Kath McGrath:

All right, if we could get everyone the... We're going to get started. Get everyone's attention. Alrighty. Well, I hope everyone enjoyed that meal. It's fantastic. Welcome. Happy New Year to everyone. I'm Kath McGrath again. For anyone that missed it, I'm the president of the CFA St. Louis Society.

Before we get started, I want to remind everyone no photography is allowed, so please keep those smartphones on silent and in your pockets. Welcome to the CFA charterholders, the society members, CFA candidates, the Financial Planning Association, which we have the president of that, Jason Sanford. We also have the Rotary Club of St. Louis with us and we have President Richard Warner, as well as the St. Louis Women's Investment Network and President Ashley Martin. So we welcome the groups as well as the guests. Thank you to everyone also that was involved in the planning of this event, including those at the Federal Reserve Bank of St. Louis, Joan Hecker, and everyone here at the Missouri Athletic Club.

You have all probably seen interest rates and inflation mentioned at least once or twice in the news over the last year or two. I'm honored and fortunate to have the opportunity to welcome Jim Bullard to discuss these and other topics with us today. James "Jim" Bullard is the president and CEO of the Federal Reserve Bank of St. Louis. In that role, he is a participant on the Federal Reserve's Federal Open Market Committee, which meets regularly to set the direction of the US monetary policy. He also oversees the Federal Reserve's 8th District, including activities at the St. Louis headquarters and its branches in Little Rock, Arkansas, Louisville, Kentucky, and Memphis, Tennessee.

A noted economist and policymaker, Bullard makes Fed transparency and dialogue a priority on the international and national stages, as well as on mainstream. He serves on the Board of Directors of Concordance Academy of Leadership, and he is the past board chair of the United Way USA. He is an executive committee member of Greater St. Louis, Inc.'s Chair's Council. In addition, is co-editor of the Journal of Economic Dynamics and Control, a member of the Editorial Advisory Board of the National Institute Economics Review, and a member of the Central Bank Research Association Senior Council. He's an honorary professor of economics at Washington University in St. Louis, where he also sits on the Advisory Council of the Economics Department and the Advisory Board of the Center for Dynamic Economics. He's also a native of Forest Lake, Minnesota. Bullard received his doctorate in economics from Indiana University in Bloomington. And despite all of this, he still has time to talk to us today.

Today's format is going to include Jim's prepared remarks followed by Q&A. Please walk to one of these two microphones to ask a question. Jim has a hard stop at 1:15, so we are asking please keep your questions pointed and only ask one question. Don't embed two or three, and then return to your seat. So without further ado, let's welcome Jim to the podium.

James Bullard:

Well, thanks very much and happy New Year to you all. It's great to see you all again. I remember being in this very room one year ago. I might allude to some of the things that were said at that time in this talk. And we'll see if I can get rid of this. And so I thought what I'd talk about today is The Prospects for Disinflation in 2023, our new year. And I'm happy to entertain questions about other things that aren't in this talk when we go to the Q&A here. If you want the... Let's see here. Clicker's not clicking. There we go, okay. So if you just want the CliffsNotes version, you can just take this slide.

First of all, I want to talk about GDP growth, which appears to have improved in the second half of 2022. That's the news that has occurred over the holidays here. Then I'll talk about labor market performance which remains very strong. Inflation of course remains too high, well above our 2% target, but has declined recently. And I'll talk about that decline a little bit. The policy rate, our policy rate of the FOMC is not yet in a zone that might be considered sufficiently restricted, but we are getting closer. I've got an

excellent graph for you on that. And I think also that front-loaded policy has helped a lot to keep inflation expectations under control. And I've got an excellent chart on that that I like, and I'll show you that. So I think what we're looking at is a combination of factors that are making it more likely that 2023 will be a disinflationary year, and so I'll tell you my story in this talk here.

Let's start out with the GDP topic. GDP has been a bit of a mystery because we had this negative real GDP growth in the first half of 2022. And people were... Many of you and all of us maybe were scratching our heads a little bit about that. But GDP growth does appear to have improved in the second half of 2022. And in particular, third quarter GDP growth is now estimated to have been 3.2%, which certainly a healthy rate for the US economy. And now, fourth quarter tracking is that the economy grew at an above-trend pace in the fourth quarter as well, that you may have been asleep on the couch when the tracking estimates went up during the holidays here. And so now, you've got, you're looking at a pretty strong second half of 2022 and that negative first half is fading a little bit into the background.

If you want to look at other ways to gauge growth, you could look at year-over-year, GDP growth that is slowing and I've got a picture of that. And if you want to look at it as an output gap instead, the level of output compared to the potential level of output, the output gap is positive according to current data. So pretty much any way you look at it, GDP's looking better than it was maybe last fall.

