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Webinar

Moderator: R. Glenn Hubbard
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Finance and Economics
Columbia Business School

Introduction

President Barbara Van Allen

Good morning and welcome to the, actually, the 694th meeting of The Economic Club of New York. I'm Barbara Van Allen, President and CEO of the Club. It's an honor to be here with all of you in the early start of kicking off our '23 season of events. As many of you know, The Economic Club of New York is the nation's leading nonpartisan forum for discussions on economic, social and political issues. And we've had more than 1,000 prominent guest speakers appear before the Club over the last century and have established a pretty strong tradition of excellence. I'd like to extend a warm welcome to students joining us today from the CUNY Graduate Center, the Gabelli School of Business, Fordham University, and Mercy College.

I'm honored actually to welcome this morning, Bill Dudley, as our special guest, also a Club member and Former Chair of the Economic Club. Bill is the Senior Adviser at the Griswold Center for Economic Policy Studies. He served as the Inaugural Senior Research Scholar with the Griswold Center from 2019 to 2021 for a maximum three-year term. He's a member of the Group of 30 and the Council on Foreign Relations. He served as President and CEO of the Federal Reserve Bank of New York from 2009 to 2018 and as Vice Chairman of the Federal Open Market Committee.

Previously, he served as EVP of the Markets Group at the New York Fed, where he also managed the System Open Market Account for the FOMC. Prior to joining the bank in 2007, Bill was a Partner and Managing Director at Goldman Sachs and the firm's Chief U.S. Economist for a decade. There are many other things I could say about Bill but, suffice it to say, he has an amazing resume.

The format today will be a conversation. We're delighted to have another Club member and also former Economic Club Chair, R. Glenn Hubbard, joining us. Glenn is the Russell L. Carson Professor of Finance and Economics at Columbia University and previously served as the Dean of the Columbia University Graduate School of Business from 2004 to 2019. Glenn was also Chairman of the U.S. Council of Economic Advisers from 2001 to 2003. And, of course, as I mentioned, Chair of our Club.

In addition, let me just share we're going to use the chat box for the conversation. You can enter questions directly there for their consideration if time permits. As a reminder, this conversation is on the record. We do have plenty of media on the line. Glenn, if you're ready, I'm happy to pass the mike over to you.

Conversation with William C. Dudley

R. GLENN HUBBARD: I am. Thank you, Barbara. And thanks so much, Bill, for doing

this. Good afternoon and evening to you because I know you're overseas. Good morning to Club members. A lot of data out. Today is going to be Fed day. We've got JOLTS data. We've got ADP. We have people's speculations about what the Fed is going to do.

So I want to start with an elephant in the room, which is inflation, and the real economy. Increasingly, there are two narratives. One I would call Team Optimistic. Team Optimistic says inflation is just going to fall fairly quickly toward the Fed's 2% target, maybe even by mid-year or later this year. Labor hoarding by firms and still robust corporate margins are just going to give us a soft landing. The Fed will have room to move if anything deteriorates and risk assets don't really need to fear any kind of recession.

There's another view, Team Pessimistic says, okay, it's supply and demand, and maybe we get to 4% core inflation relatively easily with the easing of supply frictions. We're almost there. But getting inflation to 2% relatively quickly is much harder and would require demand destruction, recession, and risk-off in capital markets. So, Bill, which team is right? And what signals would we need to look at to know how we're doing?

WILLIAM C. DUDLEY: I'm more on the Team Pessimism side. Having said that, we could get to 2% inflation temporarily as the goods price inflation unwinds and turns into

deflation. If you look at the numbers we've gotten over the last few months, we've actually had goods prices falling and that could actually continue for a while. But just as you should have ignored the goods inflation on the way up caused by transitory factors, you should ignore the goods deflation on the way down caused by an unwinding of the same transitory factors.

I think Chair Powell has put his finger on the right issue, which is services inflation is still very high, and services inflation is primarily driven by the degree of tightness in the labor market and that degree of tightness in the labor market is what drives wage inflation. The problem we have right now is the labor market is too tight and wage inflation is too high to be consistent with 2% inflation on an ongoing basis. So the Federal Reserve has basically made it very clear. We need to make monetary policy tight for a sufficiently long period of time to drive up the unemployment rate by probably a percentage point or more. And only then will we have enough slack in the labor market to bring wages down to a sustainable level.

There's a lot of different ways you can look at inflation statistics, as you know. If you pick average hourly earnings, it's running a touch above 4. If you pick the employment cost index, it's running a touch above 5 for private sector wages and salaries. And if you look at the Atlanta Fed's Wage Tracker, it's running a little bit above 6. So 4 to 6. But whichever one you pick, it's not in the 3 to 4% range that's sort of consistent with 2%

inflation.

So Powell has made it very clear what he has to accomplish and so far they've done good in the sense that, you know, headline inflation is coming down. Goods inflation is coming down. There was something to the transitory story, but services inflation really hasn't budged at all and the labor market is still really tight. We saw that this morning. Job openings and labor turnover, everyone was expecting the ratio of unfilled jobs to unemployed workers to come down. Well, it hasn't come down. The most recent month, it rose from 1.7 last month to 1.9 to 1. There are 1.9 jobs for every unemployed worker.

That compares to back in February 2020, on the eve of the pandemic, where we were also at 3½% unemployment rate, the ratio was 1.2 to 1. And Chair Powell had suggested that we need a ratio of 1 to 1. So we're really pretty far away from the kind of labor market that's consistent with 2% inflation on a sustainable basis.

R. GLENN HUBBARD: Well, let me pull at that thread a bit if I might. So, as you know, the labor market is certainly still quite tight. Whether you believe economists' consensus for the payroll numbers, which is something like 190,000 or the ADP print, which is much less, and that's like 106,000. Both of those are well north of what Chair Powell was talking about. In terms of implications for the Fed, do you see that as continuing to hike longer? Do you see it as hiking maybe just a little bit more and then holding for an

extended period of time? Many market participants, I think, are looking for fairly fast rollbacks of Fed rate increases that wouldn't be consistent with the Team Pessimistic point of view.

WILLIAM C. DUDLEY: So, you know, obviously we're going to get a 25 basis point rate hike today. That's been very well telegraphed by many, many different Fed speakers. And I think it's highly likely that we'll get a 25 basis point hike in March. You know, May is probably up in the air depending on what the economic data looks like between now and then. But my own view is we're probably going to get a 25 basis point rate hike in May as well.

