policies may also help boost the economy's growth potential. And that statement is sufficiently important that I want to repeat it. A variety of factors have been holding down interest rates and may continue to do so for some time. But economic policy can help offset the forces driving down longer-run equilibrium interest rates. And some of those policies may also help boost the economy's growth potential. Thank you very much.

(Applause)

QUESTION AND ANSWER PERIOD

CHAIRMAN TERRY J. LUNDGREN: Thank you Dr. Fischer. We're going to have a couple of questions and then I promise we'll serve you a proper lunch. But before, we're going to have the questions asked by Jan Hatzius. Jan is Chief Economist and Head of Global Economics and Market Research for Goldman Sachs. And then Nancy Lazar, Nancy is a partner with Cornerstone Macro and Head of Economic Research for that organization. And Jan, you have the first question.

JAN HATZIUS: Thank you for this insightful speech, Mr. Vice Chairman. My question is about implications of a very low equilibrium interest rate for monetary policy. If we do find that our star equilibrium interest rate stays very low for a long time, it's going to make potentially monetary policy more challenging because it basically means that the normal nominal funds rate is closer to the effective lower bound. And my question is whether you're confident that you would still be able to respond appropriately to economic downturns under the current framework, for example, by making interest rates negative? Or whether you think you may need a change in the framework such as, for example, a slightly higher inflation target?

DR. STANLEY FISCHER: Clearly having very low interest rates makes economic policy, monetary policy more difficult. There's no question about that. The Fed produced, during the aftermath of the great financial crisis, innovative policies, particularly large-scale asset purchases

and forward guidance, which is the use of the interest rate actually, which helped bring about recovery. But as I mentioned in the speech, I don't think those are substitutes – perfect substitutes – for the use of interest rates. So, some have suggested raising the equilibrium interest rate target. I think that I'm very concerned about that. Now I'll tell you a little secret. We are very close to our targets, the targets we in the Fed face. We have two. Full employment or what's called maximum sustainable employment – at about 5 percent unemployment we're very close to that number. The other is 2 percent inflation. Core inflation at the moment of the PCE, the thing we look at, is 1.7 percent. Well, 1.7 percent is very close to 2 percent. So, we're not in deep trouble on monetary policy at the moment. If some terrible fit of pessimism were to hit the economy, we might find ourselves in deep trouble, but we're not there. I'd be very reluctant to raise the interest rate target, the inflation target, at this moment because I find the logic of you can't get to 2 percent, so you're raising the target to 3 percent. It reminds me of a statement that I heard from one of my MIT colleagues who had an offer from a competing university. This was long ago, and being asked what the salary was, he was told it's \$100,000 but we don't pay anyone that much. So he said, well, in that case, you should make it \$150,000. (Laughter) It seems to me roughly the same to go from a 2 percent target that you can't get to, to a 3 percent target, as a solution to the problem. Now I'm simplifying, but that is a problem. Furthermore, changing that target when you're so close strikes me as undermining the whole framework in which you're working. So I'm not enthusiastic about doing that. I think there is a very interesting issue. There are countries that revisit, that have a programmed revisiting of the target. The Canadians have it, the Australians have it, and several others. That is something we might

consider, but we should not mess with the current framework at a time when it is so important.

That's my view.

NANCY LAZAR: As Jan said, Dr. Fischer, thank you very much. I definitely enjoyed your comments this afternoon. As you mentioned, around the world many countries have zero interest rates or obviously even lower. Yet some of these countries have not been able to create inflation. Some on the committee, FOMC committee, have suggested that zero rates are too low, and for a long period of time could actually create deflation rather than creating inflation. To the extent to which, as I mentioned in earlier conversation, you actually maintain excess capacity. Companies that should close, don't, maintaining a very, very price competitive environment. Roberto Perli, my colleague, highlighted to me that many academic economists talk about the reversal rate, a level of rates below which monetary policy effectively becomes contractionary rather than obviously stimulative. What is your view on the effectiveness of these very low rates to helping create specifically inflation in an environment of potentially way too much excess capacity? And is the United States maybe at that tipping point?