Here's the picture on GDP growth, and this picture goes back to 2021. The potential growth rate of the US economy according to the Congressional Budget Office is the horizontal dotted gold line in this picture. The blue bars are the quarterly annualized growth rates, and this goes back to 2021. Those blue bars on the left side of this picture are all very tall. We had a banner year in 2021 and ridiculously high growth rates as we were coming out of the most severe phase of the pandemic, 7% in some of those quarters. You had this stellar growth in 2021, so it was clear it was going to be slower in 2022.

But I think I was taken by surprise that the first quarter and the second quarter in the middle part of this chart were negative. Blue bars are negative there, below potential growth rate. Now, usually two quarters of negative GDP growth would be a recession by a standard rule of thumb, but the other data did not cooperate with that interpretation, especially labor market data. And so I think those negative numbers in the first quarter of 2022 were a head scratcher for most of us.

But in the second half of 2022, you got a positive blue bar there for the third quarter. And now, look at these dots on the right-hand side of this picture. The Atlanta Fed's GDP now which is the blue dot, and the IHS Markit, now the parent organization of former McElroy Economic Advisors out here in Clayton, is the triangle there. Those are both above the potential growth rate. So you've got this second half looking a lot better now than it was, and perhaps this is... And that's more consistent with labor market data. I think you've still got a puzzle about the first half of 2022, but the second half seems to have come in line with more of what we're thinking about the strength of the US economy. Interesting, I think.

And if you want to look at this on a year-over-year basis, I've been looking at this from time to time, the Lewis-Mertens-Stock measure, this is a weekly measure of year-over-year GDP growth. It's scaled to that metric. Again, we've got the CBO potential growth rate as the horizontal line in this picture. And you can see according to this, that you had this big increase in 2021 and rapid growth rates in 2021 is slowing down to the potential growth rate for the US economy. Makes complete sense. You had the big shock from the pandemic. You had the big recovery from the pandemic. And now, it's slowing down. You get to the right-hand side of this picture, it may have slowed down maybe slightly below potential, although I'd warn you, this blue line does bounce around based on weekly data. But this is another way to interpret what's going on with GDP growth, and you really wouldn't get this story about a negative first half of 2022 if you just looked at it this way.

And then here's the level of real output and the output gap. Again, in this picture, you go back to 2019 on the left-hand side, and obviously you had the big pandemic hit to the economy in the second quarter

of 2020, then everything's pretty much V-shaped as you get to the right-hand side of this picture. And the output gap according to the CBO or compared to other calculations is positive at this point. Pretty much no matter how you look at it now, output's looking better maybe than it was. Perhaps the best interpretation is that GDP growth is slowing to be in a neighborhood just below the potential growth rate of about 2% on a year-on-year basis after stellar growth in 2021. That's the story on GDP growth.

And like I say, I think the second half of 2022 numbers are now corroborating better with the labor force and labor market data more generally. And labor market performance does remain very strong. In particular, the number of job openings per unemployed worker remains at a high level. I've also got a chart here in just a minute that says that if you look at this in a historical perspective, the current labor market is unprecedented for the US economy at least since the 1980s, which is as far back as my chart goes. Measures of labor demand are significantly exceeding measures of labor supply, and this is not something that's been common in the post-war macroeconomic data for the US. If you want to switch to some other metric, you could look at unemployment insurance claims. We got another good number today this morning, but claims are just... I've got a chart here. They're just at very low levels no matter how you cut it. So claims are often considered one of the best business cycle indicators, and they're not doing anything right now anyway.

Here's the vacancies per unemployed person off the JOLTS data. The JOLTS report was again good just yesterday, so you've got 1.7 job openings per unemployed person. It certainly seems like a person that got knocked out of their job today would have good prospects to go back in, search, and get back into a good match hopefully fairly quickly for that person. But you can see that this has not been the history of the JOLTS series to be at 1.7 jobs per unemployed worker. Even in December of 2018 or 2019, we're just slightly above one job opening for unemployed worker. And that was a pretty good labor market with unemployment rate that hit 3 1/2%. And you never got to this level in the early 2000s, always below 1 during that era. So this is just unprecedentedly high, and the next picture really says this.

In this picture, the blue line, this goes all the way back to 1980. The shaded regions are the recessions and the blue line is the available workers, so the measure of labor supply. That's everyone that says that they have a job or says that they're searching for a job. That's the blue line in this picture. And then the labor demand is the number of job openings plus a measure of workers here. You've got this gold line here going way above the blue line on the right-hand side of this chart. But you can see the gold line is normally in the post-war era has been below the blue line. So normally, you have a situation where people get knocked out of work. They spend a fair amount of time in the unemployment situation. They have a hard time getting back into work. And that's not the situation that we're in today. We've got quits still at a very high level. It's not in this chart, but just a very different labor market than what we've seen historically.