I think the Fed is probably going to go to what they said that they were going to do in the Summary of Economic Projections in December where they said we're going to go to 5 to 5 1/4. And I think they want to go that far because they want to actually make sure that monetary policy actually is restrictive. Now, having said that, their strategy is more on the side of longer than higher at that point. So once they get to a restrictive setting, then they basically have said that we plan to stay there as long as it takes to get inflation, to make us confident that we're going to get inflation back down to 2%.

What was interesting about the last press conference, when the Chairman was talking about the Summary of Economic Projections, he said that not one FOMC participant

expected the Fed to cut rates in 2023. So now only was there quite a bit of consensus of where rates had to go, 5 to 5 1/4, nobody was penciling in rate cuts at the Fed, even though markets are anticipating rate cuts in the second half of 2023.

R. GLENN HUBBARD: So if you think about markets, the equity market is still pricing a scenario that's somewhat different than the one we've been talking about. And the bond market to be consistent with observed yields must think either that the Fed will cut then quite a bit thereafter or that there's a recession or some sort of fall in economic activity. How should we make sense of what the bond market and the stock market are telling us given the outlook for the Fed that you see?

WILLIAM C. DUDLEY: Well, I think both the bond market and the stock market are looking past the Fed tightening to the easing beyond, so like the promised land. And they know it's coming at some point. After a period of time, and you can speculate how long that's going to be, eventually the economy will slow, the labor market will get more slack, and inflation will come down to 2%.

And at that point, the Federal Reserve will be able to ease monetary policy. And because the economy is fundamentally not in bad shape, I mean household balance sheets and business balance sheets, unlike 2006, 2007, the economy will come bouncing back. And this is not a situation where the Federal Reserve doesn't have

enough fire power to generate a strong rebound from a recession. So I think the markets are, in a sense, comfortable that even if we have a recession, it'll be very mild and the Federal Reserve can respond pretty quickly to sort of cut that off. And I think that's probably right. I mean I think that's probably right.

The Fed's problem right now is that the markets are making the Fed's job more difficult. Chair Powell has been very clear that monetary policy works through financial conditions, and I'm very gratified to hear a Fed Chairman use that as their framework. Jan Hatzius and me at Goldman Sachs a few years ago talked about the importance of financial conditions as the mechanism by which monetary policy affects economic activity. It's not something that the Fed Reserve has taken onboard until very recently. But Chair Powell is a big believer of this.

And what we've seen over the last few months since financial conditions have actually eased, the stock market's up, bond yields are down, the dollar has weakened, so this just to be reinforces the pressure on the Fed to keep going. And then once they get to 5 to 5 1/4, to keep rates there for quite some period of time. So I think people are just too optimistic about how easy this is all going to be. No progress yet on the labor market. I mean, let's say we get 100,000 payroll employment rate gain, let's say it was very weak. Well, 100,000 is just enough to keep the unemployment rate steady.

For the Fed to actually push the unemployment rate up, they need to see zero gains or negative gains in payroll employment, so 100,000 is not good enough. They need to see something quite a bit weaker than that for the Fed to be successful in generating some slack in the labor market. That's really where the debate it. Some people say we need slack in the labor market and some people say this can happen sort of immaculately. I don't know the theory about how you bring inflation down without slack in the labor market so I'm not a firm believer of the very benign way of this playing out frankly.

R. GLENN HUBBARD: Let me ask one more question in this area before leaving it, which is going back to Milton Friedman's observation about long and variable lags in monetary policy, how should we think about the effects of policy that the Fed has already done and has announced that it will be doing imminently? Is there an argument to be made, going back to the Team Optimistic point of view, that there's enough in the pipeline and that the Fed should be a little more cautious? How do you weigh those Friedman factors? Are lags different today in monetary policy than when Friedman gave his famous admonition?

WILLIAM C. DUDLEY: Well, certainly that's something that the Fed officials are definitely thinking about. And Governor Brainard, in particular, has talked about her view that there's still a lot more restraint to come based on what the Federal Reserve has

done and the lags for it to take its full effect. My own personal view, though, is I think the lags in monetary policy, while they are long, are not as long as they used to be.

And the reason why they're not as long as they used to be is the Fed Reserve now foreshadows what they expect future policy to be. They share the market, with the market, their economic forecasts. They share with the market their reaction function. And so the markets can price in what the Fed is likely to do in the future before the Federal Reserve actually does it. So this last six months is a good example. The Fed has not finished tightening monetary policy but bond yields peaked a number of months ago because the bond market is already anticipating the valley beyond, when the Fed is actually going to ease again. And so this is just an example of how monetary policy lags may not be as long as they were previously.

And where this really has served, interestingly right now, is in the housing sector. It's certainly true that multi-family housing starts have a long way to continue to go down. That's where the lags are the longest. But in the single-family housing area, it looks like most of that adjustment has already happened. And the fact that mortgage rates have dropped, it's probably going to start to stimulate home buying again, and that's going to stimulate construction activity in the single-family sector. So I think the housing sector is sort of a good place to watch. That's sort of the canary in the coal mine. That's where monetary policy has its greatest bite. And so I would keep my eye on what's happening

in housing to get a sense of whether the Fed still has more consequence from their tightening moves or whether the tightening of financial conditions we had in 2022 is starting to fade away.

R. GLENN HUBBARD: With all that in mind, what do you think might cause, if we were unlucky enough to get one, a deeper recession than people are talking about? People are either talking about a soft landing or let's say a mild recession a la early 2000s, before the Global Financial Crisis. Would it be a policy error? Would it be a mechanism inside the economy? What might lead to a bigger recession were we to get one?

WILLIAM C. DUDLEY: Yes, I mean, I think the likelihood of that is relatively low. I don't see the kind of things like we had in 2007, 2008, where the financial system really starts to break – outside of crypto of course, where obviously a lot of things have broken already. But, you know, if you think about why we had such a deep recession in 2008, it's because the financial system ceased to function in being able to move money between savers and borrowers and we had a huge collapse in home prices with people who were overextended in terms of their mortgage debt. We don't have that this time.

So I think that, you know, the financial element of a recession is probably going to be pretty mild. I mean, could you have a more severe recession? Sure. And I know we'll get to this in a minute, you know, if the debt limit controversy had a really hard landing

and you really surprised the markets and you didn't raise the debt limit in a timely way, and the government was starting to prioritize payments and that led to a lot of turmoil in the financial markets, yes, we could have a more severe recession. But generally, I feel like this is going to be a garden variety recession unless there's some sort of unanticipated shock to the economy not caused by the Fed.

