The Economic Club of New York

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The Economic Club of New York

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Wharton School of the University of Pennsylvania

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

Chair John C. Williams

Good afternoon and welcome to the 752nd meeting of The Economic Club of New York. I'm John Williams. I'm President and CEO of the Federal Reserve Bank of New York and the Chair of the Club. Recognized as the premier nonpartisan forum for the nation, The Economic Club of New York stands as the leading platform for discussions on economic, social, and political matters. And for more than a century, the Club has hosted over 1,000 preeminent guest speakers contributing to our tradition of excellence.

I'd like to extend a warm welcome to students who are joining us virtually from the University of Pennsylvania, the Gabelli School of Business, and the City University of New York Graduate Center as well as members of our largest-ever Class of 2024 Fellows – a select group of diverse, rising, next-gen business thought leaders who I'm looking forward to meeting with later this week.

For today's program, we're honored to welcome Jeremy Siegel. Professor Siegel is a Russell E. Palmer Professor Emeritus of Finance at the Wharton School of the University of Pennsylvania. Renowned for his expertise in stock market investing, Jeremy is a celebrated professor, researcher, and public speaker whose insights have shaped the understanding of financial markets worldwide. He's the author of the best-

selling seminal book, *Stocks for the Long Run*, which I have read from cover to cover, as well as *The Future for Investors*.

The format today is going to be a conversation, and I'm honored to be moderating that. We'll end promptly at 1 p.m. and we will have time to take questions from those in the room. So our conversation will take maybe 45 minutes. We'll have time to ask questions from the room so please get those ready. As a reminder, this conversation is on the record. We have media on the line and in the room. So without further ado, please join me in welcoming Jeremy for this conversation.

Conversation with Jeremy Siegel

CHAIR JOHN C. WILLIAMS: So, why don't we get started on a topic I know that you've been talking about over the past few years, and that's monetary policy. So tell me, you've been somewhat critical of central banks' monetary policy over the last few years, but how about we start with how have your views evolved on that and share them with the group. I'm sure they'd be interested in hearing that.

JEREMY SIEGEL: Let me give you a little background just for a couple of minutes because I think that's important in terms of why I had the attitudes I had and how I have them today. I got my PhD in Monetary Theory and Policy at MIT. I studied under

Keynesians, you know, Paul Samuelson, Franco Modigliani, Robert Solow. I wrote my dissertation on money and inflation, and I read everything Milton Friedman wrote. And I said, I want to start, if I can, start my teaching career at University of Chicago.

So in 1972, when John was only 10 years old, you see I'm pulling age rank over here, I was able to study at the feet of who I thought was the greatest monetary economist, Professor Milton Friedman, who was my colleague at Chicago. His last four years were '72 to '76, and those were actually the four years I spent at Chicago. I had many lunches, dinners with him.

I remember two things he told me that were so important. He said, Jeremy, from a year-to-year basis, money and inflation will not correlate well. But he said, if you ever have a big burst of money, you can be sure there will be inflation 12 to 18 months later. He also said that over long periods of time, if you had money growing way faster than the growth of the economy, you're going to have inflation spill over there. Again, not a close correlation short run, but those two things are...my empirical research really seem to be very convincing on those points.

So, here we have the pandemic that began, as we all know, in March of 2020. I follow monetary theory and policy at the Fed and all the rest. Money supply, it's sort of fallen out of consideration after we conquered inflation in the 1970s and Paul Volcker

squeezed it, brought the interest rates really high. Money supply, which was growing at 10% a year in the 70s and early 80s went down to a 34-year period actually of money growing at only 5½% a year, which is pretty much what theory would say is consistent with a 2 to 3% growing economy plus a 3% inflation rate, as you know, the most basic quantity theory.

Then we have March 2020. And we have an explosion of money and spending, you know, no one knew what was going to happen. And I don't fault the Fed for the explosion of money that occurred between March 2020 and July 2020. By the way, there was a 17½% in M2 money growth, which is the broad measure that Milton Friedman thought was the most important. Never before had we seen such a spurt during that period of time.

What I faulted the Fed was that even when the economy was really beginning to recover strongly, the Fed continued to increase the money supply at double digit rates – I think it was actually 11% per year – all the way until March 2022. So in those two years, from March 2020 to March 2022, we had about the biggest two-year increase in money supply in our history. I know the year 2020 itself, with over 20%, was the biggest single year since 1875, 1865 when Milton Friedman started his...right after the Civil War.

So I was very convinced right away. April, May, June, I began to write commentaries, articles, we're going to have a lot of inflation. This inflation, not temporary. I mean we know about the supply chain interruptions, but the money was supporting it. The speculation, I mean, in the markets that we all saw what was happening. Stock markets are going up strongly, speculative stocks even more. Real estate, actually the biggest two-year increase in real estate prices from March 2020 to March 2022, 45% on the Case-Shiller Index. And that's what Friedman said. First it was going to go into speculative assets, you know, real estate and all that sort of thing. And we know, I mean, the Fed finally admitted the pivot was way too late. It began talking about it in November and then finally it wasn't done until March 2022. And inflation did follow 12, 18 months later. So I was really critical of that.

