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**Unofficial Transcript:
St. Louis Fed President and CEO James Bullard Participates
in European Economics and Financial Centre (EEFC) Virtual Event
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Hannah Scobie: I would like to welcome President James Bullard to this video conference call. My name is Hannah Scobie. I'm the head of European Economics and Financial Centre in London, which is based at the University of London. We have had the honor of knowing President Bullard for quite some time, and I think the first time you came to London and spoke at our seminar was in 2009. And, we still have some photos of it, and you don't look a day older. It's like you look younger. So, I would also like to thank our colleagues ... [who] helped organized this event, and I would also like to welcome all the participants to this meeting. Of course, it's meant to be one hour. So, there won't be time to give a chance to everyone to ask questions, but we will do our best. So, on that note, over to you, President Bullard.

James Bullard: Well, thanks very much, and it's a pleasure to see you all virtually again. I wish I could be in London to talk to you in person, but maybe we're not so far away from that moment where we can again do these events together because I think the interaction is better. This is also very good though, and I'm looking forward to a great Q&A session here. So, what I thought I would do with the opening remarks is just, sort of, give you my take on the current situation, and eventually, I'll get around to what I think about current monetary policy in the U.S. And then, we'll go from there and see if any of that makes sense, and again, I'm very much looking forward to questions because I think we should always be testing our views and thinking about avenues that maybe we haven't emphasized in the past.

So, let's start with output. We've got the GDP report in the U.S. yesterday, and it was very good, I would say, on the whole. The growth rate in the first quarter at an annual rate was 6.3, and the growth rate in the second quarter is 6.5, so averaging about 6.4% for the first half of the year in the U.S. It's very strong growth for the U.S., and I wouldn't call this bounce back. I would say the bounce back quarter was the third quarter of 2020. Also, I think that the number was a little bit lower than expectations might have been six or eight weeks ago, but my read of that is that all that did was push a lot of the growth into the second half of 2021. So, I'm now expecting the second half of 2021 to actually be stronger growth than the first half, and then, the entire year 2021 will come out at 7% real GDP growth for the U.S. economy, a stellar rate of growth, one that is faster than China has grown in recent years and the targets that have been out for China, official targets that have been out in China in recent years. So, I like to always mention that because this is really something way beyond what the U.S. is used to, and it's really stretching the U.S. economy compared to what we're used to. And, that's why you're seeing all these special situations arise with respect to prices.

I would also say that the GDP now is past the pre-pandemic peak, so we're not in recession. The recession was also dated recently as just being March and April of 2020, obviously a very sharp recession, but also a very sharp recovery from that recession. And, now GDP, national income is above the previous peak, about eight-tenths of one percent above. But not only that, GDP is expected to grow very rapidly now in the second half of 2021, and I would say in 2022 as well, as high as 4%, I'd say, in 2022. So, you're going to have above-trend growth for quite some time in the U.S. economy. This is

going to put GDP on track to be not just above the pre-pandemic peak, but above the pre-pandemic trend line that you would have drawn. So, you are really seeing extraordinary growth in the U.S.

Now, let's turn to labor markets. So, labor markets are still down about three and a half to four percent from where they were from the pre-pandemic levels. A couple things you can say about that. Labor markets tend to lag, so that's one thing that's going on. I think another thing that's happening is productivity, just based on those numbers alone, you know, seems to be much higher here, and I think we're on the cusp of a higher productivity growth rate for the U.S. as the new technology spreads throughout the economy and that's across many different types of businesses. We may see an economy that can produce the pre-pandemic level of output. Well, we are seeing the economy produce a pre-pandemic level of output with less workers and less hours.

On labor markets, I want to emphasize four factors. One is anecdotal evidence. Another is unemployment to vacancies ratio. Another is a labor market conditions index, and at the end, I'll get to nonfarm payrolls. Anecdotal evidence of a tight labor market in the U.S. is overwhelming. If you talk to businesses pretty much across the spectrum, they're all really hunting for workers, and they're doing tangible things, like giving bonuses, retention bonuses, signing bonuses, changing the hours, changing the work arrangements in order to attract workers. So, they're really hustling to find workers, and I think that's very much an indicator of a tight labor market, the kind of thing that you'd expect to see at the, you know, when labor markets have fully recovered.