DR. STANLEY FISCHER: I don't think the United States is at that tipping point at present. And the countries that have reduced their rate, have moved to negative interest rates for a variety of reasons, say if you take the, let's just take the Swiss case but it's not the only one, it's to keep foreign capital from flooding the economy. And those work for that purpose. We don't have that particular problem. So, I think that there is a point at which if you kept cutting the interest rate,

you would get a perverse effect, because as you cut the interest rate, you're essentially telling people the rate of return, you are being charged for the privilege of lending to the government. And the more you're charged, the less income you have left to go out and spend. And there is a belief, I think, particularly in parts of Europe, that you flip that relationship at some point, and I find that a plausible argument. I haven't seen the empirical evidence, but it seems to me a plausible viewpoint. So, it could happen. I don't think we're there now, although I do think that operating at a zero rate or very close to the zero rate, does raise concerns about what expectations people have for the future. Now if there is no rational basis to be optimistic, then I guess you can't go around telling people to be optimistic. But if there is a rational basis to be optimistic, and I don't want to go into whether if I was a politician I'd be optimistic, but I can say that I think it comes sort of from your personality and that there are some people who are better at being optimistic and others who are less good at that. And we don't have anyone who is being very good about being optimistic at present. That's why I put in the animal spirits part of what could be done.

JAN HATZIUS: One other question, or perhaps a follow-up to the earlier one. Even if we say it's inadvisable to change the inflation target, one might make the argument that concerns about the effective lower bound might make us want to really make sure that we reach 2 percent and that we don't fall short for some reason. And that might lead into a discussion of overshooting of full employment. And I think you gave a speech earlier this year saying that a small overshooting of full employment could be helpful, but a large persistent overshooting would be potentially

risky. And I'm curious whether your views on this issue are evolving in light of a discussion at the last FOMC meeting according to the minutes released last week expressing perhaps more interest in exploring a bigger overshooting, and also in light of Chair Yellen's speech at the Boston Fed Conference on Friday that you alluded to earlier where she said that it may be, it may be possible to reverse some of the effects of the downturn on aggregate supply by running a high pressure economy which to me sounds like an economy that overshoots full employment? I'm curious whether your views on these issues are evolving.

DR. STANLEY FISCHER: Well, I mean one always looks at evidence and one ought to look back at what has happened in the past when there's been overshooting. The common belief, and one ought to substantiate this, is those attempts at overshooting have not been that successful and have frequently resulted in subsequent inflation. So one has to look at that possibility, but if it turns out that there is evidence in the other direction, that's fine. I didn't, now that I have you up there, Jan, I was quoted in a report from Gold...one of the investment banks...(Laughter) as having opposed overshooting. I think the qualification you made now is probably more accurate, namely going for bigger overshooting is, you know, if you go above, if you go below the full employment, people's estimates of full employment rate, by a couple of tenths of a percentage point, I don't think there's any danger in that. But saying we should keep going until the inflation rate shows us we're wrong, then you're going to change too late.

NANCY LAZAR: I'm actually an optimist so I apologize for another negative question, but it's

why this current economic environment is so frustrating to me. I think we do have so much potential. As you highlighted that the economic is anemic and as a result it's a very difficult environment for companies to make money and profits are actually struggling. Even if you take out the hit the energy industry has experienced over the past couple of years, profits based on the broader NIPA data are in a declining trend. You highlighted in this speech and in previous speeches about the weakness in capital spending – something that is, I would totally agree, very, very frustrating. But that's in part now cyclically because companies are indeed seeing downward pressure on their profits. So, it's difficult to engineer a capital spending cycle potentially at this stage of the business cycle. In any event, doesn't that also imply if companies now have to focus on controlling cutting costs, that maybe even employment is at risk going into 2017?

DR. STANLEY FISCHER: Well, profits are declining. They're declining from historically extremely high levels. So I don't know, at some point that was bound to happen. And it can't be that we've got to have ever-rising profits in order to justify investment. There's got to be a decent rate of return on investment but not an ever-increasing one. And if it was true that rising profits would generate investment, rather than what has happened which it seemed to have generated buy-backs to...sorry, yes, buy-backs to a considerable extent during the most recent period, that means that it's the prospects in the economy that are out there, rather than the lack of profits that is holding investment back. And so we've got to put in place forces that will generate more rapid growth and I've been talking about those.

JAN HATZIUS: One other question that you touched on very briefly in your discussion of productivity is the question of whether potentially productivity growth has been mismeasured and perhaps mismeasured by more than in the past, and the question of whether that might be one partial explanation for the slowdown in measured productivity. And I know you've been interested in that question in the past. There's been a lot of research published on this issue, and I'd be interested in an update of your views of this issue.