Now, if you look at Chair Powell's Brookings remarks, he talked about this in more detail than I'm talking about it here, but I would echo those remarks. It looks like we're structurally short of workers on that blue line there. He gave reasons for that but you can think of your own. You certainly got older workers more reticent to come in back into the labor market than they would've been pre-pandemic. That's a factor. You've got less immigration than you've had historically. That's a factor. You've got a childcare industry that was disrupted by the pandemic and has had a hard time getting back on track. This is also disrupting the number of people that are wanting to and able to come back into the labor force. And also, the scale on this. If you just look, this is you're looking at 160, 170 million workers there. That gap is a couple of million, so you're talking about a big number of labor market shortage. This is very interesting.

And I just would caution people when they're analyzing based on the post-war data on these other recessions, that you didn't have this, the circled area is not consistent with all those other episodes. So just something to keep in mind there.

And then if you look at the unemployment insurance claims, this picture is a way to control for seasonality. This takes all the years in the last decade since 2013. The horizontal axis goes by the week of the year and the raw number of unemployment insurance claims for that week going all the way across from week 1 to week 52 on the right-hand part of this chart. And I guess the main message is that the pale blue line there, the initial claims all during 2022, were basically at the very lowest end of any of these other years that you might have seen. And even including, let's say, the November and December data on the right-hand part of this chart here. Claims, again, at super low. Super strong labor market. And you can also see the pandemic here, the 2020 line goes off the scale and then comes back on later. The bottom line, labor markets remain very strong.

Now, inflation is too high and remains too high as it was last year when I spoke from this podium. But it is perhaps declining, and let's take a look at that. Now, the committee has a 2% inflation target. We've had that officially since 2012, unofficially since 1995. That's in terms of headline personal consumption expenditures inflation. It is the headline number that we're trying to get ultimately. Headline inflation has declined, but we know and you know that that can be influenced heavily by energy prices and commodity prices and food. And the commodity prices have come down precipitously during the second half of 2022. And so we may want to look at other measures of inflation that strip out the volatile movements.

One way to do that is look at the core PCE inflation. Another way to do that is to look at the Dallas Fed trimmed mean inflation rate. The Dallas Fed looks at the entire distribution of price changes, throws out those on the low side, throws out those on the high side, and just looks at the center of the price change distribution. So you throw out the ones that are moving excessively in any particular period.

The picture looks like this. This is all inflation rates measured from one year earlier. The headline inflation is a dark blue line here. The core inflation rate is the gold line and the Dallas Fed trimmed mean based on PCE is the gray line in this picture. So a couple things about this picture. This goes back to 2019, and you could see in 2019, obviously inflation was very low. In fact, it was below the inflation target of 2%. The horizontal dotted line in this picture. The Dallas Fed trimmed mean was right on 2%. So there's a lot to like about that particular measure. When the pandemic came along in the first half of 2020, these measures did drop, but they didn't drop maybe as much as you might think in response to the pandemic. And then you really didn't have anything going on until about the second quarter of 2021. That's when the blue line, the gold line jump up and the gray line starts to drift higher. And basically since then, you've had much higher inflation. You're talking about scale, 4, 5, 6%, 7% at the peak here.

Now, these have turned around, and Wall Street has made a lot of talk about this. If you look at the blue line at the peak at 7, now between 5 and 6, okay. If you look at the gold line between 5 and 6, now below 5, okay. You have to squint a little bit more for the gold line and then the blue line and then the gray line, wow. Yeah, maybe it's down but you really have to squint to see that one. So I'm not sure we've really seen convincing evidence at this point. It certainly is encouraging. The blue line is encouraging, but we know that's driven partly by energy. We know the gold line is even the gold line strips out. Food and energy is still influenced by energy prices. The Dallas Fed trimmed mean barely coming off its high. So we're going to need some more evidence before we can say inflation is definitely moving down, but it's encouraging us going in the right direction on all three measures.

Now, a big factor in macroeconomics and inflation is inflation expectations. They're relatively low, which I think is due to the front-loaded Fed policy during 2022. Something I advocated and others on the committee advocated was to move the disinflationary policy, be aggressive, try to get inflation under

control as soon as we can so that we don't repeat the 1970s experience where we let inflation linger for 15 years, culminating in the 1980, '82 recession with unemployment rate at 10.8%. We don't want to get into that kind of a fiasco. Let's get inflation under control now while the economy's performing relatively well, while the labor market is relatively strong. And if you look at inflation-based expectations, they are relatively low. According to standard macroeconomic theories, inflation expectations are a key determinant of actual inflation, what's actually going to happen with inflation in the future.