The indicators that I like to point to, I want to point to indicators that are consistent with the anecdotal evidence. One is the unemployment to vacancies ratio, which has declined to about one in the U.S. So, this means that there's one job opening for every officially unemployed worker. So, this is an indicator that has rarely been this low. After the global financial crisis in the U.S., this number was a six. There were six unemployed workers for every job opening. Today it's one for one. It's almost never been this low. It never got this low in the 2006-2007 period, and only in the 2018-2019 period was it a little bit lower, about a 0.8. So, it's about as good as you can get as far as the ratio of unemployed workers to vacancies. That's the measure of labor market tightness that the academic literature would use, and I think it's one we should, that gives us a good signal and corroborates the anecdotal evidence. That's why I've been emphasizing it.

The Committee is also committed to broad and inclusive labor market concepts, and I'm certainly very much on board with that. We want to see all segments of society do very, very well here, and one way to get a metric for that is to look at a labor markets conditions index. The Kansas City Fed's labor market conditions index has 24 different measures, labor market metrics, and puts them all together into a single index. If you look at that index, it has moved into positive territory, which means that the labor market is better than normal, better than a normal labor market, which would be a zero. It's moved into positive territory. It's moving up very rapidly and will shortly be into areas that we've not seen for a long time in the U.S. economy. So, that indicator also is corroborating the idea that U.S. labor markets are very good. It's actually a great time for an individual worker to go out and look for a job, see if they can find the right match for them and maybe get a signing bonus and some other goodies as they do that.

Now, nonfarm payrolls and hours are below the pre-pandemic peak. I think that's mostly because of supply constraints, but what's going to happen here is that we're going to continue to get strong growth in the economy as we're going to continue to get, a lot of people in the U.S. are looking forward to September/October when schools are back in session. And, we're expecting, you know, maybe not each job report, but a string of fairly successful jobs reports. If you just add 500,000 jobs, which is, since the vaccines have been on the scene since January of 2021, we've added about 500,000

jobs per month. So, if you just continue to do that, you know, by the time you get to this time next year, you'll have fully recovered nonfarm payrolls.

So, that's one thought about where you are going to want to be with respect to this taper here because that's actually the condition for raising the interest rate. That's not the condition for tapering. So, you'd get all the way back by this time next summer. I don't think 500,000 is maybe the best estimate here. The pandemic is coming under better and better control, despite the Delta variant, which I think is a temporary factor. You're going to probably add more jobs faster. So, if you added 750,000 jobs, you'd be done by the end of the first quarter, and hours worked would be similar. It's down. I've probably got the number a little bit wrong here, but about three and a half percent. So, if you added on that index total hours, private sector hours, about a quarter point per jobs report, you'd get all the way back by next year at this time. So, that's a thought about when that criterion will be met. I think it will be met sooner than what most people are thinking right now, even if you have relatively benign assumptions about what these jobs reports are going to do over the next nine to 12 or 13 months.

Now, let's turn to inflation. So, inflation is, there's been a major inflationary impulse. The U.S. economy has surprised us all. The FOMC was predicting 1.8% inflation for 2021 last December. Right now, core PCE inflation, that's already throwing out food and energy, it's 3.4% in the U.S. Headline inflation is 3.9% measured from a year ago. So, let's just stick with those two numbers. Those two numbers are the highest in 30 years in the U.S., and they're relatively smooth numbers. You're already throwing out food and energy, and you're already measuring it from a year ago. So, you're doing some smoothing there already, and you still get numbers between 3.4 and 3.9%. So, quite a bit inflation, much more than we've experienced historically. Of course, we do expect that to moderate, but I don't think it's going to moderate completely in 2022. I think that, in 2022, we'll see two and a half to 3% core PCE inflation. So, we'll still have a fair amount of inflation in 2022 because some of the things, the whole story I'm telling is that some of the inflationary impulse is going to carry over into 2022.

Now, the Committee did have a new framework beginning at, announced at Jackson Hole in 2020. That framework said that we would tolerate inflation somewhat above target for some time. As it turned out, I think much to our surprise, we got the inflationary impulse right away in 2021, the first full year of the framework being in effect. I think we're going to take that on board and say that, "Okay. Well, we're not going to react as aggressively as maybe the Greenspan Fed would have reacted to inflationary impulse like this because we do want to move inflation expectations up toward our 2% target and cement them at the 2% target." So, we'll allow inflation to run above target, which is going to happen already this year in 2021, and then gradually come down toward 2% in 2022, 2023, and beyond that.