Now, then I was worried that the Fed slammed on the brakes too hard because looking at, again, the money supply, not only did it, you know, slow down back to what I thought should be 5%, it actually started declining. And we actually had about a 4% or 5% decline in M2 money supply from March of 2022 to March of 2023. That alarmed me. It was the first year-to-year, year-over-year supply, money supply that we had had since World War II actually. And I said, oh, my God, this could lead to that.

And then in March of 2023, when SVB went under, I said this is the beginning of this, and I was very, very worried. I said the Fed should just stop because they don't know

how much this decline. I said that it was like the Fed was speeding on a highway 130 miles an hour in the 70 zone and said, oh, my God, I'm going too fast and then slams on the brakes and said, you know, there's a danger of just going through the window.

But this was important. I was watching and I said, April, May, June, you know, not much of a slowdown. July I began to say, you know what, I may be wrong. I may have overemphasized how restrictive the Fed is now. And actually, although I was very critical, in July I actually made a pivot. And I was on CNBC and several other media and I actually said, you know what, when I look at it, it is holding up a lot better than I thought.

And when I thought about it, and I know we're going to get to this a touch, the natural rate of interest, R-star, which John has written about extensively and we can talk about that, what it should be, has gone up really dramatically. In other words, what John and everyone else, actually I thought it was less than a half of a percent. You did the work with Lobaum, was that it? Laubach. Did the work that said R-star got down to a half. I actually thought it had gotten down to almost minus a half at one particular point.

But as I began to think about it, I said, you know what, it's gone up dramatically. And it probably, I think it's back to probably at least 1½ and maybe 2 right now, and we can talk about that. Which, of course, means the long-run fed funds rate ain't going down to

2½ anymore. It's going to be higher. And we're not as restrictive as I thought. And we could talk about the reasons why that R-star has gone up because I think it's important. But then I began to hold back and I said, you know, they said they had gone to 5.3 in the fed funds. Now, I am a little worried. Money supply has gone up in the last year but very weakly. I'm really trying to dig into the M2 money statistics because, you know, John, the Fed, it used to be weekly and now they go monthly and they don't do the details they did before. And I'm trying to dissect on exactly what is actually going on. But that's another thing.

So maybe the money supply is not quite now as restrictive as it was before. Certainly the rate is not as restrictive as even the Fed thinks it is at the present time. So after kind of a disastrous beginning, they may have come close to hitting it right on where the fed funds has to be to bring us back towards that 2% inflation rate. So I really dialed back on my criticism although you could say we shouldn't have been in the situation we're in had we tightened much, much earlier.

And I just want to say, and I'm going to let John make some comments over here, that there's 19 members of the FOMC. There's a big staff. We don't get the actual transcript until five years later so we don't have the transcript. We have, of course, the summaries on that. I know that Jay Powell was asked by several people in public forums what about this dramatic growth of the money supply that you're engineering, and he said our

studies show no relation. He poo-pooed that tremendous increase in the money supply. And I was disappointed, I don't know whether there were vocal people at those meetings. I mean, if I were a member of FOMC, I mean, I would have been a dissenter, and a vocal dissenter for that whole time.

And I mean, is monetarism, did it just get lost? I mean, did all the work from Milton Friedman, for which he received a Nobel Prize in 1975, just like totally vanish? Like, oh, yeah, that's, no one believes any of that anymore. I mean, I thought that that was shocking to me. And disappointing to me in terms of having taught, I mean, you know, I understand the role of averages, I'm not a strict monetarist. I've had, you know, Keynesian, aggregate demand is very important. In fact, in the short run it's by far the most important thing. But it was like one part of macroeconomics or monetary theory just like fell off a cliff. And what do you think, John?

CHAIR JOHN C. WILLIAMS: The one sentence I heard is that now the Fed has got it right. That's the one that I'm taking away.

JEREMY SIEGEL: Well, you know what I said on the air about that. Someone said should we give Jay Powell the Nobel Prize, and I said, whoa, giving Jay Powell the Nobel Prize is like giving the Nobel Prize to a drunk driver that ran over a pedestrian but got them to the hospital in time to save his life. (Laughter) I'm not going to give Jay

Powell any Nobel Prize or kudos. He happened to hit it maybe right. We still have time to go. But should never have expanded credit as much as he did in that two-year period.

CHAIR JOHN C. WILLIAMS: So, as you said, one of the things that we're going to talk about more, besides monetary policy, is how markets have been behaving. And we're going to talk about the neutral interest rate, which was not my suggestion. Jeremy brought that up. So let's talk some about, like what are you seeing today in equity markets? We have higher interest rates as you talked about. So what do you think are the big, what are your thoughts about equity markets today?

JEREMY SIEGEL: So we should take, okay, so the most important valuation is certainly a price/earnings ratio of the market. Obviously you have to do some cyclical correction for it. I don't know where that would put us right now. I don't think we're at a top of a peak of a bottom of that. So I'm going to take it as sort of a normal one. I've written extensively that the right price/earnings ratio of the market overall should be about 20. And, of course, there's wiggle room around that.