Here's my killer graph on this. This is the swaps market inflation expectations. The blue line is the two-year, the gold line is a five-year, and the gray line is a five-year, five-year forward. This goes back to January of 2021. And so it's exactly two years worth of data. And January '21, as I showed you on the inflation picture, no one was talking about inflation at that point. It didn't look like inflation was developing, and at least in the data, there wasn't any inflation developments at that point. But you can see the red circles there on the left-hand side, and on the right-hand side are very similar levels of inflation expectations for all three different horizons. And that's very encouraging. In the middle here, we see that inflation expectations blew out somewhat, especially during the first half of 2022.

If you recall the first half of last year, the committee hadn't really done anything as far as trying to have a disinflationary policy, and the actual inflation numbers were going up. And I think markets were starting to wonder, "Are these guys going to do anything or not?" But we did. And then as we had a pretty aggressive policy during 2022, you can see that expectations about inflation started to decline, especially in the second half of the year where we started to get some relief from the data and we started to get the policy rate up to a more normal level. And obviously, we have 75 basis point moves at several meetings in a row. But the point of this is that we've gotten all the way back now to the pre-inflation shock level of inflation expectations. Macro theories tell us that that bodes very well for the future of an actual inflation, so this is a good signal for disinflation in 2023.

Now, is the policy rate at the right level? The committee stated in our statement that we wanted to get to a level of the policy rate that was sufficiently restrictive. That's the wording that we used. And I put some color commentary on this by giving a speech on this in November called Getting into the Zone. I'm not going to review the elements of that speech here, but I am going to show you the killer chart from that speech because it does give you some idea of how to think about where the level of the policy rate is right now compared to where it should be, at least according to this calculation. And it's not in the zone yet, but it's quite a bit closer than we have been over the last year or so. And so we're getting closer to sufficiently restrictive, but more importantly, I think it shows that it looks like we're going to catch up and actually be in the right place with the policy rate in the zone that is sufficiently restrictive during 2023.

Here's the chart. Again, I'm not going to go through the details of this. You can see my earlier talk as to how this gray area was developed here, but I'll talk about it in broad terms. This goes back to 2019 and comes up to the present. The blue line is the actual level of the policy rate. You can see the blue line declining somewhat during 2019. Some of you might remember the summer and fall of 2019. And then the pandemic hits and the policy rate goes down close to zero and stays there until 2022. And then has been increasing as you guys are well aware since March of last year.

Now, the gray area is the zone that would be recommended by a Taylor-type policy rule. As spelled out in my previous speech, the dotted gold line would indicate a minimum value. If you were going to be most generous that you could be about all the assumptions that go into this, then you would get that dotted gold line and that would give you the lowest value of the policy rate that you could possibly think of that would be sufficiently restrictive. If you don't want to be quite so generous on the policy assumptions, then you'd get the other gold line, the more refined dotted gold line there. And the area in between is a gray region. So if you could get somewhere in that gray region, you could make a straight

face claim that you've got the policy rate at a sufficiently restrictive level for the macroeconomic conditions that we faced today, and that would be a good thing.

Now, you can see the blue lines then below the gray area during 2020, second half of 2021, and then all during 2022. Even though we've been increasing rapidly, we haven't been increasing rapidly enough to get in this zone. And I think there are limits to how fast we can go even though we've gone at 75 basis point increments for four meetings in a row. That's helped us a lot to get a lot closer to this range. The other thing I would say about this picture is that the shaded region moves around. So the shaded region's not a fixed object. It will move depending on the data. And in particular, if you think inflation's coming down, then you think that that gray area would also be coming down.

So what you want to see in this picture is an intersection where the blue line moves into that gray area somewhere that would be sufficiently restrictive. And if you look at this star in red on the right-hand side of this picture, that's what the median member of the committee said would be the policy rate at the end of 2023. And it sure certainly looks like that zone and the blue line are all converging right to the star there. So it looks like we'll get to sufficiently restrictive very soon.

In addition, markets anticipate what the Fed is doing. So markets are already anticipating this picture, and they're already seeing that this is going to happen. This is helping with credibility. It's helping with inflation expectations, keeping that under control. This is all I think very encouraging from the point of view of getting to the right level of the policy rate. But we do have to follow through on previous promises that we would get to sufficiently restrictive. That means that there'll probably be ongoing increases in the policy rate in the meetings ahead.

Let's put this all together and then I'll open it up for Q&A. Is 2023 going to be the year of disinflation? I certainly hope so. It does seem that the real side of the economy is looking reasonably good for considering where we're at on policy. GDP is growing faster than previously thought during the second half of 2022. That's more in sync with labor market data, which is still very strong. Unemployment is below its longer-run level. So a natural forecast to make is that the GDP growth rate will moderate from the level that we saw on the second half of 2022, and that the unemployment rate can't stay this low. Probably even if we did nothing, it can't stay this low. It'll probably move up to its more natural level somewhere in the mid-4% range.

