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THE FED:
LESSONS LEARNED FROM THE PAST THREE YEARS

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PAPER PRESENTATION

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DISCUSSANT RESPONSE:

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DISCUSSANT RESPONSE:

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DAVID WESSEL: Good morning and welcome. I'm David Wessel, director of the Hutchins Center on Fiscal and Monetary Policy here at Brookings. Thank you for joining us for today's event. The Fed what lessons have been learned or should they learn for the past three years? The mission of the Hutchins Center is to improve the quality and efficacy of fiscal and monetary policy and public understanding of it. And I think what we're doing today fits into all parts of that mission. The past three years have been very unusual. A global pandemic, the likes of which we hadn't seen in a century. A consumer price index, which peaked at 9% year over year. The Russian invasion of Ukraine. A new Fed framework. And we think that the Federal Reserve needs to hear from outsiders about what it should know and what it should learn, and particularly what it should do in the future so that it can do a better job at managing these difficult situations. Now, let me say a word about why we have this particular cast. I've gotten some criticism that there's nobody here who hates the Fed, and that's true. There are people who question the Fed's mandate, question its governance, even question the wisdom and background of its top policymakers. And those are conversations worth having. But that's not the conversation we're having here today. We have an unusually good mix of economists who embrace the Fed's mission. Stable prices and maximum sustainable employment are people who have substantial experience as policymakers and scholars who are well positioned to offer reflections and constructive criticisms of the Fed's monetary policy and its framework over the past three years. So that's what we're doing here today, and we're honored to have our own Ben Bernanke and Olivier Blanchard from the Peterson Institute across the street. We're going to speak about first about their views on why we had so much more inflation than some people, although not everybody anticipated. And then we have two discussants. Rich Clarida, who was vice chair of the Fed, and Jason Furman from Harvard, former chair of the Council of Economic Advisors. Then my colleague Louise Sheiner will join them up here and we'll have a discussion of the questions that are raised or the ones that Luis will make sure that she raises the questions that they ignored in their paper. And then our second paper is by Gauti Eggertsson of Brown and Don Kohn of Brookings, former vice chair of the Fed, which looks closely at what the Fed's framework changes mean and what its monetary policy tools, particularly forward guidance, how they contributed to the inflation problem we have. And then after that, Ellen Meade, who was involved in the framework, will give some discussion remarks, and then we'll have a panel up here to discuss what questions the Fed should have on its agenda when it when it reexamines the framework as it's promised to do in 2025. So we have a very full day. I thank you all for coming. All the papers and all the slides are posted on our website and the video will be there as well. So with that, I'd like to call Olivier to the stage to make the initial presentation of the Blanchard Bernanke paper.

OLIVER BLANCHARD: I see. Thank you. So this is indeed a paper with Ben. The division of labor is, I presume, the paper. And then we'll address most of the questions after that. Do I have to direct this to something? Thank you. Good. So let me start with the theme of the paper. Go back to the end of 2020 or the beginning of 2021. And there were there was a large number of very large fiscal packages. So there was the CARES Act in March of 20. Then the COVID package by Trump in December, and then under the Biden administration, the American rescue plan and decided to take more than 5 trillion, this would very big. And there were two views at the time. They they focused on the labor market as what the where the action might might be there with the optimists. And I think this was the view of the people at the Fed. And they conclude they had concluded that the Phillips curve was very flat. So even overheating would not be too much inflation and expectations had become very strongly anchored so that there would be very large second round effects and so on. There were pessimists and I would put myself that. I would put Larry Summers as well, and maybe Jason as well. The idea was, yes, this is how things have been over the last 20 years. But given the size of the shock, the Phillips curve may well steepen very much as you get to very low unemployment and expectations may well the anchor, if inflation is really taking off, the outcome turned out to be neither. So there was inflation. So the pessimists were right. But the channel that for which inflation on demand affected inflation was not so much for labor market, which we had very much focused on. It was the goods market. It's where the action really took place. Commodity prices went up a lot. There were shortages, price spikes and most of the action came from there. So we got the inflation, but not for the labor market, but the food goods market, which I think is a general lesson to be learned. So what we've experienced in the last three years is headline inflation has been nearly completely dominated by price shocks. One quarter of the large change in the energy price in the next quarter, its food price or price spikes and so on. But and this is what we see and this is what is discussed every month when when the CPI comes out. But behind the scene, you have had what we think is fairly steady overheating after the COVID period, which has put pressure on wages. And that's very hard to see when the rest moves a lot. But as price shocks