Now, people point out to me, well, Dr. Siegel, you know, the historical is 16 or so. Well, I talk about it a lot in my book, *Stocks for the Long Run*. I've written on this. There is very good reason why over time, don't forget when we say, we've got data on corporate profits and earnings going back to 1871, so we have over 150 years. There is a very

good reason why there should be an upward migration of the equilibrium price/earnings ratio. I mean you can talk about, you know, changes in risk preferences, recognizing equity risk premium.

But even forgetting all that, just the simple reduction, dramatic reduction in transactions cost of getting a perfectly diversified portfolio. I mean, can you imagine someone in the late 19th century or the first half of the 20th century, I want to do a market capitalization weighted portfolio of the market. I mean, even just take the S&P500, which didn't exist until 1957, but anyway, think of how much cost, you know, administered brokerage costs that were set by the New York Stock Exchange, bid-ask spreads that were much higher. You had to do rebalancing all the time. I mean, I would say it probably was at least, to try to do that would be at least 100 or maybe 150 basis points a year in terms of cost. Today, it's zero. Right? We can all get the S&P 500 at zero. Zero.

So even though, you know, my book shows that the long-run real return on stocks, let's say it's 6½% per year , what do you think the average investor was getting, even if he or she was pursuing that they knew Markowitz way back then and tried to pursue that broad-based thing, they were probably getting about 5%. Well, 5%, real return on the market is exactly consistent with a 20 price/earnings ratio. Or 15, one over 15 is 6½. That's a 6½% real. And they were probably getting 5%. If they tried to do it today, you can get the market at zero basis points. So, you know, the 20 P/E of today is, I guess,

the new 16 P/E is the 20. I might have put that in that particular context. So you can even argue on the basis of transaction costs that there should be upward migration, and you could use other things there.

So where are we? Well, by the way, it is forward. Theory tells you; you do use the next 12 months, I know people say, well, we don't know. People use the back 12 months, but the truth is that if you do a formula to do a valuation, it is the next 12 months. And on current expectations of S&P, we could argue if they're too high or too low or not, they do tend to come down a little bit. You know, we're at 20½, 21 maybe. That's within the ballpark. We also have, as we all know, a fair, a much more than average bifurcated market in the sense that growth is 30 to 35, I mean depending on how narrow you want to define the technology sector and the winners. And then you have the so-called value stocks at 16, 17, but that's like the 150-year historical average. That's not at all.

And then, of course, you go outside the United States – if you believe in global, which I do – and it's 15, 16. I mean Europe is 13 and Japan has just come up, I guess to 16, 17. Emerging markets are, you know, whatever they are, 13, 14, 15. I mean these are all really even low from 150 years of doing valuations. So I don't see, I don't see anything like a bubble. I mean we could talk about whether AI stocks are in a bubble or not, going forward. But I look at it as pretty much, you know, when people ask me three to five years, what kind of real return do you expect? Well, from a 20 P/E ratio, it's going to be

above 5% real.

And it's very important to remember, a lot of people say, oh, I can get 5% on Treasuries, no, you get 5% nominal on Treasuries. You want to get the real on Treasuries, you go to TIPS. And TIPS are barely 2%. So, I mean, that's the comparison. So that equity premium of 3 or more, I mean that's still there. So, in fact, the long-run equity premium, in my long-run 220-year series, the real return on bonds is 3½%. The real return on stocks is 6.7, 6.8. So that's a 3,2,3,3. Right now, so you take the 2%, say 10-year TIPS, add 3, you get 5%. That's consistent with a 20 P/E market. There's nothing out of joint really at all in terms of where things are priced today relative to long-run valuation yardsticks of the past.

CHAIR JOHN C. WILLIAMS: So talk a little bit now, you mentioned the TIPS returns over the long-term real yields on bonds. And you mentioned earlier that your view is that we're moving back to maybe a more normal real interest rate or neutral interest rate. So talk a little bit about why you think that's happening and what's the evidence that supports that.

JEREMY SIEGEL: Right. And, you know, I think one of the benefits, again getting my PhD in economics, looking at it from a very macro perspective, and you look at it also, I know, from a very macro perspective, I mean you talk to a markets person, everything

begins and ends with the Fed on interest rates. Well, we know that there's a good theory of the foundation of real interest rates. It goes back to Irving Fisher and others, you know, even further back in terms of the theory of what are some of the basic components of those real interest rates. And, you know, again real, after inflation rates of interest.

One of the most important ones is real growth. It's positively related, pretty much on a one-to-one basis, real interest rates to real growth. And theory tells you that. I mean if you take the growth models of Solow and others and you solve out, you basically get that. Marginal product capital moves to that growth rate that you have in the economy. So the slower the growth, the lower the real interest rate. The higher the growth, the higher the real interest rate. There's also time preference and things like that. We could talk about, well, let's leave that out in terms of that because I think growth is one of the major things.