And then on the other side, the policy side, the FOMC has taken aggressive action during 2022. We have ongoing increases planned for 2023. And so that combination has returned inflation expectations to a level consistent with the Fed's 2% target. A good prediction is that inflation will actually follow inflation expectations back down to the lower level that as the real economy normalizes. I think this is looking pretty good as of today, but in this business, you don't want to say too much about the future.

There's one related issue that I've got in this deck, which is that the committee has moved very rapidly during 2022, and this has made all of your jobs much harder than they otherwise would've been. And I'm aware of that. And so we did that because of a front-loading strategy to try to get the appropriately restrictive stance given the very high inflation that we have. But we also recognize that that could cause financial stress and has in past tightening episodes in the US such as 1994.

But I think what has happened here is that because there was a lot of transparency around this rate increase before the rate increases were made, it was clear they were going to happen. There's transparency in that sense. There's been forward guidance, and that seems to have allowed for relatively orderly transition to a higher level of interest rates so far. Not that it doesn't have effects. It does have effects, and certainly everything has to be tens of trillions of dollars worth of assets have to be reevaluated and repriced. That's not an easy thing to do. However, it's been done in a relatively orderly fashion, at least so far. One way to see this is that the St. Louis Fed's financial stress index is so

far indicating a relatively low level of financial stress despite dramatically higher policy rates during 2022.

Here's the St. Louis Fed's financial stress index. This chart goes back to 2019 and comes up to the present. This is a weekly index. You can see during March and April in the middle of the picture there of 2020, this thing hit a 5. That would be 5 standard deviations above normal. So a crazy amount of financial stress right around the time that the pandemic hit. No one knew what was going to happen next. Makes perfect sense that there would be all kinds of financial stress. However, by July and August of 2020, most of that had gone away, and a financial crisis was averted in the US. One of the most successful parts of the policy was that we did not have a financial crisis on top of the pandemic. That financial crisis could have occurred.

Financial stress went back down to a low level. If you go over to the right part of the chart here, it doesn't really look like we've got a lot of financial stress today. We've got different pricing today than we had, that's for sure. And different assets are worth different amounts, that's for sure. But as far as financial stress, we're really not seeing it right now. So I think so far, so good on this dimension.

Okay. Let's wrap up here. GDP growth looks like it's improved. Labor market performance, still very good. I think the GDP and the labor market data have come more into alignment just in the last few weeks here. Inflation's too high, but if you squint, maybe Dallas Fed trimmed mean is declining slightly. Policy has kept market-based measures of inflation expectations under control. Policy rate is not yet sufficiently restrictive, but we're getting very close. It looks like we'll be there in 2023. And so I think we are in good position to make 2023 the year of disinflation. So thank you very much.

I think you're supposed to come up to the microphone. We don't come to you anymore. It's all self-service.

Speaker 3:

Thank you. Thank you for your presentation today. It's always enjoyable. I come here to try to gain some insight into the Fed's thinking, and I was glad to see you utilize the Taylor rule. What about Milton Friedman money supply and lagging inflation. That has a pretty high correlation of late. And didn't the St. Louis Fed pioneer that? And do you not use that anymore? Or what do you use?

James Bullard:

We did indeed. I think if you've looked at the M2 charts, M2 exploded during the pandemic and correctly predicted that we would get inflation. And now if you look at the same chart, M2 growth has declined dramatically. That bodes well for disinflation, but it's actually turned negative in recent reading.

So yeah, I'm a monetarist at heart. I certainly did lots of analysis myself on money. It's just been hard to correlate at high frequency with inflation numbers. I think that's been the main issue. But inflation is certainly a monetary phenomenon. That's why it's called monetary policy. And so I'm very sympathetic to this. The main issue for those of you that aren't into this, the main issue has been not really that money or that inflation is a monetary phenomenon. It's been how exactly should you measure money and how should that correlate with inflation and at what frequency and so on and so forth. And there's a hot, huge literature about that. But I think everything that could be said probably was said during that era. But this has been a chance where money is going, maybe get a little bit of a resurgence because it did correctly predict the inflation that we got.

I think I've said this here before, but the scuttlebutt around the St. Louis Fed, it was always and has been over the last couple of decades, that at very low levels of inflation, you've got some noise in your money measure and some noise in inflation. So when you look at, try to relate them to each other, they're not

highly correlated. But when you get a huge movement in money, then you do get the movement in inflation and then you see them, see the high correlation. That's why it worked in the '70s, '60s, '70s, '80s where you had big movements in inflation so you could actually see these correlations. And it didn't work well in the '90s and 2000s where you couldn't really see those correlations. So I think that's basically the story.

Speaker 4:

If there is a recession in 2023 and political pressure remains strong, is there a risk that the Fed changes its 2% inflation target and lowers rates earlier?

James Bullard:

I don't think so. I think it would be a terrible idea to have an inflation target. And then as soon as you start missing the inflation target, you start talking about moving the target around. That's a way of saying you don't really have an inflation target.