Now, some simple calculations that you might do here. If you take core PCE inflation and you think it's just going to stay where it is at 3.4% and then that's the number for the whole year for 2021 and you just average over the last five years, lo and behold, you get a number of 2% for the last five years. So, if you think this is average inflation targeting, you actually would have hit it if you get 3.4% core inflation this year and if you're willing to have a backward five-year window. If you want to do something more like a moving average where this year is the center of the moving average, you'd have two past years and two forward years. The SEP, the June SEP for the Committee says that the Committee expects 2.1% inflation in 2022 and in 2023. If you average those numbers, two years in the future and two years in the past plus the current, you'll also get a number above 2%. So, that would also meet the, sort of, inflation averaging concept. The Committee hasn't really committed to any kind of averaging concept, but it is called flexible average inflation targeting and you can do these averages in various ways. But, the point of my bringing this up is that this is quite the large inflationary impulse, and

it's enough to have made up for some of the past misses to the downside, which was the core part of the discussion of the new framework.

So, in my mind, I think we should declare success on this. It looks like we're going to be successful, but the risk on inflation is that it does not fall back as rapidly as we had hoped or that we get some other kind of shock that actually sends inflation even higher in 2022. And then, where would monetary policy be in that scenario? Would we be well-positioned in that scenario to make, you know, smooth policy moves that would bring the situation under control? And, I think we're coming up a little short on that scenario, and that's why I want to position the Committee better to handle that situation. If inflation goes back down in 2022 naturally, we're well-positioned for that. We can take our time and we can, you know, not, we can maintain our very dovish policy. But if it doesn't, we're going to have to take action in a smooth way that doesn't disrupt markets that can bring inflation under control. We're not ready for that case.

So, I think what we should do here and what I've been advocating for is that we should taper asset purchases, I think, and I'd like to get a sense from this group here. But, my sense is that financial markets are very well-prepared for this. They've been expecting it, and they don't really think the asset purchases are that effective in this environment. You've also got this incipient housing bubble in the U.S. You probably don't want to be feeding into that. So, I think markets are very much ready for a taper. I think the Committee should go ahead this fall and begin a taper, and I think you should also go fairly rapidly. I wouldn't want to shock markets or anything, but get the taper finished. I would have a target of finishing by the end of the first quarter next year.

And then, at that point, we'll see where we are with respect to labor markets and inflation, see if inflation is moderating and see if labor markets are coming back the way I've described them. And then, we'd be in a position, if we wanted to, to move next year, but we wouldn't have to. The Committee currently thinks, the median of the Committee currently has 2023 as the point where there'd be a liftoff, and I think much of the discussion now will start to center on that as the core policy variable. I'm not saying, you know, it's not that we'd have to lift off sooner, but we would want to have the option. So, a lot of this is about optionality. You want to have the option to move on interest rates if you had to if inflation did not moderate the way we anticipate and if labor markets recover as I've described them. So, this is all about moving the super tanker and nudging the super tanker in the right direction at the right time, and that's very much the sort of calculation that I'm laying out here that might be a good way to go for U.S. monetary policy.

So, maybe I'll stop there and just see if any of that jars any questions from the group here, and then, I'm very happy to talk about a wide variety of subjects if I didn't touch on them in these comments.

Hannah Scobie: Thank you so much, President Bullard. That was really an excellent overview of the current developments and your thoughts on the subject, very clear, very to the point. Before I start my comments, I just wanted to do, make one housekeeping point. That, if people have questions, they should send their chat address to European Economics and Financial Centre, not to everyone else because we would manage the questions.

So, my comments are that I would like to highlight some of the key considerations going forward. The European Economics and Financial Centre has carried out various studies on the consequences of the asset purchases program of the Federal Reserve and the Bank of England. While initially the volume of QE launched by these central banks is designed to bring about financial stability in a turbulent market, as the asset purchases continue, you have several channels of transmission, and

that is the reserves created by the central bank 1) lower bond yields and in turn bring about lower market interest rate, 2) lower the effective exchange rate, 3) raise equity prices.