But what I think, and the more research that I did, and this is something I've come to in the last 10,15 years, a really important and ignored factor on interest rates is to what degree do Treasury bonds, let's take the risk-free asset, the long-term risk-free asset, to what extent do they hedge the stock market or other risk assets? How good of a hedge? I mean people have a 60/40 portfolio or 70/30 portfolio because they want to hedge, right?

And so, so Treasuries turn out to be great hedges when you have certain types of risks – geopolitical risks, recessions, pandemics, financial crises. But during all those times, when the stock market was tanking into a bear market, your Treasuries rose. But there's one type of risk for which bonds are absolutely terrible, and that's inflation risk. Because the Fed has to tighten, it's raising real rates.

And that's why everyone was shocked in 2023. Oh, my God, you know, the stock market went into bear market and my bond market collapsed. It was the first time they moved in the same direction. So when you look forward and you're thinking about, well, alright, what kind of portfolio do I want, don't forget, we had 40 years of basically no inflation. And after, you know, Volcker brought it down from '81, we went to 2021 basically, 40 years. And so only those risks for which Treasuries were really good. And I think that that was a major factor – Campbell and Viceira and several others have written some academic articles on that – of the big decline in real rates.

Remember, when TIPS were, when the 10-year TIPS was first floated in January 1997, if I remember that right, they were priced at 3½%. I remember I got a call from, I don't know if it was Bloomberg or one of the news agencies, before they came out, they said, Dr. Siegel, what do you think these TIPS are going to come out in, in a few days, what do you think they're priced? I said, well, you know, I have 3½% as my long-term real bond, and there they came out at 3½% just a week later. And then they went up to over

4%. And then they started a long decline. It started with the Asian financial crisis and you have a long decline of real rates from 4 to 3, 2, 1, minus 1, minus 1½. That period was a period where the risk of inflation kept on going down, down, down in people's minds because there was none. Bonds were great as hedges against the geopolitical risks and everything else.

So, you know, portfolio managers loved them even though they didn't have, I tell a story often. I knew one portfolio manager who managed billions. He had one extremely rich investor. And he covered the name and said, here's my portfolio. I said, oh, yeah, a lot of Treasury bonds. Do you really think that they're good? He said, no, they're not good, but they serve a very important purpose. And I said, well, what purpose do they serve then for this client? And he said, well, let me tell you. So when there's a bad day in the stock market, you know, and the headlines start up, I get a call from him. Let's say Jim calls him up and says, you know, hey, how did we do today? I'm getting some really bad news on the press as far as that. I said, well, guess what, you know, our stocks are down 4% or whatever, but our Treasuries are up 3 points. Your portfolio is only down 1 or 2%. Oh, Jim, says, that's good. Okay, keep up the work.

Now think about that. How much is that worth? That hedge, that hedge which worked for 40 years, it's like an insurance policy. It's like I'm going to, you know, you don't expect to make money on an insurance policy. You expect it to pay off when something

else goes bad. So I don't care if the yield was down to 57 basis points on the nominal 10-year. I mean who cares? It's an insurance policy.

And as long as people overreact to short-run risk, which they do, we know that, that's one of the reasons we get an equity risk premium much bigger than it should be. And so, you know, when they hear the market has crashed, they look at their Treasuries and they go up. All of a sudden it doesn't. And all of sudden when they have to think about going forward, my goodness, what kind of, it's a probability of, let me tell you if you ask the sophisticated investor, the probability of another inflationary burst in the next 10 or 15 years, if you had asked that person in 2021, it would be this big of a number. If you ask them now, it's going to be a much bigger number.

So how do you price the bond? The bond isn't as good under that risk scenario. I've got to price it higher. I've got to get a higher real rate of return because it's not providing the diversification. This is all really standard finance. But it's in a macro context in thinking about the driver. So there's two drivers here on the real return. There's the real growth rate, which we all know has been much greater than anyone expected, including the Fed. But it's been higher. We can talk about it later. The promise of AI makes that growth maybe considerably higher in the next 10 years. We could talk about that. But then a very important thing, my bond is not as good a hedge as I thought. I'm going to have to just get a higher rate of return. And that brings it up.

And, by the way, it's both on the borrowers and the sellers. Look at how much, like the firms, so let's take, it's very easy to say on the part of lenders, I need that premium because I'm not getting the diversification. But take a look at it from the other side, the firms that are issuing them. They made out like bandits by issuing those. If there's another inflationary burst, I'm getting paid back with depreciated dollars. I'll pay a higher real return to have that option, of paying off of that, depreciated dollars in my borrowing. So there's more supply. There's less demand. There's lower price. There's higher real return.

And that's why I think that long decline in real returns that we saw from 1990 to, well, 1995, it was starting in1990, it was a 30-year process to the pandemic, you know, it slightly turned up. And I think it's going to be settling at, I mean R-star, which I think actually went probably down to about minus a half percent, the Fed has it at plus half percent, it's probably 1½ to 2%.

Now you add a little term premium, you know, for the bond because normally we have a positive term structure and we can talk about the inversion on that if we want to later on. You know, you're talking about TIPS, you know, in the 1½, 2% range which is exactly where it is today. Add a 2% inflation, you've got 4½%. I think that long bond is pretty much where it should settle under current risk structures looking forward.