tend to fade, and I think the assumption is that they will then what appears and was not visible before is this higher wage inflation, which is due to another heated labor market. And so this anchoring of expectations so that looking forward, we're going to be dealing with a very different type of inflation in which it's really the labor market again, which becomes the central issue and we will probably have to slow down the economy. That's very much the theme of of of the paper. Okay. The approach that that we have taken has three steps. So the first one is we constructed a really simple analytical model to basically think about the mechanisms for which place shocks or overheating a labor market will affect inflation. So for those of you who have come to Brookings Papers meetings for many years, this is very familiar. And basically you can read an old paper by Tobin and deliver saying it has a wage equation which captures the effect of what happens in the labor market on wages. It has a price equation which reflects what wages are doing and other costs are doing, and then it has expectations of inflation. And we think it's important to separate between short on expectations, what you expect to happen next year and long run expectations, which is what you expect to see in ten years. So the first thing I'm going to do is basically show you the model quickly and then show you two of the implications, which I think are absolutely central. Then the second part of the paper is we estimate that more on the pre-COVID sample. So we say up to from 1990 to 2019, that's estimated with the equations. And we use we play, which I think is it is a good game, which is we use the structure of the theoretical model, the analytical more. We just allow for more lags because it's clear that the dynamics in the real world are more complex, but we don't play around trying different specifications. So I'm fairly convinced about the robustness of what I'm going to say, which is a relevant dimension. And then what we find is that given the state of the labor market, which I think has given the fact that there has been overheating and that there has been price shocks, then the pre-COVID equations work well. It's not as if suddenly the world became completely different. The shocks were different, but the structure of the analytical structure basically explains very well what has happened. One more conclusion, which I did not expect is we don't find the encoding of expectations or the minor, the anchoring of expectations that explain what this means. And we were worried about catch up, which is the notion when then the price shocks, the real wage tends to decrease. And the question is how much do the workers try to get back the real wage when they have lost the real wage loss? And we find very, very little effect of this, which is clearly good news, maybe not for workers, but good for inflation. Now, at the end, this will be the last part that we show the implications of young people more and we show the effect of the different shocks. What happens if there is a price of energy shock or what happens if the labor market overheats? And then we give you a decomposition of the history of inflation of the last four years. And then we are very tentatively, because this is not the purpose of the paper. Looking forward, suppose the price shocks go away. What can we expect inflation to do And that's that will focus is then again on the state of the labor market and how much more tightening is needed in order to get inflation from fall to, say, 2% if this is what target. Okay, so this is the mall, and some of you are probably allergic to algebra, but I think I can give you a sense of of the equations. And if you look at them, they'll they'll be simple. Wage inflation depends on expected price inflation as you try to basically maintain your will wage Looking forward, it depends on the state of the labor market. It is valuable x I shall say more about x. You can think of it at this stage as unemployment or the vacancy unemployment ratio. And then there's an additional term, which is the term in the middle in the first equation, which is a catch up effect, which is that. If the price level increase much more than you expected you will wage has decreased. How much of this are you going to try to get back when there was indexation in the old days, this would happen more or less automatically, but now it is not. And the question is do workers try to basically get a wage that they had before rather than the low real wage? That's the equation. That's the one we're going to estimate. The other questions are pretty straightforward. We think of of of the price. All these are logs. Obviously, for those of you who look at the equations, inflation, price inflation depends on wage inflation and on the collective price of the non-Labor inputs. So if the price of energy goes up relative to the wage, then it leads to a burst off of inflation. Completely traditional. We have a variable that I'll talk about, which is that we have clearly commodity prices such as energy and food. But, you know, one of the stories of of this episode is the shortages and the price spikes. So we have a shortage variable, which would not have been that, you know, before 2019. Then we have two equations for expectations which basically say short term and expectations depend on long on expectations, what you think it's anchored to and past inflation. So if the inflation is higher, you adjust above and then the long run expectation is again the same. It depends on itself flagged. And if you see that inflation has been higher, you may adjust your long run expectation a little bit. We'd expect the effect to be small but not non-zero. Okay, So let me give you two slides which show simulations of the model which are going to be very important in thinking about what happens in the data. So this is the effect of a one time permanent increase in the price of energy. So it's high energy inflation growth for one quarter, right? It's a change in the