The Fed is definitely being very careful here. I mean Chair Powell talks a lot about not wanting to be like Arthur Burns, so he doesn't have to be like Paul Volcker. But, you know, he's not being that aggressive frankly. We talked before, just a little bit before we got on the air here, that, you know, going to 5 to 5 1/4% federal funds rate in a world where inflation is well above 2% is not a particularly aggressive policy. The reason why the Fed is doing this is because they're trying to maximize their chances of both getting inflation back down to 2% and not having a hard landing. So they're trying to have their cake and eat it too.

But this is not a Volcker policy. A Volcker policy is you just keep going until you see the recession and then you hold rates high even during the recession until you squeeze the inflation out of the economy. So I don't think this is really a Volcker Fed. This is something a little bit, you know, it's a little bit different than Burns because Burns relented too soon. And what Powell is basically telling you is I'm going to avoid the Burns mistake so I'm not going to relent early. I'm going to make sure that I succeed in

getting inflation down to 2%. That's where he's determined not to make the Burnsian mistake.

R. GLENN HUBBARD: Of course, that still requires getting the right level of rates to start with. If you hold it for a long time, but it's still too low, you're still in trouble. I did want to, we're going to come to crypto – it's just too tempting – and the debt ceiling. They're both Saturday Night Live-ish almost, not just economists. But I do want to ask, on the Fed, do you think the Fed cares about – for lack of a better term – collateral damage in monetary policy meaning if we have a tightening episode as we are here in the United States, given the role of the dollar in the international financial system, particularly for many emerging economies, a) is there a problem there? b) how big is it? And, c) should the Fed care?  Or does it care?

WILLIAM C. DUDLEY: Well, I think there's definitely consequences of the Fed tightening for the rest of the world. And I think it plays out more severely in terms of emerging markets that have a lot of dollar-denominated debt. What typically happens when the Fed tightens is the dollar appreciates against foreign currencies. Capital that had been going into emerging markets starts reversing and comes back to the U.S. and that puts a lot of stress on poorer countries. And I think that's going to happen this time, and it is happening this time already. So I think we're going to have a very severe set of circumstances in the poorest countries of the world.

Now, does the Fed care about this? Yes, in the sense that they wish it wasn't so. They sort of feel these countries' pain. But at the end of the day, this is sort of collateral damage. The Fed's mandate from Congress is to achieve price stability and full employment in the United States. There's nothing about worrying about consequences for the rest of the world.

Obviously, the Fed takes on the consequences of their actions that happen in the rest of the world, and what happens in the rest of the world affects the U.S. economic outlook. But the Fed only cares about what happens in the rest of the world to the extent that it affects the U.S. economic outlook. So at the end of the day, it's sort of like, really sorry that we're doing this to you, but we have to do this to get inflation back down to 2%.

R. GLENN HUBBARD: Okay, probably not so reassuring to the emerging world.

WILLIAM C. DUDLEY: No, not.

R. GLENN HUBBARD: It's certainly the accurate answer. So let me go from the sublime of the Fed to the ridiculous of the debt ceiling. And you were alluding earlier to the potential problem. Typically the way the debt ceiling is done is almost like a very familiar Kabuki play where we know the ending and we know that we resolve 11:55, 11:58, maybe even 11:59, but certainly before the clock strikes midnight. And so the Kabuki

plays out and typically the fight is over policy. Let's say one party would like to spend less, another party would like to spend a little bit more, and there's a give and a take.

As you know, the negotiation looks a little different this time. I hate to say things like this time is different, but it doesn't seem like there's a clear delineation on policy grounds, like I need you to do X. It's more a general fight over where we are now. So walk us through how this might play out? You know, the Treasury has argued it knows how to do this in terms of prioritizing payments that may not even be necessary. Walk us through how big of a problem this could be if we get between 11:59 and 12:00 and maybe even strike 12:00.

WILLIAM C. DUDLEY: Well, the closer we get to midnight, the more financial markets will be under duress. And we saw that in 2011 when people started to shun Treasury securities that were going to mature right at the period of time when the debt limit might actually be completely binding. So that will certainly happen. People will start to get more nervous. But as you said, they'd never get that nervous because they assume that in the end, rationality will prevail and the debt limit will finally be raised without prioritization, without a default on the Treasury's obligations.

I agree with you. I think this time seems more scary to me. For one reason, it doesn't look like the House Speaker, Kevin McCarthy, has control of his caucus, and it also

looks like there's a number of people in that caucus who are willing to take it all the way to the wall. And he only has a very slim majority, and so if he can't bring pretty much everybody along, it might be hard to raise the debt limit in a timely way. And, you know, obviously, he could broker a deal with the Democrats, but if he were to do that, would he still be Speaker of the House? The House Republicans might say, well, if you're going to do a deal with the Democrats, we don't want you to be Speaker of the House. So the politics within the House itself seem particularly difficult and that makes me more nervous than normal.

So probably most likely what happens is we avert it at the end, at 11:59. But let's just imagine that we don't. What happens then? Well, first of all, it would be a huge shock for financial markets because everybody would be expecting that at 11:59, that disaster is averted like it has every time in the past. So if disaster is not averted, it's a huge shock to financial markets because people are not expecting it.

Number two, what's going to happen is there's going to be a lot of financial market turmoil. You made the analogy that it might be like the first time that TARP legislation went up to Congress and Congress voted it down and the stock market didn't like that, and it didn't like it in a very big way. And I think that's sort of what would happen this time is the financial markets would freak out. Second thing that will happen is the government will have to start to decide what payments are we going to make and what

payments are we not going to make, and that's called the prioritization process.

Janet Yellen has said that the Treasury doesn't have the ability to prioritize. I don't think that's really quite accurate. I think it's hard for the Treasury to prioritize because they don't control all the payment flows. But if you go back and look at the transcripts at the Fed in 2011, clearly the game plan, the backup plan was to prioritize payments in a way where you didn't default on the government debt. So you delayed other payments, you know, payments to individuals, payments to defense contractors, but you made sure that you kept the payments on the Treasury's obligations current because...

R. GLENN HUBBARD: But just to interrupt on that, if I might, you say that that's just a gentlemanly way of saying introduce a fiscal contraction, isn't it?