CHAIR JOHN C. WILLIAMS: I mean one of the things you mentioned, which is, I think, really important, it's not just the uncertainty about futuristic covariance or the source of shocks. And if the source of shocks has changed or the perceived source of shocks is changing, that changes the covariance of returns. I mean it is an open question. When we bring inflation to 2% on a sustained basis, that maybe the concerns about inflation will also evolve too.

JEREMY SIEGEL: And you're perfectly right. I mean if it's demand shocks versus supply shocks, I mean back in the 70s when bonds were also terrible hedges, and there were these supply shocks that caused the real economy to go down because of oil and also inflation, so you were double losing on the supply stock side. On the demand side, then you get that benefit on that. So it's not only, it's not only the perception of the inflation but it's actually the perception on the demand shocks and supply shocks.

CHAIR JOHN C. WILLIAMS: Right. Exactly. And, you know, when we were in the very unusual period of near zero interest rates after the financial crisis, demand shocks were, like you said, the predominant issue. And today, or recently, supply shocks have come to the fore. So let's talk about the supply side. You've already kind of mentioned AI. You've mentioned a more bullish view on longer-term growth. So let's start with AI. How is that going to transform?

JEREMY SIEGEL: You know, a lot of people who are far more knowledgeable than me are writing on this. I just read a research paper by Goldman that just came out actually that said that they thought, and this was, I had been saying a half to 3/4 of a percentage point higher on GDP, they're saying 1 to 1½ percentage point higher for ten years on GDP because of AI. They say the adoption has been only 5% of the firms have permanently included. Of course the individuals in that firm have been using it, but permanently in there it's starting a little slow. Those firms that have seen it have seen a 25% average growth of productivity in moving to that. About 17% was the median. There were a few that were on that high score, which was, I mean, was much higher than what I thought.

Well, whatever, we can argue whether it's 75 basis points or 150 basis points, but that will raise real, that will raise real growth. Anything that raises real growth will raise those real interest rates, will raise R-star. Don't forget, am I right, John, when the first, when was the first dot plot? I don't remember. Twenty years ago?
CHAIR JOHN C. WILLIAMS: 2012.

JEREMY SIEGEL: Oh, 2012, so not quite that. So 12 years ago. You had an R-star of 2½, right?

CHAIR JOHN C. WILLIAMS: Somewhere, a little over 2%.

JEREMY SIEGEL: Yes, it was a little, because 4½ was considered the long run. And then it kept on slowly going down. And I remember, I was always, Bill Gross actually wrote an article where he said I thought R-star was zero, and it was way before it was zero. And I remember thinking about that and beginning to say, you know, he might be right. It might have been going down that far. And, of course, finally you moved it down to half a percent.

Now, in the last dot plot we had the first, I think, median move. Am I correct? Up to 2.6 on the long-run fed funds? So that's .6 when you add, you just add that 2% inflation target to the R-star to get what you think the fed funds is going to be. So the long-run fed funds moved to 2.6. I expect that every three months it's going to be 2.7, 2.8, 2.9, 3.0, 3.1. I mean the Fed is not one of these people that suddenly move any of those things.

And I don't want to ask John, you know, privy on what discussion goes on. I mean you've got a lot of other things. I mean I'm sure some discussion of R-star is going on and there will have to be some discussion on R-star, you know, if, I guess I should say, if and when you start moving it down, let's say when you start moving it down. But I don't know whether how much of a discussion they've had about these factors on R-star. Clearly, given your writings, would be the resident FOMC expert on that issue.

CHAIR JOHN C. WILLIAMS: Well, you know, every quarter, as you just pointed out, we put out the dot plots that include our long-run view as you pointed out. So obviously we think hard about those issues. But there's other factors there. I can't help but respond a little bit. You mentioned the time preference and you moved on. But I mean demographics across the globe are one of the factors that have driven, you know, arguably have driven neutral rates down. Birth rates are extremely low around the world. People around the world generally are living longer. Those are factors.

JEREMY SIEGEL: Part of that does feed into the lower growth part of the story. But part of it also feeds into a time preference because people have a longer retirement period in terms of all that. Of course, you know, there's so many complicated, they have a longer retirement period, and I talked about that a lot, about the Baby Boomers selling all their wealth to get their consumption if they're going to live that much longer. It's a fascinating issue, you know, keeping the retirement age at 65 as life expectancy continues to rise. And may, because of developments that we see in the medical profession now, really rise substantially over the next 20 years.

CHAIR JOHN C. WILLIAMS: The key driver, as you're pointing out, is kind of the percentage of your adult life that you're working versus the percentage of retirement after you stop working. And the latter is getting longer while the former isn't. And that leads to people saving more around the world.