level and therefore in the growth rate. It's a one time the increase in the growth rate of the price. And initially, clearly this increases prices or decreases inflation. Okay. But then what happens over time depends on two characteristics of the economy and of the model. The first one is how much do expectations adjust relative to this? When people see high inflation, how does this change the way they think about coming inflation and ketchup, which is that if there has been a shock like this commercially, do they want and I give you to the loci, the first one, the blue one, is expectations don't react very much like ketchup is weak. So the effect goes away nearly right away. You see it in the quarter in which it happens. But after this, it's nearly gone, not completely gone. You can see that you don't quite go to zero because expectations have moved a little bit. The red line is the best case. Catch up is strong expectations. We strongly so you get strong second round effects. And because this affects expectations, you end up with higher inflation in the long run. So keep this in mind and you'll see the data in a while and compare. This is the effect of permanent tightening of labor market. So again, think of access low unemployment or high vacancy on employment ratio. And then again you're going to get the direct effect, which is if a labor market is very tight, you're going to get pressure on wages, which is going to lead to pressure on prices. That's the standard textbook. But it can be strong or it can be weak as long as X is too high relative to its normal value. So as long as an unemployment is below, you start to use the usual jargon. Then there's going to be pressure on inflation. So in that case, inflation keeps increasing. But the way it increases depends again, very much on the dynamics of expectations. If expectations react very much, you get inflation to increase faster and faster. This is really the acceleration is the hypothesis of the old days, and that's well known. But if expectations are quote, you get some increase in inflation, but it's less and you can see that's the blue line here. Good. So this was part one. Now we go to the data and let me just say a few things about what we do. So we estimate the four equations exactly as we have seen them. So not all the variables are not in all the equations or variables which were employed by them. All We allow for you, we use quarterly data, we allow for full lags of all the included valuables. We don't play with flags at all. So it's a bit in the spirit to the VR, but with zeros where we think that some valuables don't belong. The ID, if you want to think in terms of a VR, is that the main assumption is we assume that wage inflation doing one quarter does not respond to anything within the quarter. So this allows us to basically get an identified system. The sample, we didn't want to go back to 1980 or 1970 because things were different. We started 1990 with inflation is relatively stable and so the sample is 1990 to 2019 phase one equation where we cannot do what I said, which is stop in 2019 because the price equation shortages play a big role. There was no shortage basically before that. So if you only use the pre 2019 sample, you don't see anything. So for the price equation, we use a full sample of the variables that you know, you know, go through them. We do a lot of robustness. For example, we do it with a CPI, we do it with a PC for the price and expectations we choose the Cleveland Fed officers or professional forecasters. The two things I want to mention is this shortage valuable? So we know that there were a number of markets where, you know, you couldn't get the goods in the paper. We had the discussion of the automobile sector. Whether we can really tell the story in detail. The question is how to capture this. We found that the viable shortage when you go to Google Trends. Works marvelously in the sense that there are two quarters in the history of the last four years where without it you get the large forecast here. And if you basically these are two quarters where people went to the net and said shortage, shortage. And so we use that valuable and it beats actually many of the variables which have been proposed. That that's the variable we use. Footnote. It actually has come down from the peaks. It is very far from zero. And so it indicates that people are still wary about shortages and the other good and the other valuable for the labor market. And there's a long discussion in the paper, which I will not go back to, is instead of using unemployment, we use a vacancy on employment ratio. And that's something that I've argued for in a long time with Peter Diamond that until now the two variables varied, more highly correlated. You couldn't tell. But in this crisis they have separated. This is what's known as the shift in the Beveridge curve. And we think that, you know, the issue is the right variable. Okay, so let me now move. Very quickly. So what this shows is basically the results of the regressions and given the time. I'm just going to ask you to look at the visuals. So what this does, for example, for the wage equation, it uses estimating equation up to 2019 and then use this to predict what has happened since using the actual values of. The other, you and so on. Right. So as you can see from the way it kind of works, and if we had time, I would talk about the coefficients, but I don't for the price equation. Again, that's more in sample than extrapolation, but you can see that it works amazingly well by the standards of that type of exercise. And then look. So let me now take. An issue which is very important, which is, as you have argued, headline inflation is completely dominated by the price of energy, the price of food and shortages. Now. Where do these come from? Is a big issue. And there are two stories. One is well, just happened coincidentally or the other, which I tend to believe is that it came largely from aggregate

demand. Just go through usual channel, but it basically put pressure on commodity prices and so on. So what we did, and I think that's an important part of the exercise, we said let's look at commodity markets in general. So let's take all the commodity prices that we can put our hands on. It's reasonable, I think, to think that on the demand side, these are common element, which is that it's higher demand, is higher demand for all commodities. On the supply side, it is more likely that the supply shocks in each market are more idiosyncratic. You know, there's a mine for lithium, which is opened always upon with copper. So if you assume that, then the common element of all these series is something that can get great demand. And so that's what we do. We do a principal component. And what you get is this overhead line is the sorry, the blue line is the principal component, and the red line is in the top price of energy and in the bottom the price of food. And you can see that until the Ukraine episode, the blue and the red line are very similar. So my sense is much of the price movement comes from from from aggregate demand. So I get get demand in the end, didn't work so much for the labor market, but it works for the goods market. Let me.

DAVID WESSEL: Keep going.