So, our studies show that, in the U.S., the transmission of QE through the stock market is a much more effective channel for the economy than lowering the bond yield. While the asset purchases have been necessary in the U.S., the side effect has been raising the stock market noticeably. In the UK, \$10 billion of asset purchases by the Bank of England is roughly judged to be equivalent to 10 basis points of a cut in the Bank of England's policy rate. So, \$150 billion of QE declared by the Bank of England in November 2020 translated to a 1.5% cut in the base rate. One important side effect of QE is the buildup of leverage within the financial system. The reserves that the central bank passes onto banks through the bond purchases are intended to be used by banks to lend to households and firms to stimulate economic activity. However, demand for loans by the real sector has proved to be not so strong and does not match the level of reserves created on the bank's balance sheet in the private sector. So, banks tend to lend out these new reserves to the financial sector through channels such as prime brokerage, lending to hedge funds, CTA funds, as well as other lending channels. In short, while QE increases the price of assets, it can also raise leverage in the financial system. This, in turn, can increase the tails of the distribution of returns, meaning enhancing the risk of large-scale losses when there are big price movements in the market.

This phenomenon can turn, has the potential to become systemic. As long as these losses are contained and restricted to local developments, they are manageable. However, the risk is that they can become systemic when various funds have to liquidate one after the other as a result of big price movements. Capital preservation is the catalyst, and so, these tails are correlated to large-scale losses in the fund management and banking industry. Leverage is an unpredictable challenge. It is difficult to know where it lies and how big an effect it can have. If and when the time comes, it'll be a task for policymakers to meet the challenge and put the fire out. Our view is that taper is obviously necessary, but, in our view, the actual reduction in asset purchases is unlikely to start before February 2022.

However, we and this audience are interested in your personal views, President Bullard. So, my first question is, if you were to taper tomorrow, you said fall, at what pace would you recommend to the FOMC to taper? What would you say? Would it be something like \$20 billion per month, which would take six months, which basically you mentioned at the end of Q1 2022, if you started in fall, which is in line with this question? And would you apportion the reduction in purchases to, say, two-third to Treasuries and one-third to MBS? And, the other question is long-term Treasury yields are near five-months' lows, and the gap between those and shorter-term yields has been narrowing. A development often associated with skepticism about the outlook for longer-term economic outlook. So, we would be very interested in your views. Thank you very much.

James Bullard: Yeah. Thanks very much. So, you know, I think on the point about leverage in the system, I'm not seeing the same sort of situation that we had in 2007, and maybe, you know, someone can show me a different analysis that will convince me otherwise. But, I'm not seeing that type of situation right now, but I agree with you that leverage that goes unchecked obviously caused tremendous problems in 2007 to 2009 and had global ramifications. So, we definitely don't want to get in that situation again.

Now, that's why I've been leaning against the mortgage-backed securities part of the purchases because, you know, at least when we initially did it in 2007 to '09 period, it was very much aimed at the housing market. That was a housing crisis, and we got into the mortgage-backed securities because of that. And then, we repeated. We came back, in April and March of 2020 when the pandemic hit, we came back with the same type of purchases at that point, anticipating that we'd have trouble in the housing market. Now, as it turned out, I think partly because of our actions, we did not get a financial

crisis on top of the pandemic, and financial measures of financial market stress, which were very high in March and April of 2020, came way down and have stayed down all the time since then. So, we're not really in, we're not anymore at the point where you have this incipient financial crisis just around the corner, which is what it looked like in March and April of 2020. So, I think the purchases were a great thing at that point. They made a lot of sense at that point, but now, we're 15 months along and you've got GDP all the way recovered and past the pre-pandemic peak. You've got a rapidly growing economy, and you're going to get labor market improvement, as the Chair said in his press conference, lots of labor market improvement ahead. And so, all of that is very good and suggests that maybe we should begin to taper.

Now, we're in the middle of the debate. So, but, as far as the apportionment between Treasuries and MBS, I think it's also true that they have similar effects on longer-term rates and financial markets, and these rates are tied together. And, they are meant to depress longer-term yields and influence interest-sensitive sectors. And if there was ever an interest-sensitive sector, surely the housing market, and the housing market has been booming in the U.S. So, I think housing prices are up year over year, if I can remember the chart correctly. It depends which one you look at, but maybe 15% or something like that on top of previous gains, which were, you know, pretty strong even before the pandemic. So, you've really got a situation where these have jumped up substantially and could go substantially higher from here. You've also got changing demand for housing in the U.S., which is an interesting phenomenon as well.