WILLIAM C. DUDLEY: Oh, absolutely. I was going to get to that. So at that point in time where you start to prioritize payments, the Treasury only has enough money to pay probably something like 75, 80% of its obligations. So the government spending is a little bit over 20% of GDP and they're running a deficit this year of roughly 4 to 5% of GDP. And so that gap goes away instantaneously and so all of a sudden you're having a contraction of fiscal policy of 4 to 5% of GDP instantaneously. And so that's going to have also a pretty severe consequence for the economy.

So market turbulence, fiscal contraction, it would be a mess. And to what end? I mean it's like what benefit are you getting on the other side? I mean, you know, I could see the debt limit as an instrument of policy if you could point to a track record of how the debt limit has helped us constrain spending and get us to raise more tax revenue. But the history, as you know, is the debt limit has, you know, the debt limit is after the fact. You've already agreed on the spending. You've already agreed on tax policy. It's a little late in the game then to say, well, we're just not going to pay our obligations.

R. GLENN HUBBARD: Yes, it's a real problem. I mean if there's a deal to be had, it's probably on some serious discussion on discretionary spending which has boomed a lot in recent years. And then even though entitlements are a bit of a third rail, maybe at least some sort of committee or commission to look at the trust funds and what they mean and don't mean since they'll be running out of money. So there's probably a deal to be had. The question is whether either side wants it. You know, you talk about fiscal contraction and the Treasury, but what about the Fed? So as the Fed watches this play, and the Kabuki goes off the rails, to mix the metaphors, as we strike midnight, what does the Fed do about it?

WILLIAM C. DUDLEY: So the Fed is going to try to stay out of the middle of the politics. So the Fed is going to try to keep as low of a profile as they can. But what are they going to do? They're going to try to ensure the market function of Treasuries remains

intact. So, you know, they've basically said in the past that if there were to default in Treasury securities, we would take them in our, you know, borrowing operations. We would lend against them. We would do repo against them. So we're not going to treat defaulted Treasury securities differently than non-defaulted Treasuries except that we're going to operate with defaulted Treasury securities and market prices. That's the only concession the Fed's going to make.

The Fed has said that they would consider coming to the aid of Treasury money market funds if they got into difficulty. You know if the Fed thought that the market function of the Treasury market was really severely distorted, the Fed could come in and buy Treasuries in the secondary market. But one thing the Fed can't do is they can't buy from Treasury directly, from the U.S. Treasury because they're not allowed to buy in the primary Treasury market.

So, you know, the Fed would do what they can to try to limit the second round and third round effects of this catastrophe, but the idea that the Fed could make it all right, no, there's no way. It would just be really bad as opposed to really, really, really bad without the Fed intervening.

R. GLENN HUBBARD: Just one more thing on this, so let's just suppose we do strike midnight and we have a short-term brouhaha a la the TARP or something else, are

there any longer term consequences? So let's suppose we right the ship the next week, is there any ding either to the dollar as a reserve currency, the credit standing of the country? Is there anything beyond that period of pain?

WILLIAM C. DUDLEY: Well, I would think absolutely. I mean if you've actually not made your payments in a timely way, you've defaulted on your debt. And it's going to be very interesting to see how this played out. I mean I'd be very interested in what kind of contracts are out there that get triggered by default on U.S. government debt. I don't know if there are contracts like that. But you can certainly imagine that there are things that, all of a sudden things get triggered that we aren't really fully aware of by a default on the debt.

I think the credit rating of the U.S. government would decline. I think the dollar as a reserve currency would become less attractive. I mean the dollar as a reserve currency, you know, you really have to mess it up for the dollar not to be the reserve currency because, you know, what are the alternatives at this point? But, yes, it would definitely hasten the movement out of the dollar for sure. And I think that's really why the prioritization would be geared to not defaulting on the Treasury debt because I think the Treasury and the administration would understand that defaulting on the debt would have long-term consequences, much longer term than just delaying payments to defense contractors or to American taxpayers. That's painful.

You know, we've had that before. We've had government shutdowns where payments have been delayed. But a government shutdown where payments are delayed is very different than a default on the Treasury's obligations.

R. GLENN HUBBARD: So my next payment from my National Science Foundation grant is at risk, you're saying?

WILLIAM C. DUDLEY: That one could be deferred.

R. GLENN HUBBARD: All right, okay. Science may suffer but hopefully not much. I want to take us to crypto if I might. So, you know, crypto is either, if you're an optimist, you know, it's a BFD, or it's an SBF. If you're not an optimist...you've written on crypto recently and have some thoughts. What's valuable here? I always thought that when people throw these words out, you're mixing and matching things that are really quite interesting like distributive ledgers and ways we make payments with particular kinds of assets that may be a little less so. How do you think about which pieces of this are worth a lot of our time? Which are worth less of our time? And then I want to come to policy. Let's start with the basics.

WILLIAM C. DUDLEY: So I think you hit the nail on the head. I mean I think the distributive ledger technology, blockchain technology has a lot of promise in a number

of potential user cases. Digital identity is one. Cross-border payments is another. Tokenization, where you can basically have, prove that you actually own your house without actually having to go to a title insurer is another example where you could probably make a lot of progress using blockchain technology.

Blockchain technology is a way of also making securities settlement and clearing and settlement much more efficient. We're in the early days of the technology and innovation and I think some people are more skeptical saying, well, where are the innovations? But the reality is, you know, you look at electricity generation, it took a couple of decades for that to actually lead to reorganization and manufacturing and the River Rouge plant in Detroit and Ford Motor moving to Model T production.

So the fact that it takes a while for the technology to change the way we do business and how we organize ourselves, that should not cause one to be pessimistic about the outlook for the technology. So I think the technology, I think we want to explore what the technology could be used for, can it actually make the U.S. financial system and the global financial system, for that matter, much more efficient than what we have today. So that's where I think there's a lot of promise.

Where I think there's a lot less promise is on the speculation in tokens issued by crypto exchanges. These tokens basically work on the basis that if I issue you a token, you can

use the token and you would get a discount in the services that my exchange is offering. If you like to use my exchange, then you saw value in the token. And as my exchange is ramping up its activity, these tokens become more valuable and that creates more willingness for people to participate in this speculative activity.

But at the end of the day, these tokens are not worth that much. I mean it's like getting a discount coupon to buy something. And once the air comes out of the balloon, you know, people find that the tokens are really actually not worth much at all, that's when the whole thing comes crashing to the Dow. We saw that last year with, first Terra Luna, that stablecoin pair. And then obviously with FTX's implosion. So I think that, you know, the crypto currency speculative activity where people are trying to get rich, you know, through speculating on crypto assets, that's where I'm a lot more skeptical.