OLIVIER BLANCHARD: These are the regressions for expectations and again, very good fit. I think what's important here is that, yes, both short run and longer and expectations respond to actual inflation, but the coefficients are very small. So let me move. I'm going to redo the two exercises that I showed you in the theoretical model. So this is the impulse responses of inflation to one standard deviation in one of the price shocks. So a one time increase in the price of energy. And the point I want to make as we produced the theoretical one on the top is basically that they don't last. So this idea, basically there hasn't been second wave effect. There are these big shocks every quarter, but they more or less disappear in terms of their effect on inflation for next quarter. It could have been different and maybe it's different in Europe, for example, but that's what we thought. By contrast, if you sustain to high vacancy on employment ratio, then you get, you know, something which doesn't go away and builds up. And so again, you have very high frequency shocks. And the thing behind so when we go to more slides, so this is a decomposition of price inflation. Since the first quarter of 2020. Look at the colors. And basically what seems to dominate, as you can see, is blue and yellow. Right. And blue and yellow obviously keep a price shocks. It's price of energy, price of food, it's shortages. And you can see from quarter to quarter, that's most of the action. But what you see also is the small red spot. The small red part is the result of overheating in the labor market. And it's not big, right? This trade effect just for the labor market is small. And the question is when the price shocks go away, then basically the yellow and the blue will disappear and you'll be stuck with the red, which doesn't look very big, but may actually be fairly hard to get rid of. Now, this is the same for wages. Now you can see that for wages, what dominates is view of you much more. The effect of price shocks is only for their effect on expectations. They don't affect wages directly. Okay, I'll slide and then the conclusion slide. I hope I'm still more or less on time. Okay. So we did something that we've very reluctant to do because we know of a journalist in the room are going to look at this thing much too closely. We decided that we could not stop and not think about, okay, what happens if So these are conditional projections, but they are in no way specific forecasts. Remember them always estimated up to 2019. It hasn't been optimized to have the best forecast. Price shocks may not be zero. So you know that of all the caveats, I can talk about what happens here, because I think that's the important part. So what this does is it looks at. Eight, three different parts in which we do something to value. So the first one, the brown one, is we keep it at the current value, which is 1.8. Right. Which we think is overheating. Right. The second one, we get it down over eight quarters to 1.2, which we think is probably close to the natural vacancy unemployment rate. And then the green one, we take it down in eight quarters, 2.8, which is the slightly depressed labor market in that sense. And the conclusion is that it may take quite a bit of a decrease in value to actually achieve anything close to a 2% target two years from now. And, you know, we don't want to push this too much. But again, now the Phillips curve is very flat and therefore what we have to give it, but we have to remove may require quite a bit of contraction. So let me finish with four conclusions. The first one is, you know, there's been a lot of articles in the press about the fact that the Phillips curve has died. We have to rethink macro macroeconomics. No, nothing. And so on and so on. I don't think so. I mean, it looks like, you know, what we showed you is a fairly standard model and we applied it to the data and it worked. No, I think you really have to think in terms of both wages and prices. I think the reduced form price approach that many take is not right. There is really action in both. Good. Okay. The second is the obvious one, which is the complexity of the shocks. And we didn't predict them. We didn't think that commodity prices would increase as much. It took us a while to understand the effect of shortages and price spikes and so on. I think looking forward to more episodes in

the future, we have to be much more open to the fact that the more action, potentially more action, the goods market. The third point and yeah, I'm going to repeat things I've said along the way for price shocks in the goods market really have dominated the high frequency discussion. But this is but they haven't had that strong dynamic effects. And I think that we have to give credit to the Fed for credibility, which is that expectations react to inflation. But they didn't react to inflation more in this episode than they have in the last 20 years. So credibility is there. And then the last one, which I also mentioned, but to be repeated, is overheating in the labor market for until recently was a minor factor in inflation. Right. But now that the rest is gone, this is what dominates and this is where it's going to be hard to adjust. One last remark. There's a whole other discussion, which is, okay, so we have two degrees view of you. What does this imply for you? Because you were valuable that you know, people think about. And that's the discussion that. This has happened between my summers and I on one side and Alex Thomas and on the other side, Chris Walla. And it's a question about what has happened to the Beveridge curve where it has shifted, which is a shift in the relation between you and the EU. If it has shifted and it remains shifted, what we see is bad news for unemployment. If Chris Walla is right and there was a shift and the shift is going to be completely undone. Then we need slightly high unemployment. But it's not crazy. Maybe 1% rather than some larger numbers at this stage. I will be honest. Chris Walla doing better than the brush off some of his team. But we shall see. I hope very much he's right for the welfare of the unemployed. But we'll see. Thank you very much.