Inflation targeting was enormously successful. It came into vogue in the 1990s, inflation. All these different central banks around the world adopted inflation targets either implicitly or explicitly. They took actions to try to contain inflation in their countries. And what did you see? All these inflation rates came down, came close to their targets. Inflation expectations centralized around those targets. Central banks are far more credible and basically got rid of all the inflation that you had in the '70s and the '80s through inflation targeting. But all that happens because you name an inflation target and then you manage toward it. It's exactly like in your businesses, it helps a lot to say what you're trying to do and then reward people when they actually do it. That's exactly what's going on in central banking.

So what you don't want to do here is then when something's going wrong, all of a sudden you change the target. That's like not having a target. And I also think it would be a disaster on an international dimension because if the US moved off its inflation target, this would mean that all the other countries around the world would have to move off their inflation targets. You'd probably get a global inflation, so a repeat of the 1970s. So It's a bad idea, yeah.

Speaker 4:

I'd like to go back to you mentioned market reaction to this sufficiently restrictive rate level. When you look at the market reaction, it's been very different. When you look at the bond market, the bond market seems to anticipate the FOMC to move very hard and fast, potentially risking recession. The stock market is very optimistic, believes that the Fed will blink. And then the dollar was with the bond market, but then very recently has been with the stock market. How do you think about that? How do you reconcile that? And do you believe one of those might be a more correct reaction than the others?

James Bullard:

I don't have to trade every day, so I'm just telling you my job is to say, "Here's what the policy's going to be. Please price all the assets appropriately." And I understand that it matters a lot what the discount factor is for all of these assets, but I do think some things are happening that make a lot of sense. I think at very low interest rates, companies would get together, maybe some of yours, then they would say, "Okay. Well, we have a technology that we're going to experiment with but we don't really have the business application and we're not really sure the payoff might be 10 years in the future." That's not going to be as good of an investment in an environment where interest rates are higher as compared to when interest rates are lower. What do you see? You see that money drying up and the valuations of those kinds of companies coming down from where they otherwise would've been. But I'm pleased, I

think, that on the whole, that's happened in a relatively orderly fashion. And so I think we can continue to see the markets adjust to the policy.

Another thing I would say is that when you're evaluating the stock market, those companies that are listed, there are two things that you have to keep in mind. How much of those profits are being earned overseas? And it's a substantial fraction. I think the outlook for the global economy is probably not as good as it is for the US economy. You've got a lot of people predicting recession in Europe. China, we haven't talked about yet, but it's question mark around China. So you've got the overseas factor, but you've also got the corporate margins.

And so I think the disinflation is going to really reward companies that put a lot of effort into innovation, put a lot of effort into productivity improvement, and really get serious about running their business in a tight way. There'll be other businesses that say, "Oh, there's a lot of inflation. I can just raise my prices all the time." They're going to get hit hard, I think. And I think that's going to be a big factor going forward. So a lot of the investor assessment has to be, well, who's going to be the winners here, and who's going to be too lazy and just try to raise prices even in a disinflationary environment? I think that's going to be a big factor going forward. So it didn't really answer your question, but those are some things I wanted to talk about.

Speaker 5:

Okay, thank you. I have maybe a basic economics 101 question. But you referred to what the Fed does interest rise as the Fed policy rate. And since we follow a lot of banks, I ask them what difference it makes and they say as far as they know, it doesn't make any difference to them. But obviously, it does make a big difference. So maybe you could explain what exactly the Fed policy rate affects? And is that different than the discount rate or the Fed funds rate? And exactly what is the Fed policy rate as far as how it affects everything?

James Bullard:

Yeah. The Fed and other central banks do have a lot of influence on the very short end of the yield curve. And I think as many of you know in this room, those rates will move. 90-day T-bills let's say will move very, very closely with the policy rate. This effect translates into the rest of the yield curve but in various ways, because the rest of the yield curve depends partly on what investors think is going to happen in the future with respect to inflation and with respect to real growth in the economy.

But generally speaking, the policy rate is highly correlated with interest rate movements across the whole curve and therefore to all other interest rates associated with other types of instruments. And so it does have a lot of influence even if you think, "Gosh, I don't actually trade at this rate here." There's a blue line. That doesn't have anything to do with me, but the general level of rates is highly correlated with the blue line here. So I think it does have a lot of connections and there's been a lot of academic work on exactly that issue. Please.

Speaker 6:

Hi there. Thanks for coming and presenting-

James Bullard:

Sure.

Speaker 6:

... to us today. The vacancies per unemployment chart that you showed before, that version there, how do you see that working itself out?

James Bullard:

Yeah. Gosh, so many charts there.

Speaker 6:

There it is.