But let me get to this AI, challenge you a little bit. We've discussed a lot about that AI is driving additively, as you said, adding 3/4 of a percentage point to growth, or 1½ percentage points. Another way to think about it, and I'm very influenced by the work of Bob Gordon on this, but I'm speaking for myself here, is that AI is just the way we're going to get that 1-1/4 to 1½% productivity growth that the U.S. has had for over 100 years. I mean we had automation, or we had, you know, industrialization, we had automation, we had computers. There's been a lot of names associated. But we've got a pretty steady, over the long run, kind of productivity growth. So why do we want to add to that, when you did your math, say, well, we'll get 1-1/4 to 1½, but let me add another 3/4 of a percentage point? So, is that a...

JEREMY SIEGEL: You make a good point. You're sort of almost taking the Robert Gordon view of it's just another technology.

CHAIR JOHN C. WILLIAMS: It's the newest thing.

JEREMY SIEGEL: We could go back to the internet and talk about, you know, that was a new technology, and did that really open a floodgate? Is this just another new technology that happens? Or is it qualitatively different? And people that I've talked to say that it is qualitatively different in the sense that, and not that it is, you know, some people think, like in two years we're going to have 30% unemployment or something like

that. Nothing like that is going to happen. It's going to be evolutionary in that sense. But, I mean, progress is made by combining the knowledge of everyone, when you take a look at the history of that. Actually I thought the internet was going to accelerate productivity growth much more.

If you study the history of invention, a lot of things were invented in parts of the world that no one else knew in the other end. When those people died, like it got lost for periods of time. I mean that can't happen in our current, any advance is going to be written down. And so I want to solve this problem, I will see if someone had worked on it. That saves so much time. You don't have to replicate the same sort of experiments again, that I think it could qualitatively change productivity dramatically. That maybe 3% productivity growth rather than 1.

CHAIR JOHN C. WILLIAMS: It's very rare in U.S. history to have 3% productivity for a long time.

JEREMY SIEGEL: You know, I guess the early 60s.

CHAIR JOHN C. WILLIAMS: Yes, that would be the period.

JEREMY SIEGEL: But the question, is it possible that AI might bring us back to a

decade of that? And there's always the normal advancements. I know what Robert Solow, we called it learning by doing. As you're doing things you just learn how to do it better, even if there's no new technology. Oh, you know, I could do it this way and just save this amount of time. I mean it took, I always find certain things, like it took basically our transportation system 80 years to realize that by only charging on one side of the toll going across the bridge, saving 50% on toll workers. So it's 50 years to figure that out. Now, it is true, you could go hundreds of miles out of the way and maybe beat the system, but no one I found out ever did.

I mean they're such simple things that you can do to increase productivity sometimes that it's not even a matter of technology. It's just, why didn't I think of that before? And that's always going on in the background of what is happening. But I think the most important thing is not the replication of experiments, and that you're bringing the brightest minds of the world, not just, you know, and let's face it if you talk about technology and the industrial revolution, it was basically Western Europe and then a little bit in the United States. And so, what, 80% of the world's population wasn't exposed to it. Now that 80% is exposed to it and their brain power can, in fact, be used to accelerate it, that we never had before. So these are qualitative factors that I think can accelerate longer term growth.

CHAIR JOHN C. WILLIAMS: One of the challenges for us is that if you go back to Bob

Gordon's work again, that our last productivity surge from '95 to 2004, so a lot of that was driven not just by the internet and new technology but we produced a lot of chips and computers back then. And that shows up in our productivity because we're producing high value-added production. We produce very little of that today. A lot of that would be, you know, globally it would be productivity, but not as much as productivity from the actual production. You're talking about productivity from the use.

JEREMY SIEGEL: I'm talking about productivity use. Of course, we do have Nvidia, right, which is U.S. although they have it made in, the chip is made in Taiwan. We do have that factor. And, in fact, that's right, some of the growth, in other words, what you get at first is growth through the investment. That's not productivity. I'm putting the chips in so that we can set up a system that will actually increase the productivity next year or the year after that. But it'll go into GDP because it's part of investment, but you won't get that so-called consumption out of it, which is I'm going to get the output out of it at a much cheaper cost until it's in and the systems are implemented at the company level. That takes time.

CHAIR JOHN C. WILLIAMS: Alright, so we promised 15 minutes for questions, so we'll go to the audience here. We did get some beforehand. So while people are getting ready to raise their hands for questions to you, I'm going to ask one that came through beforehand, which I think is a nice connection to generative AI and all of that. So you're

a professor, taught business school for, you said, over 40...

JEREMY SIEGEL: Forty-nine years.

CHAIR JOHN C. WILLIAMS: Forty-nine years. A lot changed in those 49 years, but when you think about AI, when you think about what the modern MBA student is looking for or however you think about that, what is changing? What needs to change in education, in that world?

JEREMY SIEGEL: Yes, I mean there's been, how should I phrase it? I mean I was privileged certainly to teach at Wharton, which is the best undergraduate school and one of the best, I think, in the graduate MBA, but it has an undergraduate program, which had some of the really brightest people. But I actually chose, in my last few years, not to teach in the MBA program because I didn't think honestly that MBA students were as serious as when I first started, to be very honest with you.