JASON FURMAN: Great. Well, this is a wonderful paper. It's incredibly elegant. It shows how much you can do with a model that I can understand. It uses models, estimation, etc., that harken back to a number of papers I'd read from Ben and Olivier back in as early as graduate school. I'm largely in agreement with the conclusion and the path forward. If I had 20 minutes for my comments, I would continue on for ten more with my praise. But I only have 10 minutes for my comments and want to describe some of the ways in which I think the paper doesn't settle. One of the biggest debates and how I would interpret some aspects of it differently than they do, and I think the issue is that the exhaustion is shocks in the model. Food, energy shortages, as the authors well understand, productivity as well are all endogenous. And so you're really looking at changes in endogenous things and that none of them map exactly to what happened in terms of policy. I think the fundamental debate between the optimists and the pessimists wasn't the slope of the Phillips curve and would you get inflation through the labor market. But it was a broader debate. On the one side was the series of unfortunate events view that basically the model was correct, but the inflation happened because who could have forecast a whole set of unfortunate events? Now, those unfortunate events started out with the vaccines being effective, which in the first half of 2021 was the reason for inflation. In the second half of 2021, the unfortunate event was the vaccines were ineffective, which also caused higher inflation, the microchip shortages, the port clogged, the Russian invasion, etc. These are all things no forecaster could have known about their exogenous shocks. On the other side is the original sin view that all of this was due to fiscal and monetary policy. And fiscal and monetary policy don't just need to operate through the labor market. They can operate through a number of these other channels as well, like shortages broadly. My own guess coming into this paper and my own view coming out of this paper is that an orange line core PC inflation has been about 5% annual rate, that most of that was original sin. It was predictable. You just couldn't think the whole inflation was going to operate through the labor market. There'd be other channels for demand and that most of the excess of headline over core was an unfortunate accident, which was the Russian invasion of Ukraine, with very little of that bleeding into core. So let me take that second part first. I'm going to talk about core inflation, the limited food energy pass through where the shortages due to the peloton economy. And then talk about an alternative way of thinking about things. Olivier showed you this decomposition and you see in the dark blue and the light blue, you get the food and energy. And this is for overall inflation. There's something really striking about this finding that they don't dry out in their paper, which is that these contributions from their model, the food and energy contributions, are exactly the same as the bills contribution of food and energy to overall inflation almost exactly the same. So these are two pairs of bars. The left bar is their shock, and it's how much food and energy contribute to overall inflation based on the model. And then on the right hand side, it's just literally mechanically, if food went up 10%, that's 10% of overall inflation. It adds one percentage point to inflation. That's what the BLS publishes every month. And the sum of them are those diamonds. The dark diamond is what they estimate. The Harlow one is what the BLS does. The fact that those are basically the same is consistent with there being essentially zero pass through from food and energy to core, not just a ticker, not just with a lag, but contemporaneously as well. I think that's quite important because there's been a lot of discussion about the past year. I think that's broadly consistent with a lot of research, by the way, that says when gasoline prices

go up, airfares go up, but people can't afford to buy as much, other things go down. And some previous papers have even found small negative pass through from oil price increases to core. So they don't look at core in their paper. This is sort of rough. It's not going to be exactly right. It has a residual for some of the error, but it looks at the excess of inflation, inflation, CPI. Above 2.3, which is the Fed's target, give or take, measured in that space. And you see shortages play a really big role in 2021, a sizable role in 2022, and some role in 2023. I don't have time to talk about it, but initial conditions, as in a productivity, I'm quite worried that that's endogenous and not telling us something external, but that's a discussion for another time. Let's look harder at shortages. The shortage story generally has two pieces. One is a set of supply chain problems made it harder to produce things largely around microchips, sometimes around ports. Not going to talk very much about that. I think that's been pretty dramatically overstated. For example, port capacity in 2021 was 18% above what it was in 2019. That was a huge increase in what ports were processing. It just wasn't as huge as all the stuff Americans wanted to buy from abroad. What I want to do, though, is talk about the consumer side, which the paper talks about in interpreting its shortage shock and give you an alternative interpretation on the Peloton economy thesis, not their term. I'm not sure who first came up with it. I've heard both Justin Wolfers and Paul Krugman. Yes, it is that COVID caused people to shift spending from services to goods and that this rotation was inflationary because the supply of goods is more inelastic. I'm really deeply unsure about the first part of this argument, and I'm somewhat unsure about the second two. So let's look at consumption spending on sporting goods and gyms. This is recreational goods, vehicles, sporting clothing, supplies, guns and ammunition. You can't break it down any finer than that. And you do see a big increase in spending on this. But note the big increases are when people get their checks and those increases are happening in the first half of 2021. As the economy is reopening, COVID is coming down, people are going back. What were people doing on the services side over the same period of time? This is spending on membership, clubs and participant sports centers. Those were rising quite sharply, too. And so what we saw in 2021 looks a lot less like COVID is keeping people home. So they have to order peloton's rather than pay gym memberships and looks a lot more like people are flush with cash. The economy is reopening. They're spending a bunch of that cash on durable goods and a bunch of non durables. And in fact, the 28 stimulus checks, Jonathan, of this research finds the majority of that money was spent on durables. You give people a large lump sum. What do they do? They try to buy a used car. You see similar things in, you know, personal care services and personal care products and overall. Moreover, the idea that the U.S. spending on goods and rotation from goods to services was exaggerate ously caused by COVID is belied by a comparison to other G7 economies. This is real durable goods expenditures in the United States. They just go up enormously. They go up 10% in the first half of 2021. Everywhere else, they were flat or in Germany, they even went down quite a lot. And what's notable is most of those other economies were much slower to reopen. They had higher COVID, slower vaccination, more rules that prevented people from consuming services. So if anything, the exhaustion as it's COVID that led to the goods as opposed to you give people a lot of money and what do they spend money on? They spend it on goods. That should apply even more to the other economies there. So I think the shortages, at least on the demand side, really were a predictable consequence of the cash, not the COVID. The second part. And frankly, I'm less sure about this and it actually doesn't matter to my overall argument is the authors and interpreting the shortage term have a model like this, which is durable goods goes up because people are spending more on durables. They can't afford to buy as many services and the services demand shifts back. But because you have this nonlinearity, you get inflation from one higher prices. On the good side, you don't get lower prices on the services side. I think that's not necessarily where we were. I think where we were might have looked more like this, where services demand would have increased a lot. But because goods were so expensive, because of the shortages in the like, services demand only increased a little. The service sector also had huge numbers of job openings, huge amounts of there wasn't a lot of elasticity when I went out to restaurants in terms of how many people they could serve and the like. And so you're on the vertical part of the supply curve in the service sector too. And so that rotation, as people spent more on goods, less on services, may not have mattered. So let me talk about what I think the pessimists thought from the beginning, which based on this overly polemical, unfair, linear policy analysis, give every household \$1,000,000. It's 514% of GDP and fiscal stimulus, the multiplier 0.8. So GDP goes up 412%. The unemployment rate falls to zero. Phillips curve has a slope of 0.15. Inflation rises to 2.6. To be clear, this is not their model. Their model has a V overuse, so it has a non linearity. But I think this was the type of model that people were operating with. Then when we saw real GDP growth, only a little above baseline and massive inflation, you come along and run your regression and lo and behold, what do you find? The model was completely right. It was the right way to think about it. But there was a shortage shock because there are shortages everywhere throughout the economy. And so I