James Bullard:

You guys must have been bored silly with all these charts. I think this seems too high to be sustainable. But when I talk to people anecdotally about their businesses, it seems very consistent. They're pretty much still scrambling for workers.

I think a couple things are happening here. You've got this structural shortage maybe of workers that, as I was talking about earlier. So firms are going to substitute capital for labor because they can't get the workers, or they're just not going to open some of the stores and things that they would've otherwise opened. You're seeing that we have been seeing that over the last year or more where maybe they have the restaurant only open three days a week instead of seven days a week or something like that. You're seeing a lot of that.

In a way, I think it's great management. Managers are not sitting around. They're thinking about how they can have profit, maximizing strategies even with a shortage of workers. But you will see more substitution of capital for labor. They're probably one of the things that happens in businesses is that they have plans sitting on the shelf that they never got around to, but now they take the plans off the shelf to set up. And maybe it's time to buy the machines that they've been delaying buying or whatever. So I think we'll see some of that.

Speaker 6:

Thank you.

Speaker 7:

Hey, Jim. How do you see housing working out as rates have killed the demand for the market, but it hasn't helped the prices. And rent equivalent and home prices make up roughly 40% of CPI? How do you see that working out?

James Bullard:

Yeah. So I think on the CPI and the rents, we're certainly well aware of the lags in the data there, and we've got new techniques to think about that. You've got this owner-implied rent, also part of the calculation. We know how that works and we can look at that. I think the housing market itself is very interest-sensitive, hit very hard during 2022. Not surprising. However, housing market also had banner years in 2020 and 2021. It surprised us, surprised me anyway, that the pandemic, instead of causing a recession that fed into the housing market, instead you got this very strong demand for housing because of the pandemic. People wanted more space. They wanted more solitude. They could move farther from work because of the work-from-home policy. These factors drove prices up.

I think that demand effect is still there. I would say on the interest rates, I think there were a lot of people that were in the market, let's say, in the first half of first few months of 2022. And they were

thinking that they could get a certain amount of square footage, and they'd be able to buy this house or that house. And the prices went up on them and the interest rates went up very quickly, and then they couldn't afford that anymore. So that's a mental adjustment on the buyer's side that has to be made. They're not going to be able to afford as much square footage at these prices and at these interest rates. That's an adjustment for those that are, the couples probably mostly that are in the market for housing.

But on the other hand, these are not historically high interest rates for housing. And so once that mental adjustment gets made, I think you'll see the housing market return to normal at the higher level of interest rates. So we'll see if that's how this plays out. But we're of course watching housing very closely because as you say, it's a big factor.

Speaker 8:

As a hypothetical question, come summer or fall, if you think what 2023 inflation will end around three and a half of the year, what would you do if you were the sole decision maker as far as the policy?

James Bullard:

What will we do if?

Speaker 8:

You were the sole decision maker as far as Fed policy is concerned?

James Bullard:

If it ends up at three and a half?

Speaker 8:

For the year, yeah.

James Bullard:

For the year? Yeah. I think, I guess my general feeling is that markets think that inflation's going to come down very quickly. And I think a more prudent forecast is that probably especially core inflation, Dallas Fed trimmed mean inflation will not come down that fast. But you'll be on the right trajectory and you'll be going toward 2%. But it does mean rates have to be higher for longer in order to maintain the downward pressure on inflation, get it to converge to 2%. So if you look at the 1990s, you had a whole decade of interest rates are much higher than what we've been used to in the last 15 years, and the economy seemed to function well. The economy boomed in fact in the second half of the 1990s with much higher interest rates than what we've seen today. So I think all of this can be done. But in order to get inflation to actually converge to 2%, you'll probably have to be higher for longer.

Speaker 9:

Hi. Yeah, I just want to ask about, we haven't touched really on quantitative easing. Obviously you guys really expanded the balance sheet, Fed's balance sheet, over the years and I know you've started the quantitative tightening. I want to just ask how's that going? Could you comment on that? Do you guys feel like it's on the right track? And just comment on quantitative tightening in the Fed's balance sheet.

James Bullard:

Yeah. I didn't have anything in this particular deck. I have talked about it elsewhere, but I was very pleased that we were able to get the reduction in the size of the balance sheet going in the second quarter of 2022, part of our kickoff to a more restrictive policy. And I think it has worked well so far. It was phased in during the summer, so it didn't really reach full strength until maybe September or so. But it's continuing a pace, I think at least another six months or even a year of this policy running in the background. And then we'll have a chance to assess maybe later this year how we're doing and what we want to do.

But I do think that is something to keep in mind about this picture here about the level of the policy rate, because we have successfully got all of you to thank in terms of mostly of the policy rate as the Fed's policy. But this is being supplemented by the balance sheet policy that is also going on. And it's not just the Fed, it's other central banks around the world. So that's a factor as well. How much weight you want to put on that as a tighter monetary policy is a good question. But so far, so good on our balance sheet reduction. And the balance sheet expanded dramatically during the pandemic. So I think we still got some ways to go to get it back to a norm, more normal level.