DR. STANLEY FISCHER: Well, there's been a lot of work trying to find out whether we're mismeasuring productivity growth. And I used to say, well, for people like me, or for everybody sitting at this table, productivity growth has been incredible because you can now, more or less, do your own research by visiting one of the...visiting – excuse my advertisement – visiting Google and finding out rather than having a research assistant look for the fact for a week or so. All that makes us very much more productive, I said, but it's much less applicable to the general public. And I said this in a speech in New York and somebody said to me, have you ever traveled on the subway? Well, I figured out that is the fastest way between uptown and the Fed, so, yes, I have traveled on the subway. And what do you see people doing? Everybody on the subway is using their iPhone. And so it isn't only us who is enjoying the benefits of information technology, so it is widespread. Then you come to the argument of it isn't measured, the output isn't measured in GDP. All of the excitement you get by doing what you do on an iPhone doesn't enter, doesn't enter GDP. So it depends how far you take that. Marty Feldstein has been taking it

very far. He says we just, our measures of output are so poor that it's not worth, that GDP isn't worth the paper it's printed on, the money it costs to produce, whatever line you'd like to dismiss it with. The tougher guys say actually it's always been the case that it's been mismeasured. So, you have to believe it's more mismeasured today than it was in the past, and there's no reason to think that's true. There is another fact, and let me go on a little bit at length. One thinks that, well, if we were growing nicely, we'd all be feeling happier, and we aren't. So maybe we should look at some polls and ask people how they feel about life and so forth and see if you can get anything there. Now there is one interesting feature which is people are more optimistic about their own future than the economy's future. I'm okay but the economy's a big matter of concern. Nobody's developed what that is about. That could be consistent with productivity as being mismeasured. So that's a possibility, but we just don't have the evidence that it is being significantly more mismeasured than it was in the past. And I gave you all you economic, former economic students, some encouragement by referring to the IS curve, so you know that some of what you learned was useful. The other thing that is frequently said in this context is GDP does not measure consumer surplus, it measures production. And consumer surplus is a theoretical concept. It's how much better you feel or how much more utility you get out of a good than what you paid for the, than what the loss of utility from the payment you have to make for it is. And the statement is always GDP does not measure consumer surplus. So we may all be getting surplus that doesn't show up in the data. That's what Marty Feldstein basically asserts. Well, that's a long way around saying maybe there is more to the mismeasurement argument than people have been able to find so far.

CHAIRMAN TERRY J. LUNDGREN: Last question Nancy.

NANCY LAZAR: You mentioned that core inflation is running around 1-1/2 percent and with the commodity prices no longer a tailwind for headlined inflation, which I know the Fed doesn't target, but certainly that's going to make a difference to the consumer, by the end of the year headline CPI will probably be approaching 2 percent, wage inflation is only about 2-1/2 percent. So, there's this effort to get inflation to accelerate, but isn't that at least, say for the next six to twelve months, a risk to the extent to which it will be a tax on consumer real purchasing power?

DR. STANLEY FISCHER: I mean typically one assumes that as inflation goes up, the rate of wage increase goes up, so I don't think we'd get that bump-up in inflation without seeing further growth in the rate of wage increase. So, I'm not sure that further inflation would be a negative for consumers and for employees. So, I'm not certain that your empirical basis is correct, but we'll find out in due course. CPI has been above, running above 2 percent for some time. So, in fact, if we'd chosen a different inflation rate, we'd be there already. So, we're close, that's how close we are to getting to our targets. And once we're at our targets, the big issue will be growth, growth, growth. What can we do to get growth going? What can we do to get productivity growth going? And that's what's missing from this economy and missing from the world economy at present.

(Applause)

CHAIRMAN TERRY J. LUNDGREN: Thank you Dr. Fischer, and I think you've earned your lunch, so we'll feed you now. Thank you. And thank you to our questioners as well, Jan and Nancy, thank you. Just a reminder, tomorrow morning the Economic Club continues with another timely presenter. Political analyst Charlie Cook will have a breakfast with us, our members tomorrow. And then we have Jeff Bezos, founder of Amazon, on October, the 27th. WE have the Presidents of the Federal Reserve Banks of Dallas and Minneapolis on our agenda coming up here in the next several weeks, as well as Mike Bloomberg commenting, making his comments post-election. So, we have a great lineup. Make sure you look at the schedule, and I hope to see you at future events. In the meantime, please enjoy your lunch. Thank you everybody.