think in this title of the slide, it's unfair. Olivier convinced me of that. So I'm going to change it later that in the labor market they're doing monetary fiscal to real GDP, to the labor market. The first steps are happening in the background and that to inflation through the Phillips curve, I think a better way to capture the concern the pessimists had. The original sin view was that if you get a lot of nominal GDP and you can't make a lot of real GDP, what are you going to get? You're going to get things through the labor market. You're going to get shortages, you're going to get higher food prices, you're going to higher energy prices, etc.. And broadly, when you look at the experience, real GDP did quite well. You don't see a lot of supply shocks in real GDP. The fact that it got back to the pre-crisis forecast by the end of 2021 is amazing. Million premature deaths, people out of the labor force, less immigration, all the disruption COVID still with us on Macron hitting and you're back there. So in some sense the real economy did incredibly well. It's just so much money was pumped into it. Nominal GDP went up a lot and that showed up in all the different error terms in their model in terms of inflation being well above what was forecast. So in summary, in conclusion, I think it's a really elegant paper. I think it's a very good way to think about inflation in normal times. I think it doesn't answer the series of unfortunate events versus original sin question. I think it finds that food and energy do not explain any of core inflation, and I agree with that finding. The shortages are just as consistent with demand increases. I think that's a more compelling interpretation of them than anything caused by COVID or caused by supply. I think for large shocks, you almost want to ignore the labor market. You know, the inflation will show up somewhere, even if you don't know quite where and how. And regardless, I do agree with the authors about what I think their conclusion is. The improbability of a soft landing. It 2.0% inflation. Thank you.

RICHARD CLARIDA: Okay, Get the slides up. Just like that. Oh, just click it. Okay. Let's see if I can figure this out. Perfect. I'd like to thank the organizers for inviting me to participate in this conference. I'm sure I'll learn a lot. In my 12 minutes, I'm going to do three things. First, because I think this is going to be primarily a U.S. focused discussion. I want to broaden the discussion to include some context, global context for inflation and the policy response. Second, I will talk briefly about doing what I think of as rigorous counterfactuals to to lift off. And then thirdly, we'll actually discuss the paper, in part piggybacking off the fact that I knew Jason simply do a good job. So the first thing to emphasize, which you all know, but that oftentimes gets forgotten in discussions of Fed policy, is that a persistent, sustained surge in core price inflation is a distinctive and distressing result of the post-pandemic global economy. It could be a coincidence. I don't think so. So as an economist, one is encouraged to look for common factors. Well, one common factor is clearly a decline in post-pandemic aggregate supply. Consistent with our 2% inflation target, The left chart is from a recent excellent speech by Catherine Mann. The right chart is from a paper that John Williams previewed or premiered last week at a Fed conference. And so if you go back to Econ 101 or ten at Harvard, there's aggregate supply and aggregate demand. And aggregate supply is clearly an issue in terms of thinking about the level of demand consistent with a price inflation target. Secondly, and this would get to Jason's point, there was substantial fiscal and monetary policy support delivered during the first year of the pandemic in support of aggregate demand. And this is true whether or not you look at the fiscal policy response, whether or not you look at in the case of the Fed cutting rates to zero, offering for guidance or whether or not you look at balance sheet expansion. So I think there's actually more variation across countries in fiscal response than in monetary policy. Every central bank, at least I'm talking about advanced economies, did some version of cutting rates to zero or to the effect of lower bound, if they could, doing substantial quantitative easing and offering some form of forward guidance. So obviously, ex-post, this turned out to be too accommodative relative to post-pandemic aggregate supply. Getting back to Jason's comments, but according to observers, critics were ex-ante too accommodative, even relative to a pre-pandemic aggregate supply assumption. What I would point out is that in June of 2021, the Fed's S&P projections projected that in 2021, GDP growth would be at 7%. It came in at five seven, and this was not due to insufficient demand. Now, correlations are not causation Again, another thing we learned in ten, but if one wants to look for correlations in the data, there's much more of a correlation between cross-country physical intervention and cross-country inflation than there is between cross-country growth in the monetary base and inflation. And so I think that, at least to me, is worth thinking about as well. Again, expanding the domain of inquiry away from the Fed to what can we learn? We have an unusual situation where we have a truly exotic and a shock, which is a pandemic. We shut down. The global economy are chunks of the global economy. We also then had a reopening shock, which in itself was a shock given supply chains. And then we had an endogenous policy response to the first and the second. And so I think taking advantage of cross-country analysis at some point will be the preferred approach to thinking about this period as opposed to country by country analysis. Another common factor is a large and persistent change in sectoral relative