R. GLENN HUBBARD: Let's talk about regulation here because that's a role you've played in your service at the Fed. Is there anything we need to do here? I mean one view, building on what you just said, is if people were speculating mindlessly in something that's like a casino token, that's going to be a problem. Another view is, no, these things are quasi-securities and there's a role for regulation. How do you think about regulation here? And is this the SEC's job? Is it somebody else's job?

WILLIAM C. DUDLEY: Yes, I mean there is a, some people argue, though, let's just let

the whole thing burn to the ground. Let's not regulate it because if we regulate it we're actually providing some sort of implicit endorsement of this activity. My problem with that is that the government protects people against doing a lot of stupid things. I mean, you know, we basically regulate prescription drugs to make sure they're efficacious and they have the effects that people claim they have. We make sure that the roads are well-paved and well-lit. We make sure that cars are built so they can operate safely. So I think that there's a lot of precedent for people, for the government taking steps to protect people from themselves. And I don't see any reason why crypto is any different in that regard.

So, to me, you know, regulation to ensure market integrity, to ensure investor protection, to ensure that stablecoins are backed 100% by safe assets, I mean I think it's pretty amazing now that we still don't have a regime in place that forces stablecoins to reveal exactly what backstops their stablecoins. I mean one of the leading stablecoins is Tether and they claim that they have reserves that back their stablecoin, but, you know, they're not that forthcoming about showing us exactly where they are and what they are on a timely basis. So I'd like to see that kind of regulation.

The other thing I think we need to do is I think the regulators need to be a little bit more proactive in thinking about how can we actually maximize the potential of this technology? So, you know, what kind of regulations can we put in place that will achieve

the same outcomes we want for this technology but don't strangle it? So you don't want to just take the old regulations that fit in traditional finance and apply it to decentralized finance because those regulations may not be workable in this new world. You want to find regulations that actually achieve the same outcomes but they need to be adjusted for the fact that the structure of this industry is very, very different.

So I'd like to see the regulators be much more proactive with the industry and sort of say this is what we want to achieve. We want to achieve market integrity, investor protection, a whole number of other goals. And sort of say this is what we want to do, how can we best accomplish this? What are the ways to achieve those outcomes? Engage with the industry and then make the industry sort of put up or shut up. If the industry is not willing to engage with the regulators in a constructive way, then I think you don't provide that support. But I don't think the regulators have really engaged. I mean if you look at the SEC's view, they tend to engage in enforcement actions when people have done bad things after the fact as opposed to giving guidance to the industry, like what is actually, what does good look like? What do you need to do to stay on the right side of us? I think that would be much more constructive.

R. GLENN HUBBARD: Yes, certainly when you mention market integrity, investor protection, that sounds like the SEC. But I want to take you to the Fed here too. Should the Fed be part of this party? Do we need a central bank digital currency? What do you

see as pluses and minuses for the U.S. Fed doing as, for example, China is doing?

WILLIAM C. DUDLEY: Well, I think we're going to have a central bank digital currency because, I mean, in some ways what is it? It's just another representation of cash in an electronic form rather than a paper form. That's really all that we're talking about. I mean there's a few details that are important, though, in terms of a digital currency. One of the most important details is that cash, holding large amounts of cash is risky. Holding large amounts of digital currency at the central bank presumably is not risky. And so one thing we have to think about when we structure a central bank digital currency is how do you limit the ability of people to rush into the central bank digital currency during times of crisis? You don't want to have a safe asset that's so attractive that everybody leaves every other asset and runs to the Fed. That would be very contractionary to monetary policy and to economic activity.

And so I think what's going to happen is I think eventually in the fullness of time, and I think this is going to take a long time – the Fed is going to be a slow follower, not a leader on this – is eventually they're going to issue a central bank digital currency. It's going to be wholesale rather than retail. They're not going to offer it directly to customers. They're going to offer it to the banks. The banks are going to offer it on to their customers. And it's going to be limited in size. You're going to be able to have a cryptocurrency account of $10,000 or $20,000, but that's it. And that's just going to be a

more convenient way for you to hold cash if that's how you want to hold your cash, rather than in your pocket.

I mean I think in some ways this is all overrated a little bit. I mean, you know, we do a lot of digital finance every day. When you take out a credit card and you give it to the retailer, that's digital finance in a different form. Now, it's not a very efficient form of digital finance because of the merchant interchange fees for retail, which are quite high, you know, 2 to 2½%. So you can certainly imagine a way of doing this a lot more efficiently than we do it today. But it's not like we're not doing it digitally already.

R. GLENN HUBBARD: Well, two things that come out of what you were saying. One, when you were talking about the risk of cash, it is true that if I have cash in my pocket, I might get robbed on my way home from Columbia today. But, on the other hand, if I have it at the Fed, couldn't they give me a negative interest rate that isn't possible on the cash in my pocket?

WILLIAM C. DUDLEY: There are some people that have written about this, as you know, that they think that it would be great if everybody only, didn't have cash at all and just had digital currency because then the Fed could say, well, we're no longer paying you zero on your digital currency, we're actually going to take away 1% of your digital currency every year and that will allow us to move to negative interest rates and keep

monetary policy even more accommodative.

I personally feel like politically that's not a very attractive mechanism. I think people, you know, if you go to the average voter, I think they would view that as you're confiscating my money as opposed to you're making monetary policy easier. So I think that, you know, it's attractive in the academic halls, but I don't think it's really attractive politically. So I don't think it really flies as a policy in my own opinion.

WILLIAM C. DUDLEY: And when you were mentioning private sector alternatives too, like interchanging credit card transactions, how do you think this discussion plays out between what the Fed does and what reaction from banks and other financial players are who are presently in the money-movement business?

WILLIAM C. DUDLEY: Well, I think as long as the Fed is operating as a wholesale provider, they're not really going to be affecting what banks do to a great degree. I mean banks will still own the customer relationship so the banks will get money, digital currency, from the Fed and then they'll just pass it along to their customers. Not that different than today when they get reserves from the Fed and then they can lend out those reserves in terms of making bank loans.

So I think the Fed is going to be very careful not to disintermediate the financial system.

They don't want to have 150 million accounts with customers. They don't know how to do that. I mean during the financial crisis, during the Covid pandemic, when the Fed was standing up all these facilities, the question always was how do you bootstrap this in a way that allows us to use other entities to get out the money to a broad cross-section of the public because we don't have those connections. And so that's why the Fed uses the banking system as a conduit when they do these kinds of interventions.