Speaker 10:

We know where the forecasts were at this time last year and what happened, and your colleague in Minneapolis said even if you gave the model the shocks that happened, it still wouldn't have come up with 7%. So what tools are changing or evolving or newly being incorporated that weren't being used this time last year as this year has progressed?

James Bullard:

Yeah. Let me talk about this issue that models wouldn't predict the amount of inflation that we got. So the inflation picture is this one here.

This pushed headline inflation up to 7% on a 12-month basis, and it's just a shocking amount of inflation for the US economy. What happened? You could just say, "Oh, gigantic shocks." And certainly the pandemic was a big shock. It's like a big earthquake. But I want you to think about it maybe a little bit differently, which is like a war. So if you think of World War I and World War II, and then think of the pandemic as being a war, it's not literally a war like that, but it's a social crisis on a global scale. And what happens during a social crisis on a global scale is that the fiscal authority starts spending a lot of money without asking too many questions about where the taxes are going to come from in the future. And the monetary authority is expected to keep interest rates low to support the war effort.

And if you look at wars across history, all kinds of places, different places and times, totally different situations, they're often associated with inflation, certainly for the losers in the war, but also for the winners in the war. And there was inflation after World War I and after World War II in the US. So the pandemic was like that. You had the pandemic come along. We said we're going to do a lot to try to protect the economy while we're trying to wrestle with the health situation. And we said also, the spirit of the times was to say we're going to overdo it. We're not going to underdo it. We're going to overdo it. And indeed, we probably did more than we had to, but that was part of the calculus, and we ended up with some inflation afterwards.

Now you say, "So that gets you to the 7% here in this picture. How do you get inflation under control?" Well, when the war comes to a close, fiscal authority quits spending and goes back to its pre-war spending patterns. I think that's going to happen with divided government in Washington. And monetary authority is no longer required to keep interest rates low to support the war effort, but instead can go back to ordinary monetary policy. That's certainly happening with our aggressive rate

increases in 2022. So because of this, I think the prospects are actually good. The inflation will come down in this picture down to the 2% target.

That whole war story isn't part of most models of inflation. If you just have a model of inflation over the last 20 years, the model is like, "What? This can never happen." But if you tell the war story, then you have a coherent explanation about what happened and why and how it's going to be corrected post as the pandemic continues to fade here and how we're going to get back to 2%. So I think that's a way to think about what's going on. So more than you wanted on.

Speaker 11:

Quick question on labor rates. So you have open jobs, you have jobs filled. Are you considering, are you tracking the swap from full-time to contract?

James Bullard:

As far as how do we count?

Speaker 11:

Yeah.

James Bullard:

They get counted. Contractors get counted.

Speaker 11:

Yeah. Are those inside of your available job market or is that tracked separately?

James Bullard:

That's going to come as a job. Now, one thing is a multiple job holders.

Speaker 11:

Yeah.

James Bullard:

Yeah. So you do hear some stories about remote workers working multiple jobs, but actually multiple job holders is a common phenomenon. You have people who might work a job and then also take another job. That's not uncommon in the economy. And exactly how that's accounted for in that figure, I actually can't say off the top of my head. I'm not that sure, but that would be a factor. Yeah.

Speaker 11:

I'd be particularly interested to know what the rate of swap from full-time employed to contract would be.

James Bullard:

Yeah, no. I think it's an interesting question for sure.

Speaker 11:

Thanks.

Speaker 12:

Could you talk about wage inflation and then just the productivity? I know you touched on it a bit, but you mentioned supply and demand for labor, but how productive has it been? And isn't that a big headwind as well?

James Bullard:

Yeah. One of the mysteries about this picture which is way back at the beginning here, this picture, GDP growth in the first half of 2022. According to the data, this is the worst productivity that we ever had in the US for forever. It's just terrible productivity numbers. And I thought maybe the GDP would get revised up or that you could tell a story about gross domestic income versus gross domestic product, but that seems not to be happening so much. So whether it's really true that productivity declined dramatically in the first half of 2020, I think is a great question and one that I'll probably be wrestled with for some time to come.

But overall, it still appears that we're in our low productivity regime, which means that productivity growth looks like it's still, even with all the volatility and the data, looks like it's still only growing about 1.3% or even less per year. We did in the recent past, in 1995 to 2005, have a high productivity growth regime in which productivity grew at a 3% rate. And that would help us dramatically if we could get the productivity to increase to that level. So maybe the new machines that people are buying and combining those with the workers will make everybody a lot more productive. I hope that happens going forward, but productivity's a bit of a puzzle at this point.

I think I'm going to have to bring this to a close, so thanks for everyone. Great to be here. Always fun to be here.