So, as far as the apportionment, I think it might be fine to just do, you know, just reduce both at the same time in proportion to the buying that we've done, but I think the main thing is that, even if you just leave Treasuries purchases, then that would still depress longer-term yields and that would still be fueling an incipient housing bubble. So, you really want to get out of both MBS and Treasuries, and I think it's more important to think about at what point do you want to be done with this process. And, I'm saying end of first quarter. That's prudent risk management, in my mind anyway, because, yes, we think inflation is going to moderate, but we don't know how much it's going to moderate. And if it doesn't moderate, then we're going to have to gently have the right monetary policy to bring inflation back down to 2%. So, I think, just to put us in good position in the first half of 2021 and we've got a moment with lots of growth here in the U.S. economy, and this is a good time to get going and get the process finished at the end of the first quarter next year.

Hannah Scobie: Thank you very much. That was an excellent answer to the questions, and, of course, there's still a lot of unknowns in the system. And, we share that. We 100% share your views and support them.

Question from the Audience: Hi, Mr. Bullard. Thank you for taking the time. So, my question is around how you view tapering? So, when discussing the need and time for tapering, how does the rally in Treasuries since March fit into your view and decision? So, we've seen about a half a percentage point rally in 10-year since the highs earlier in the year, and we could see a corresponding decline in the Chicago financial conditions index, as well as the St. Louis financial stress index, on the back of this rally. So, in your mind, has the market's response in the past two months helped create more room to absorb a reduction in Fed purchases? Is this something that you're considering when you, sort of, think about the path of tapering? Thank you.

James Bullard: Yeah. That's a great question. I thought you guys were going to tell me what's going on in the Treasury market. So, I'll give you my take on it, which is basically that the Delta variant, I think, will not have a very large impact in the U.S. but may have a very large impact globally. And so, I think this is global factors, global growth factors that are driving down longer-term yields in the U.S. and pushing the

real yield lower. So, you've got many countries with maybe not a great vaccination status, and you've got a new variant that is fast-spreading. And, I think markets are trying to price that out across the globe and figure out what that means for the recovery from the pandemic globally. But, the U.S. has a relatively high vaccination rate and is now pushing harder to get an even higher vaccination rate and also has adapted quite well to the pandemic itself. So, I think that even with some changes in policies on, you know, mask wearing and other elements, I think U.S. businesses have very much learned how to produce even while the pandemic is going on. We've already passed the pre-pandemic level of output even when the pandemic is not really over. And, there's lots of room for further growth going forward.

So, I think, get this, I think these yields have gone down because of the global factors, but that's actually going to be a bullish factor for U.S. growth, even more bullish than you would have had. And so, I think this is going to, if anything, upgrade the growth prospect for the U.S. over the next year, and, as I've said at the beginning, the U.S. isn't really designed to grow at 7% real, and this is going to cause even more bottlenecks and take longer for the bottlenecks to get resolved and so on. And so, you might see additional price pressures coming through this channel.

Another thing I haven't mentioned here is you've got U.S. fiscal. I know you guys in London may not be tracking this as closely, but there are two bills in the Congress. It looks like the bipartisan one is going to pass. I mean, no one really knows with the smoky politics exactly what's going to happen, but I would say that that one looks like it's on track. So, it's additional federal spending, depending on how you want to measure that and think about that. Then, there's an additional bill that could go, partisan bill that could go through reconciliation and pass, and so, you've got more fiscal action coming, which is something else that you'd have to think about with the absolutely booming U.S. economy and more spending coming from Washington. You know, how should we, as a monetary policymaker, I'm thinking about, well, how should I balance the risks of inflation and labor markets in that situation? So, my basic story is that it's global factors that have lowered longer-term yields, and that that is actually a bullish factor for U.S. growth.

Hannah Scobie: Thank you very much.

Question from the Audience: Thanks for talking to us today and taking questions. You, sort of, set out a case for, sort of, tapering and basically, sort of, continuing the expansion of the U.S. economy. How do you, sort of, think about the flip side and the risks of that and maybe taking the, sort of, punch bowl away early from the recovery? I guess, you mentioned the two stimulus bills coming potentially through Congress, something that, sort of, momentum there behind the fiscal is slowing because these bills are smaller in size and spread out over a longer time period than, sort of, the recent ones that came through, sort of, the end of last year and the start of this year. So, yeah. Just how do you think about those risks? And, I guess, the lessons is from, sort of, taking stimulus early that we're maybe seeing in, sort of, 2008 as well, maybe a bit more outside the U.S. than in the U.S. Thanks.