prices of goods versus services. Here, I'm not taking a stand on demand versus supply. If you just go to a basic equation for a price index, it's going to be some long linear average of services and goods prices. If the relative price of goods goes up for whatever reason, if the equilibrium price of goods goes up for whatever reason, then the overall price level will go up. Unless the central bank wants to engineer a decline in services prices. So in a sort of a standard model, if there's some nominal rigidity in the service sector, if there's an equilibrium increase in relative prices, the central bank has a choice. You either allow the relative price to go through and take a one time increase in the price level, or you raise rates and throw people out of work to reduce the price of services. And most central banks went for the accommodation, at least initially the relative price changes. Now there's a saying the facts are stubborn things and here are some facts about advanced economy, post-pandemic inflation and central bank policy response. Number one, inflation in advanced economies as well above inflation targets now entering the third year of the reopening. Number two, core inflation in advanced economies is well above inflation targets. Now, three years into the reopening, with the exception of Switzerland, I'll get to Switzerland in a minute. No advanced economy Central bank began to hike rates until inflation exceeded target. Almost all advanced economy central banks delayed rate hikes until core inflation exceeded target. So here's the list. Obviously in the US and Canada, core inflation was 4.4 at the time of the first rate hike in New Zealand, 2.7 in the euro zone, 3.7 in the UK, four and in Sweden, 4.1. So all these central banks at some level found themselves and clearly given the choice of policy, they chose to fall behind the curve. Why this happened obviously, is a very important and interesting question, but it says more about the practice of inflation targeting central banking in this period than it does about any particular implementation of a framework. There's a nice recent paper by Beaudry and coauthors looking at an analysis of why inflation targeting central banks delayed liftoff until core inflation exceeded target. So if the documented inflation overshoots and the choices to fall behind the curve represent framework failure in this episode, they represent, at least in this episode, failures of both IT and its first cousin in flux a flexible average inflation targeting. I don't think this is the case. I believe these exposed errors were errors of tactics, not of strategy. Tackling the judgments in the fog of war. And I'll get back to that more in a moment. Okay. Now a little bit on the Fed. I can do this in 5 minutes. Thank you. We all know that the Fed began to lift off in March of 2022. And given the inflation, overshoot and persistence, one is encouraged to think about counterfactual lift off for the Fed. You know, counterfactuals are both too easy and too hard. So to put some discipline on this process, I'll look at two plausible counterfactuals. One is that the Fed had just lifted off, according to a standard Taylor type rule. Remember the Taylor rule? If inflation's above target, you want to raise rates. But if unemployment's above your estimate of full employment, you want to depress rates. And in the case of the Fed, you really don't get a lift off under the balanced approach rule until the September 2021 Fed meeting. Now, this is a static rule. You know, central bank that had a good crystal ball and who saw the inflation obviously could have high. But just on a static Taylor rule, you would have gotten lift off in September. At the earlier table I showed you the. Average gap between when core inflation moved above two. And when the central bank began to hike is about six months. And so that would also put it in roughly September of 2021. Interestingly enough, the threshold for guidance the Fed put forward in September of 2020 to lift off. Namely, that inflation's at target and the labor market is, in the committee's judgment, at full employment. Those conditions were met by December of 2021, so three months after the conditions for a standard Taylor rule. And this just documents that those conditions were met by December 2021. So a couple of things before I actually get to discussing the paper. First is what's striking in these charts for for Dallas Fed trimmed means. So underlying inflation and the labor market is they both go hockey stick at exactly the same time, which is the third quarter of 2021. So up to that point, if you came into the year with the prior that there was slack in the economy, both through the labor market and an aggregate supply, there is nothing to really change you of that view until obviously things one hockey stick and in particular at the point that broad based price inflation picked up in the U.S., the level of GDP was still two percentage points below then estimates of potential. And of course, in the labor market, the unemployment rate was north of five and participation was below the one indicator. And again, we saw this in Olivier's paper in his work, the one indicator that was back to pre-pandemic levels was the vacancy unemployment ratio by the fall of 2021. So finally, some thoughts on the paper itself. As Jason pointed out, most of the inflation overshoot in 21 and early 22 was it is attributed to food, energy shortages and the residual. Maybe piggybacking a little bit off Jason's comments is the residual picking up excess demand not captured by the EU and some other variables. In particular the and theoretical models can reflect both supply and demand. So fast forward to today. The residual is now small and if you squint at the last bar and in Q1 2023, it looks like in this model what I would call underlying inflation is around 4% and that actually comports with other models that I look at. Statistical models of underlying inflation are all somewhere in the mid to high