R. GLENN HUBBARD: I want to go back to the Fed but with a set of questions about Fed thinking and how we got to where we are. The Fed is, of course, widely viewed as having misjudged the inflationary potential of fiscal policy and other actions during the pandemic. Do you think the problem was about models? Do you think the problem was about misunderstanding the shocks? Or was it mistakes in action or something else?

WILLIAM C. DUDLEY: So I think the mistake came down to a number of different things. The first thing was how the Fed operationalized their 2% average inflation target regime. Remember, the Fed switched from trying to hit 2% inflation always, so if you missed to the downside you just tried to go back to 2%, to moving to a 2% average inflation, so if you missed to the downside, then you tried to miss to the upside to offset that.

And the motivation behind a 2% average inflation target regime is that will keep inflation

expectations better anchored at 2%. The Fed was worried about a Japanese-style situation where if you keep missing inflation to the downside, inflation expectations start to fall, that makes monetary policy tighter and it gives you less room to stimulate the economy if you fall into a recession. So I think that's where it made perfect sense. The problem is how they operationalized it. They basically said we're not going to lift off. We're not going to raise rates from zero until we're at full employment, we're at 2% inflation, and we're confident that inflation is going to be above 2% for some time in the future.

So that means when monetary policy needs to be at least neutral, probably tight, the Fed is sitting at zero. Then they compounded that by basically saying we're going to continue to buy assets until we've made substantial progress to this goal. Then they said, well, we can't actually raise rates until we stop purchasing assets, and we can't just stop purchasing assets, we have to taper the asset purchases. So all of these things stretched out the timing of when the Federal Reserve could actually lift off.

I mean it's pretty remarkable. I mean, I think, you know, historians when they look back at the Fed are going to be quite amazed that the Federal Reserve had zero percent interest rates in March of 2022 and were still purchasing assets, early March 2022, when the inflation rate was running at 7 or 8% and the economy was clearly overheating. So that was the first big mistake. If the Fed had removed all these

impediments and tried to get monetary policy to neutral sort of in a timely way, they could have started the monetary policy tightening probably in the summer of '21, when it became clear that the vaccines were going to work, the economy was going to reopen, the danger period was over, and so now we can start to move back towards a more normal monetary policy. So they could have started, you know, six to nine months earlier. So that was mistake number one.

Mistake number two is they made some bad economic forecasts. The first bad economic forecast is they decided that the inflation shock that we've had was transitory. You can see this very clearly in Chair Powell's speech at Jackson Hole in August 2021. That's what the speech was about. All the reasons why the inflation that we're seeing is transitory caused by a shift in demand during the pandemic, away from services to goods, because people didn't feel comfortable going out from their homes. And the Fed's view was, okay, once the pandemic eases, people will shift demand back to services away from goods, all that pressure on goods prices will abate and we'll be back at 2% inflation. It turned out that the inflation pressure was bigger, broader, and more persistent. That was problem number two.

Problem number three was the Fed thought there was more slack in the labor market. If you go back and listen to Chair Powell through 2021, he was always talking about the shortfall of employment relative to where we were in February 2020. Four million jobs

short, then three million jobs short, and so the notion was that there was a long way to go before the labor market would run out of capacity. The Federal Reserve had thought that the labor force participation rate would come bouncing back once the labor market, once the economy reopened, and that just didn't happen.

The labor force participation rate for prime-aged workers came back, but retirees, older workers, they left the labor force. We also had a lack of immigration during the pandemic. And we had long Covid, a lot of workers are still sick and they're not able to work, and so the consequence is that the labor market has gotten much tighter than what the Federal Reserve ever anticipated. We talked earlier about the Job Openings and Labor Turnover Report, you know, the ratio right now is 1.9 to 1. The Fed wants it at 1 to 1. So that gives you a sense of how big the error was in terms of the Fed's forecast about the labor market.

So the Fed was late and that's what this last year has been all about. It's all been about the Fed catching up. When a central bank is raising rates 75 basis points a meeting for several meetings in a row, you know they've made a mistake. This is an admission that we're late. And the good news is they mostly got away with it. At the end of the day, despite being very late, inflation expectations generally stayed well-anchored, and so the consequences of their policy turned out to be relatively mild. So I mean essentially what happened is 20 good years of performance on inflation bought them 18 months of

bad performance on inflation to catch up. And so where they are today is in a much better place. Still, I think there's a little bit more work to do. We talked about that earlier, but they dodged a bullet. It could have been a lot worse.

R. GLENN HUBBARD: Well, another dog that did bark that you didn't talk about too much was fiscal policy during the pandemic, which was, at least in my judgment, excessively stimulative given where we were on the supply side of the economy. Did the Fed miss how accommodative that was? Or do you see this as almost a political economy battle of trying to lean against what the government wanted to do?

WILLIAM C. DUDLEY: I think you're right. I mean you asked me earlier about what did the Fed do wrong? So now let's spin the question to what did the government do wrong? I think the government was probably a bit too aggressive in terms of fiscal policy. I had no problem with the government coming to the support of the economy in the middle of the pandemic. It made perfect sense. You don't want destroy businesses and you don't want households to really suffer from a pandemic that's not their fault. But the money went out and it went out pretty indiscriminately. I mean, you know, sending checks to all households regardless of whether people are employed or not seemed a little bit excessive to me. It seemed to me like you could be a lot more discriminating in terms of who needs the support.

You know, at the end of the day, it was a $5 trillion fiscal transfer into households and businesses. And, you know, in the household sector, about a third of it was spent, about a third of it was saved, and about a third of it was used to pay down debt. And so I think another aspect of this whole story was households and businesses were in really good financial shape at very late stage of the business cycle. You know, people like to think, well, okay, we had the pandemic so it's a new business cycle, we're starting out anew. But we really were actually at a late stage of the business cycle and it just was interrupted by the pandemic.

And so usually when you're at the late stage of the business cycle, people are pretty exhausted. They've already done a lot of spending. They have a lot of debt. Not the case this time. And so the health of the household sector and the business sector, I think, was another factor pushing the economy along. I mean economists are still looking at like how much extra savings has still been accumulated by these fiscal transfers, and the numbers I see, they suggest there's still a trillion dollars or more of balance sheet room for households to continue to spend based on these fiscal transfers. So that was obviously also a factor.