I think what's happened is that, and I think it's all at the good schools, is that they want the stamp and they want the connections, the networking. And part of this is the school's own fault because they keep on choosing older and older people as an MBA. Now, I went to Chicago, which had the youngest MBAs. Half the people were either right out of college or within one or two years. Now that's impossible, I mean more than

four or five years. Now, as you get older and older and older, you just don't, your priorities change. Many have families and all the rest and they're not going to go back and pull an all-nighter for your exam. They're just not. I mean that's not important for them. And add that to the whole thing about not grading or, you know, no grades, or recruiters do not ask about the grades because they just wanted the experience.

So then part of that, why did the schools go older? Because the older students got higher salaries and that was one of the inputs into the rankings. You see how these vicious circles begin in terms of what, oh, it's the law of, like unintended consequences. So you have older people, they get the higher salaries, so that's a positive for your ranking in whatever magazine you're doing. But do you know the consequences of that is that they're not going to work as hard as they once did.

Now, I'm talking about MBAs and certainly I'm just talking about a segment of MBAs, but I've talked to so many colleagues around the country that I know. Wharton undergraduates are still, I mean they have to work. They're in a dog-eat-dog, they work really hard, and I love teaching Honors classes for them. The PhDs, let me just tell you, the PhD level still, the level of research at the mostly American universities and certainly in the area of finance, it's still absolutely outstanding. And, you know, if you want to get to the absolute frontier and do research at the frontier, there, there's no problem.

CHAIR JOHN C. WILLIAMS: Well, with that, okay, we got the hands. Okay, so everybody's got their hands up. Let's start around the room here. We got microphones.

QUESTION: Dr. Siegel, I just have a quick question. Can you talk a little bit about maybe the stock versus the flow of M2 which is to say that M2 grew by 40% between 2020 and 2022...

JEREMY SIEGEL: Correct.

QUESTION: ...while the rate of growth has slowed meaningfully. Can you really use the current growth as a signal that inflation will slow...

JEREMY SIEGEL: So I did a trend line up until 2020 of the money supply growing and what it did do and then came down. And we're now 10% above on the trend line, and believe it or not, we're 10% on a price level above the trend line. Now, the price level is about 20% higher because we had four years of this...But it's really quite interesting that the excess money, you know, now the trend line, those two are very close right now. So it's worked off.

And that's why I wanted money not to keep on shrinking, and I'm trying to study the components a little bit better to understand that, because actually money market mutual

funds are going up. Deposits are beginning to go up again the last six or seven weeks. I'm looking into some of the components to sort of figure out why the money supply is really only 1% over the last 12 months while so many components have gone up. But basically the big picture is very quantity theory.

If you, do that, take the trend line, a big splurge, then it went down a little bit, and now that trend line, 10% above. Now do CPI. Trend line, 2.5% inflation for 30 years beforehand. Trend line, where are we now with the CPI? Ten percent above. I mean, so we get it.

QUESTION: Professor, it seems the role of the banks in the economy and in the capital markets has fallen over time and so much lending and capital markets activity is bypassing the banks. How does that work into the...

JEREMY SIEGEL: Yes, that's, is it the liquidity, and people still pay through accounts in banks. Lending isn't done as much in the banks since it's more independent. But then again, you know, people say, you know, we know bitcoin hasn't been used as a medium of exchange hardly at all in the United States and really in the world. But are there some substitutes that are coming in that would obviously reduce the importance of money? And I'm open to that.

Listen, we know that the velocity of money always depend on the interest rates, and interest rates have gone up and that's another thing that could have sped up the speculation of money. But I would just say that when, you know, when I looked at the explosion of money and then, I mean, you know, the explosion in prices and the long-term trend that I just quoted there, I'm still getting close enough that I think, you know, ignoring that liquidity that's provided in the markets.

Again, what I think the Fed should have done, what I think Jay Powell should have done, at the beginning increase that money. He should have gone, you know, to Biden, although it started with Trump. I mean the second Trump program was even more than we...alright, you passed it, you raised the money. You go to the bond market. We were seeing interest rates go up right away. Obviously, you know, $3 trillion, $4 trillion into the bond market rather than the Fed printing it up. And, you know, we would have had, I think...and why, don't forget, yes, other countries have had inflation, but I've looked at their M2s and those countries that controlled M2 really....China, like there was no bleeping M2, they had no inflation. Of course, they had a rather unusual, obviously, experience relative to Covid. But if you take a look at other countries in the world, it wasn't that far off. Those countries that controlled the M2 more had less inflation.

You take a look at the U.K., it was the only country, I think, that had more inflation than the U.S. And don't forget, Europe – we were basically self-sufficient in energy – they

had to import it all. So once the Ukrainian situation happened, they had a big burst of inflation, that sort of set those factors off.

But I'm open to that. And that's why I think we need to look at those components of M2 and talk about what's still relevant and what's not. It's not an all or nothing.

QUESTION: There's been a lot of acts out of Washington that potentially stimulate the economy, the Inflation Reduction Act, the Infrastructure Act, the CHIPS Act. Is that stimulus still out there and ahead of us or has that been spent? How do you think that may drive the economy and the markets?