James Bullard: Yeah. I think it's a great question, but I would dispute the idea that we're taking the punch bowl away early. Again, output has recovered all the way, so we really shouldn't use the word recovery. We should use the word U.S. expansion, and the expansion is going to roar past the previous trend line. So, the economy was growing at, you know, 2% or something before the pandemic, or maybe a little better than that, but we're going to go past that trend line and output is going to be even higher than you would have had had there been no pandemic at all, even based on the trend line. So, I have a hard time saying, well, we're pulling away early here. Now, in the last recovery, which was slow, extremely slow, one of the slowest on record in the post-war era, maybe the slowest, we never passed the pre-pandemic trend line and we really took four or five years, I think, to get to the previous level of output. So, the character of that was very different. Reinhart and Rogoff famously said that financial

crises take a long time to recover. They turned out to be exactly right about that, but this is very different. This was a pandemic shock with really, I think, a great policy response both on the monetary and the fiscal side in the U.S., and lo and behold, you recovered relatively rapidly and set up the economy for very strong growth going forward. So, I don't think we're pulling back too soon.

Our problem, I think, in my mind anyway, is that trying to draw too many lessons from the global financial crisis for this situation for how to design monetary policy is kind of questionable. It's just a very different shock. It's a very different recovery. It's a very different dynamic, and I think we have to think differently about where we are. We never got inflation, you know, core inflation at three and a half percent or 3.4%, headline inflation at 3.9%. These are numbers, you know, that's measured from a year ago. These are numbers we haven't seen in 30 years in the U.S. We did promise that we would get inflation above target, and we would allow it to go above target for some time. I was, you know, a big advocate of doing that and trying to cement our inflation expectations at 2%, but this is a big inflationary impulse. We have to have the right risk management to be able to contain this if we need to in 2022. If we don't need to, we have a beautiful response to that. We can just stay at our near-zero interest rate policy, and we can push out the date of liftoff farther into the future. So, I think the risk management is, in my mind, is very clear on this.

Hannah Scobie: Thank you so much, President Bullard. I have to manage these questions. So, there is one question, and he said, "Because I'm wearing a mask, you ask the question." So, I'm going to read it to you. He says, "Mr. Bullard, how do you see Fed commitment to start raising rates only when inflation is on track to moderately exceed 2% for some time? So, even if last five years' average inflation is above 2%, we still would need to have future inflation moderately above 2% by the time the Fed starts hiking. And, if we do have very high transitory inflation, that would make it even more difficult to have expected inflation above 2%. Don't you agree?" That was the question.

James Bullard: You know, this is a great question. So, the Committee will have to make a judgment when the time comes, and I would just stress to the audience here that the current judgment of the Committee based on the June SEP is that the first rate increase would be in 2023. So, it's quite a long ways away, you know, if you thought that that meant mid-year 2023, that'd be 24 months from now. So, that's a long ways away. No one really knows what the situation is going to be at that point. So, we're going to have to monitor it, or we're going to have to monitor all the data as we go forward, as we always do. But, I think this idea about, well, have we met this criterion and are we on track to have inflation continue to be above 2% for some time, that'll be a judgment that the Committee will have to make, but the point is that you've already got basically a year of above 2% inflation under your belt by the time you get to the end of this year. Probably core inflation will be, you know, if you just think it's going to stay where it is now and there isn't any further upside to this, it would be 3.4% for all of 2021. So, you've got one year under your belt, and then, like I said, I don't think it's going to moderate that much. It's going to moderate some, probably below 3%, I would say, between two and a half to 3% in 2022.

Other people, and many in financial markets, have a sharper slowdown in inflation in 2022, but the median of the Committee, according to the June SEP, still has 2.1% inflation in 2022. So, and then, the Committee at some point would have to make a judgment. Well, you had, you know, you had a couple years at that point of above target inflation and is that enough to have met our new framework. And because it's a new framework and we haven't done it before, it'll involve a judgment of the Committee, but I think that whole process, I think, will be highly dependent on the data and the sense of the Committee. So, there is a lot of judgment there.