But the Federal Reserve needs to take that onboard. I mean, you know, the Federal Reserve can desire a given fiscal policy that makes their monetary policy easier to carry out, but the Federal Reserve, as you and I both know, they have to take the world as it

is, not the world that they want. And so it's still the Fed's fault. I mean that Fed should have, you know, calibrated monetary policy in light of that fiscal regime.

R. GLENN HUBBARD: Okay, I want to take, since we've talked about the models and misunderstanding or mistakes, I want to go literally into the room where it happens, because you've spent many years there on the FOMC. Do you think the FOMC has the right diversity of thought from the men and women around the table to guide policymaking? There's at least one criticism of the Fed in some mistake periods is that group-think sets in or a particular point of view. Do you think the Fed has the right diversity of thought around the table? And if you don't, how can we do better? How could we strengthen that diversity of thought?

WILLIAM C. DUDLEY: Well, I don't have any particular problems with the current setup of the Fed in terms of the current FOMC diversity. I mean I think there's quite a bit of diversity on the Fed currently. But to your point, I think diversity is a good thing. I think where there can be a group-think is really in terms of academic orthodoxy, like how does the economy work? How does monetary policy affect the economy? The Fed staff is very powerful at the Board of Governors, and they all come from the same ten or twenty leading economic institutions, of which Columbia is one. And, you know, I think that academic orthodoxy at times can lead to group-think.

I mean a good example is the Great Financial Crisis. If you look at macro models that were developed prior to the Great Financial Crisis, there basically wasn't much role for the financial sector. The whole idea that the financial sector could come crashing down and that lead to a devastating recession, near depression, wasn't really even in the cards. It wasn't conceived. So that's an example of, you know, where the economics profession didn't have a broad enough view of the importance of financial stability to ensure a well-functioning economy.

So my personal view is I take the tenor of your question very seriously. I do think you want diversity. I think you don't want to have all PhD economists from the Top 20 schools. I think you want to have people with markets experience. I think you want to have people with business experience. I think you want to have people that think broadly. I mean one of the challenges from the Fed, based on my own experience, is you have a lot of expertise but they're expertise in narrow verticals. So you have the person who is the expert about consumer prices and the person that's the expert on wages and salaries. That's great. But at the end of the day, the true wisdom comes from putting it all together and thinking like how does this all fit together? And what are the beliefs that people widely hold that might turn out to be incorrect?

When you look back at the Great Financial Crisis, what went wrong? Well, what went wrong was, there were a lot of belief systems that turned out to be false. Sub-prime

mortgage lending is safe. Triple A CDOs are safe. National housing prices can never decline. So strong belief systems that turn out to be wrong can result in devastating consequences.

And so I think, you know, diversity can help you, help with the challenge function. You know, basically challenge the Fed and the staff to say, well, what about this? But it's hard, it's hard. Based on my own experience, back in 2007 when I was the __ Manager, you know, I raised some of the issues about sub-prime mortgage lending. I painted some scenarios about why this could go very badly. And the answer was usually, well, how do you know? How can you prove it? It's not in the model. And so there tends to be sort of a skepticism until the event actually arises.

I think one of the problems for any official institution is there's a bias of committing errors of omission as opposed to errors of commission. So you tend to convince yourself, well, we don't really know for sure so we shouldn't do anything proactively. We should wait to see what happens. We'll get more information. And so you don't do anything proactively. And so you're committing an error of omission as opposed to the error of commission where you take a chance. And you say, look, I think there's a problem here, we need to do something about housing. Ned Gramlich went to Alan Greenspan several years before the Great Financial Crisis and said, look, I think we've got a problem in the mortgage market that we need to address, and he didn't make

much headway.

So, I think, you know, being more proactive earlier, I think can help. I think one of the things I think the Great Financial Crisis showed us in spades was that Alan Greenspan's view that you can't identify bubbles in real time, you can only clean them up after the fact, is not necessarily a good economic policy. Because if the bubble is big enough and the breakage of the bubble is damaging enough, cleaning it up after the fact is not a very good strategy.

R. GLENN HUBBARD: Okay, good. It does sound like the Fed does have some work to do. As you say, it's the usual suspects, the Fed is the largest employer of economists, I think, in the world. It could change things if it wished to.

WILLIAM C. DUDLEY: I mean I'm not against economists obviously. I have a PhD in economics.

R. GLENN HUBBARD: Some of my best friends are economists.

WILLIAM C. DUDLEY: Exactly, exactly. But you want to have different points of view and to make sure that those different points of view are reflected and fully considered. You know, not dismissed as like how can you prove that? You know, really examine it a

little more deeply.

R. GLENN HUBBARD: One more question about financial markets. You've mentioned before we're in much better shape than we were. We obviously are in terms of financial institutions, the Global Financial Crisis versus today. That said, in late '19 and certainly early on in the pandemic, we had turmoil even in the Treasury market itself that caused the Fed, in March of 2020, to intervene on a scale greater than it did during the financial crisis. We had the LDI shock in the UK gilt markets. Are you worried about any underlying market microstructure, just market problems that the Fed and other central banks need to be alert to?

WILLIAM C. DUDLEY: Well, I think a lot of people are worried about the U.S. Treasury market because the size of the U.S. Treasury market has grown enormously and the capacity of the primary dealer community, the securities folks that basically underpin that market functioning has not grown proportionally. And the costs to those firms of taking on, you know, greater balance sheet, has become, from their perspective, quite prohibitive because if the Treasury market were in extremis and these firms were asked to step forward, they wouldn't want to do so because that would trigger more binding capital limits on them and make the rest of their operations more difficult. So I think there are a lot of people worried about the Treasury market, whether we have a good enough backstop to support the Treasury market.

Now there are some things that have been done that I think are helpful like the Fed now has a standing repo facility that's available. So if there is upward pressure on interest rates, people can go to the Fed and borrow against those Treasury securities. But I'd like to see that go further. I'd like to see that standing repo facility not be open just to a few people. I'd like to see it be open to anybody who holds a Treasury security. So if you had a Treasury security, you know you could turn it into cash by taking it to a primary dealer. The primary dealer would pass it on to the Fed. The cash would come back through the primary dealer to the Treasury holder. And in that environment, the holder of the Treasury security might be less scared about the Treasury market and less willing to panic and try to turn that Treasury security into cash.