JEREMY SIEGEL: And that's the, you mean the CHIPS...

CHAIR JOHN C. WILLIAMS: The fiscal stimulus, how much of that...

JEREMY SIEGEL: I think that, I mean the infrastructure is a long, drawn-out process that just sort of ramped up and it's going to be for many, many years. But I don't think that, I mean I know we have a deficit of, you know, $1.5 trillion. We haven't even talked about debt and all that. Although I think that the debt problem feeds the fear of inflation and makes people cautious on the bond side. So I mean that is relevant there, but I don't think there's going to be a fiscal crisis anytime soon. But I think that the fiscal

stimulus, yes, has, there is some from that, but I don't think it's anything that's unusual right now. I don't think that's really what's driving the economy.

QUESTION: Hi, professor. My question is about the shelter component of CPI. You've spoken a lot about how it's lagged compared to the data on the ground and that it was probably partially responsible for why the Fed was slow to act.

JEREMY SIEGEL: And I'm glad you brought that up because I'm going to bring that up to John...(Laughter)

CHAIR JOHN C. WILLIAMS: Did you finish your question...

QUESTION: Yes, so now you indicated that might have been part of why they were slow to act before, but now you've always said on the other side, at some point, I think in your words you said it will act like a sledgehammer on putting downward pressure on CPI at some point. So I'm wondering what your thoughts are.

JEREMY SIEGEL: I think one of the reasons they failed is that, I don't know, and again I wasn't in the discussion, why they failed to see the inflation was that they were using these terrible BLS measures of shelter, which are inexcusably bad in a situation where we had alternative measures that were showing so much more inflation. By the way, I'm

now Chief Economist at WisdomTree. They have a table here and they've helped me with a lot of the research that I've been doing later, that I've done since I retired from the university. So I want to give a little shout-out to them.

We have an alternative shelter measure that uses apartment lists, that uses Zillow, that uses CoreLogic and these others that show a much bigger rise at the beginning that would have pushed the CPI actually up over 10% and then a much faster fall that would have pushed it down and it seemed from, again news conferences that Powell had early on that this, don't forget shelter is 41%, am I right, John, of the core?

CHAIR JOHN C. WILLIAMS: Forty, yes.

JEREMY SIEGEL: Yes, I mean, that it didn't register as a big source. And I think that was another reason why they acted so slow was they were really underestimating the inflation that they needed on-the-ground, current measures. So there were the two failures. First of all, totally ignoring money, and the second was really using the most important single component, using a very lagged, you know, moving average of what was actually going on. Let me just mention, if you use a rental index that is an amalgam of the on-the-ground indexes and put that in, in place of the BLS index now, you get core year-over-year inflation under 2%.

CHAIR JOHN C. WILLIAMS: Okay, we are out of time now...As you said, inflation is under 2%, everything's good. No, but let me respond just very briefly. Barbara, we have another hour. You know, one thing is your point about looking at alternative measures, and the rental data, is absolutely right. I mean we are looking at these. We've been looking at these for some time. But, you know, understanding the data is something that you have to be able to do. We, at the Fed, have been looking for, like I said, at that kind of data. When you have extraordinary moves in inflation that we had, which was not the 1½ to 2½ that we saw for decades, but things are moving, you know, to 5%, 7%, obviously we have to get all of the information analysis that helps us understand those. You're right on that.

And the same with M2 and looking at a lot of other indicators, credit growth and things like that. So we're looking at all of those, we were looking at all of those. 2020, as you said, was a period of unprecedented uncertainty. You know, the pandemic, the waves of Covid, a lot of uncertainty about what was driving that, how long it would last, would the next wave of Covid hit the economy as hard. So there was definitely a lot to be learned from that experience. But I think that this point about the data and understanding the data is absolutely right. It's one of the reasons, you know, understanding the shelter component is also so important. But we are out of time. I really appreciate the conversation. It's been a great honor to host you today.

And my last role here is to just remind everybody of all the great speakers we have planned just in the next couple of months. On Thursday, we'll host FCC Chair Jessica Rosenworcel. On Thursday, April 11th, one of my colleagues, Susan Collins, President and CEO of the Boston Fed. And then on April 16th, we have the Governor of the Bank of France, Banque de France, Francois Villeroy de Galhau. Then on April 23rd, we have Jamie Dimon of JPMorgan Chase. And on April 30th, we have Jared Bernstein, Chair of the Council of Economic Advisers. And that's just April. Then looking into May, we've got Ed Yardeni on May 21st. And I, I will be speaking at a luncheon on May 30th. So I'm looking forward to that.

JEREMY SIEGEL: Is that a surprise, John?

CHAIR JOHN C. WILLIAMS: It's not a surprise to me. I definitely, I'm just surprised to read it. All events are currently listed on our website. Please be sure to review these dates and add them to your calendars.

Let me recognize the 373 members of the Centennial Society joining us today as their contributions continue to be the financial backbone of support for the Club. Thank you, everyone, for attending. We look forward to seeing you again soon. And for those of you in the room, please enjoy your lunch.