What I'm guarding against and, you know, I think, in the June SEP, 13 participants thought there was upside risk to the inflation outlook. So, and I think financial markets probably think there's upside risk to the inflation outlook, and I want to have the Committee be in a good position in case that develops. And then, we would have to be more aggressive, but obviously, a lot of people think, they want to put zero probability on it. I don't think we should put zero probability on it. We should say there's, you know, there's maybe a 25% probability that inflation comes in higher than what we currently expect, and what are we going to do in that situation.

Hannah Scobie: Thank you, President Bullard. That was very informative and really well-explained.

Question from the Audience: Thanks very much for taking questions. So, I have two questions, if you'll allow me. The first is just on a comment that you made earlier in your prepared remarks, which was basically that you mentioned that the U.S. is on the cusp of a boom in productivity and then laid out a very optimistic outlook for the jobs recovery. But, I was wondering if you have a view that there may be long-run implications from skills mismatch in this productivity shift going forward that might, sort of, you know, last longer than this initial rebound in jobs that we might expect over the next 18 months, call it, and then, whether or not that implies a higher NAIRU going forward? And then, my second question was just on the recent announcements on the standing repo facility and the FIMA repo. And, I think you know, if I recall in 2019, there was, it seemed like there was some apprehension on the part of the FOMC about having a large and variable balance sheet. I wonder if that's changed in light of the events in March and April and whether or not there is further implications to come from the recommendations laid out in the G30 report. So, just curious to get, sort of, your overall thoughts on that. Thanks.

James Bullard: Yeah. On the jobs recovery and mismatch, I think, so far, we've recovered as far as we have and got output above the pre-pandemic peak while the pandemic is still really going on. We certainly have the vaccines, which have been very successful in mitigating hospitalization and death from the disease. That's been very helpful, but obviously, the pandemic is not quite over. It is going to have a long tail here, and, but, I think, nevertheless, that the, as far as the economy goes, the economy will power ahead and we'll have a very good second half of 2021. I think one issue for the jobs recovery, and I've been pushing against the idea that you should compare the pre-pandemic levels of hours and jobs and use that as a metric, is that you've got a lot of retirements in there. One of the things that happened was that the pandemic came along and workers that were, you know, had the option to pull out of the labor market did so. And, they have nest eggs that are very robust in this situation. The price of their house went up 15% in the last year, and the, you know, to the extent they were in equities, equities are at an all-time high. If you look at measures of wealth to disposable income, those are at, you know, very high levels, as high as we've ever seen them. So, I don't think that these retirees are going to come back into the labor market. They're unlikely to come back into the labor market. They've made their decision to retire and they've got, they are in a good—If they were in a good position before, they're even in a better position as the year has gone on as the pandemic has gone on.

So, that might mean that you actually don't get as many, the job count doesn't go up as fast. But what would that mean? Because output is going to go up pretty fast, it looks like, so it looks like productivity is going to be pretty high. And, I think there is some prospect, considerable prospect, that productivity's switching to a higher growth regime, it would make a lot of sense that we've experimented with all this technology during the pandemic. Businesses have really had to scramble about how they want to deliver their goods and services and how they can use technology to overcome the impediments put in front of them by the pandemic, and that's going to have a lasting impact. If we could get the high growth regime in the U.S. that existed between 1995 and 2005 and productivity was about 3%, we haven't been in that regime since the 1995 to 2005 period. But, boy, it had a very large

impact on the U.S. economy and was very important for U.S. growth. The U.S. economy grew about 4% on average for quite a few, from 1996 to 2000 or so. So, just to show you the ramifications of that, in 2000, there was a brief debate about the U.S. actually paying off its entire national debt. That didn't happen, but it shows you how important this could be for the future of growth in the U.S.

So, I'll quit rambling on about that, but the mismatch question, this has been an uneven recovery, I think everyone knew, in the K-shape recovery, and I'm very much on board with that. This has hurt the sector of the labor market that is high physical contact workers in low-wage shops, and the U.S. has a lot of Black and Hispanic workers. We very much want them to be able to get back into a good job match for them. I think they will be able to do that. I think it's not clear exactly yet that they really want to jump back in because of supply constraints. You've still got this kids at home issue. So, I think, for a lot of women in particular, that can be an issue. You've got lingering fear of the pandemic and vaccine hesitancy among a large group. I think that can be a factor. And so, it's going to take some time to unwind those issues. But, as far as the jobs go, I think it's a pretty good time. You could probably get a bonus to go back to work. You can probably switch jobs and get higher pay at a similar job somewhere else. All of that is happening and I think will continue to happen in the next six months or so.