So I think, thinking about how to have a broader, more substantial lender of last resort function against Treasuries would seem to be a very attractive proposition. And what's nice about a lender of last resort against Treasuries, there's no real moral hazard problem because the benefits of making the Treasury market better, who does that accrue to? It accrues to the U.S. Treasury market. If I think the Treasury market is going to have less risk of volatility in the future, then I'm going to actually pay a little bit more for a Treasury security and accept a little bit lower yield and the benefit of that, it's going to go to the U.S. Treasury market. So I think backstopping the Treasury market more broadly.

You know, there's a number of other proposals in place, to have central clearing of U.S. Treasuries, to have more transparency in the U.S. Treasury market. This is moving forward, but slowly. Probably slower than it needs to move forward. And obviously the Fed, at the end of the day, is there in emergency. But, you know, I personally am very much of the view that having well-recognized ex-ante tools is much better than poorly specified ex-post tools. If you have to wait for the markets to break down before the central bank intervenes, that's not great. That's not great.

R. GLENN HUBBARD: Do you see appetite inside that Fed for that kind of standing repo facility on steroids, as you mentioned?

WILLIAM C. DUDLEY: Well, I don't know. I mean it doesn't seem to make a lot of headway. I mean one big issue that the Fed is still wrestling with is should they exempt reserves from the leverage ratio? The capital requirements...

R. GLENN HUBBARD: I would say yes.

WILLIAM C. DUDLEY: I would say yes too. To me it's a no-brainer because reserves are not a risky asset, as we know. They're cash at the Fed. And when the Fed is doing quantitative easing and adding to its balance sheet, it's actually expanding the amount of reserves in the banking system. As the Fed expands the monetary reserves in the

banking system, it's making the leverage ratios for banks more binding. That's going totally against the idea of making monetary policy more stimulative. Why not correct that by exempting reserves from the leverage ratio?

The Fed has been asked about this. Chair Powell has been asked about it and he sort of implied, yes, we're sort of looking at it. But nothing's happened for a long time and it seems like a pretty obvious solution.

R. GLENN HUBBARD: Well, it is politically fraught somewhat. I think if Senator Warren were in our conversation, she might have a different take.

WILLIAM C. DUDLEY: Well, raise the capital ratio elsewhere so the total amount of capital required doesn't change. I think this idea that you just exempt reserves from the leverage ratio and that reduces the capital requirements for banks, if you're concerned about that, as I think Elizabeth Warren would be, you could offset that by recalibrating where the leverage ratio sits so that the leverage ratio is just as binding as it was before against the entire banking system.

R. GLENN HUBBARD: Before we close, I want to come to the long-term. What do you see as the core challenges facing the U.S. economy? We touched on some things today but, you know, arguments about secular stagnation or weak productivity growth,

demographics, you talked about the labor market in that regard, fiscal burdens. What do you see as the biggest constraints on the economy going forward?

WILLIAM C. DUDLEY: I think there's a number that I would highlight. I mean the first thing that's really important is the retreat from globalization. And that's going to have consequences for productivity growth and people's standard of living. That's not free to pull back from globalization. So this idea that, you know, we can't, you know, we're going to produce all our stuff within the Mexico-Canada-U.S. nexus, not rely on China for anything, important going forward, you know, there's going to be consequences to that.

Another issue obviously is financing climate change, the climate change agenda. You know, I view climate change as the next essential problem and we've got to get going on that. And it's going to cost a lot of money. So a lot of investment dollars that are going to be needed. And that's going to tend to put upward pressure on interest rates. You know, the so-called savings glut, I don't think is going to be a savings glut for much longer because it's also going to be exacerbated by the baby boom generation retiring. A lot of people are going to be going from their high savings years to their low savings years over the next few years.

And the last thing, I guess, I would highlight is the fiscal policy path of the United States.

I mean we're probably going to end this business cycle somewhere with a deficit around 5% of GDP, which is really a really horrible performance. And that's even before the full consequences of the high interest rates show up in terms of the Treasury debt service costs. You know, debt service costs have been held down markedly over the last 15 years by the Fed's keeping interest rates extraordinarily low through 2000 and early 2020 and at zero for a long period subsequent to that. Those debt service costs are going to explode. Entitlement spending is going to go up quite markedly as the baby boom generation retires. And that's starting from a starting point of 5% GDP deficit at the end of the business cycle.

So I don't know when fiscal policy, fiscal sustainability is going to become an important aspect of financial markets. But we do know, based on the U.K. experience, that there is a limit, and at some point the bond market vigilantes will come back. And I would prefer to address this proactively rather than wait for the bond market vigilantes to arrive and have a lot of turmoil in the financial markets.
R. GLENN HUBBARD: Well, thanks, Bill. We have now struck 12, the proverbial 12. And Barbara over to you.

PRESIDENT BARBARA VAN ALLEN: Well, thank you both for giving us your time and insights today, and we'll see what happens this afternoon. But certainly this was a very timely conversation.

This year is shaping up to be an exciting one for the Club. We've already confirmed a number of events, but do continue to stay tuned to your calendar. Our next event is a luncheon February 13th with Ursula Burns, who is the Chair of Teneo and the Former CEO of Xerox. She also serves on the Board of Exxon Mobil, Uber Technologies, and Endeavor Group Holdings. That conversation is going to be moderated by Club member, Fred Hochberg. On February 22nd, we go to another economist, Dr. Richard Thaler, the Charles R. Walgreen Distinguished Service Professor of Economics and Behavioral Science at the University of Chicago's Booth School of Business. And he will be in a conversation with another economist, Greg Mankiw, also on our board. On March 1st, we'll have a Signature Luncheon with the CEO of L'Oreal, Nicolas Hieronimus. Joining us in this conversation will be ECNY Chair Emeritus, Marie-Josée Kravis. And later in the spring, we'll have an additional luncheon with Jen Easterly, who is the Director of the Cybersecurity and Infrastructure Security Agency on March 23rd. This will be followed by a luncheon with Robin Hayes, the President and CEO of JetBlue, on March 29th. We'll be hosting our annual Women in Business Conference on April 4th along with the Consul Generals of Canada and France. And finally, the schedule that we have confirmed at this juncture includes a luncheon with Lee Ainslie, the Founder and Managing Partner of Maverick Capital, also on our board, on April 18th. So more speakers will be announced soon. So stay tuned.

Also, I just want to take a moment to recognize those of our 361 members of the

Centennial Society joining us, a few of those have joined this afternoon, this morning, I noticed. And their contributions certainly continue to be the financial backbone of support for the Club. Thank you all for attending. We look forward to seeing you again soon. And everyone, have a great day. Thank you.