On the other question, which was—Actually, could you restate the other question? I wasn't quite sure where I should go with that.

Question from the Audience: Yeah, sure. The second question was just basically, given the recent announcements on the standing repo facility and FIMA repo and then the recommendations laid out in the G30, I was just wondering if there were, sort of, any longer-term lessons learned dating from March and April last year that sort of shifted the views on the FOMC or your personal view on having a large and variable balance sheet. And what does that mean for the size of the balance sheet going forward? Thanks.

James Bullard: Yeah. So, some of you know I was a big advocate of having a standing repo facility, so now it's going to become a reality as we implement it in coming quarters. In my mind, this setup an international, had the U.S. meet an international standard. We already had a reverse repo facility. This now has a complement of that. We should be able to manage potentially with less reserves going forward. We'll see if that actually materializes. It makes sense to me that you would have these standing facilities, and you have credibility on the standing facilities. And then, they don't actually have to get used all that much and you'd have the policy rate in between. And, this is meets an international standard about how you operate monetary policy.

I also think that the FIMA facility was a great innovation, actually, during the crisis because dollar funding is an important issue around the world, as we found both in 2007 to 2009 and again in this situation. And so, this gave an option, an easy way for foreign central banks to hand in their Treasuries in exchange for dollars, and that's exactly what they often want to do in crisis situations. So, I think that was an important innovation. I'm glad that we made it a standing facility.

Hannah Scobie: Thank you very much, President Bullard. I just wanted to ask one question in terms of comparison of the effect on the market of not investing maturing bonds versus tapering asset purchases. I mean, when the bonds mature, if the Fed just simply not reinvest it, I was wondering whether that is ever considered as a starting point for tapering. And what effect do you see in terms of effectiveness of tapering between the two, not reinvesting?

James Bullard: Yeah. My own view is that we should end reinvestment as well at probably at the end of the taper, and we should prepare markets that that's what we're going to do. The balance sheet,

obviously, has gone up by trillions here, so you can probably let that gradually come down over time. Again, I think the consensus opinion as far as I can discern it in financial markets is that, at this point, with the U.S. having recovered to this point, we could easily do this and without too much trouble. So, I think we should just go ahead with that aspect as well. Traditionally, on the Committee, that's been a, sort of, separate decision. So, I don't know exactly how the Chair will handle that particular aspect. If you make it a separate decision, then you have to, at some other meeting, you'd have to decide you're going to end reinvestment, and I'd prefer not to try to send any signals through that kind of thing. So, I would just end it at the end of the tapering.

Hannah Scobie: Well, basically, we have two minutes for a last question.

Question from the Audience: President Bullard, thank you for your time today. So, my question is actually related to China and the recent crackdown by the government on various domestic sectors. It's fair to say that it's a topic that the FOMC has been relatively quiet about. So, how in your view does it look? Could it affect you here? So, could it potentially derail your call for a taper and eventually higher rates, despite your view on the extended path of inflation although the Committee may have inflation wrong?

James Bullard: On China, we're still expecting pretty strong growth in China this year and next, and I know there are, you know, lots of issues about how they want to handle technology transfer. My reading is that the Biden administration has, in this area, kept the previous administration's policies more or less intact, maybe not exactly, but more or less. A political consensus has emerged in the U.S. to, I think, you know, be tougher on China, on China trade practices, on espionage and related issues. So, I guess, you know, Kissinger said we're in the foothills of a cold war, and, you know, I hope we can smooth this out. But, it's really quite a ways beyond my paygrade to try to work on U.S. foreign policy.

Hannah Scobie: Thank you very much, President Bullard. That's really been a great session, and we really appreciate it. I'm sure there were lots of questions in this audience, and we very much hope that we can invite you again when your time permits.

James Bullard: Well, yeah, thanks for having me. I always like to see this group when I'm in London, and hopefully, I'll be back soon.

Hannah Scobie: Please do.

James Bullard: And, I know the trading week is over, and so, have a great weekend to everybody.

Hannah Scobie: Thank you very much. That's wonderful, and we'd like to ask all your colleagues and thank them for their work. And, it's been great.