threes right now. In terms of specification, I was reassured by the finding that during this period inflation expectations remained well anchored. That certainly is a policy success compared to the 1970s. One thing that's interesting about looking at long run inflation expectations data is in the last ten years or so, it's pretty mean reverting whether or not you look at Michigan surveys or other indicators, it's pretty mean reverting around a particular level. So given that they don't find a lot of pass through in the long run inflation expectations version of the model that essentially essentially reflects that could be an interesting alternative calculation. So thank you very much and I look forward to the discussion.

LOUISE SHEINER: Okay. Before you speak, everybody, just as a reminder to hit the little button here that looks like a microphone. So, first of all, thank you very much for the incredibly clear presentation and in clear, really wonderful discussant remarks. I thought those were fantastic. I'm going to basically give you a chance to respond, Ben, to the discussants. But let's just let's just start with the big question, which is, you know, what? How do you view this question about what your paper does or doesn't say about the effect of fiscal policy on inflation?

BEN S. BERNANKE: So let me first thank the discussants, Jason, as my go to guy for inflation information both at Peterson and on Twitter. And Rich, of course, was in the room, you know, when it was the decisions were made as Hamilton tells us. So I really value their views. I think that I'll respond mostly to Jason, since he's spent the most time on our paper. He sets up the the debate as being sort of fiscal monetary aggregate demand versus, you know, supply constraints. And that's not at all what we were trying to do. We think that demand was an important part of the story. What we did say is that the aggregate demand working through the labor market because of the Phillips curve is flat and because the output gaps were not that big, did not have a large effect on wages in the short term. That's that's that's the contrarian thing that we say. But we also talk explicitly about the effects of aggregate demand on commodity prices. We do this exercise with the principal component and also the effects on the demand for goods like cars that we're in short supply. So I just reject that. We do look at aggregate demand, albeit we don't develop all of the linkages, by the way, to ignore the supply constraints. We actually did research by calling GM and talking to the economists there. If you look at our figure six, you'll see that at the same time that prices were rising sharply in the auto industry and inventories were collapsing, production was going down. I mean, if it was a it was a demand side thing, you think production would at least stay the same or go up a little bit. So I do believe that there was a supply side constraint. What we were trying to do, I should say, was not to play ad against a yes we were trying to do is show that these different sources of inflation and there were multiple sources of inflation interact with each other. For example, higher gas prices coming from higher oil prices in turn might affect people's inflation expectations, which in turn might affect the wages that they ask their employers for, which in turn might affect the prices that the employers charge. And despite the comment about core inflation, I think if you look at it, I think, you know, we do find that energy and food prices did have a bigger effect than their share of the basket, both because they have some longer term effects on other goods and services, but because of these indirect effects going on, Jason gave a political polemical example of \$1,000,000 a person just for his future research. And this is a neutral comment. He ought to try a real example World War Two, where both the supply and demand of consumer goods went up tremendously. I mean, I'm sorry, the demand for consumer goods went up tremendously. Supply went down because the government was converting factories to to war production, rationing and so on, kept prices under control. But I think there's some there's some good case studies to look at that aren't quite so hypothetical. The last thing I want to say, and this has puzzled me, I've been following Jason's work for a long time, is this argument that the fact that nominal GDP went up while real output stayed the same is somehow proof that fiscal policy was important? I just don't see it. I'd like to see the model. I'd like to see the estimates. There's nothing. Think about your econ 1 to 1 book. And I know that Jason teaches that at Harvard. If the add curve and the S-curve are both moving up at the same pace, you get constant output and rising prices. There's no there's no reason why that can't be true. In fact, there's a paper, a nice paper by the Dali only, and Gertler just came out that argues that the main sources of the inflation were on the supply side, but the Fed was accommodating that so as to avoid a recession. And therefore you were getting big inflation without, you know, a recession. So I guess my argument is just that, you know, well, it is a tautology that if output growth is constant and inflation is high, that nominal GDP will be high. I don't see it. I just don't see why that says anything about the source of the inflation. Thank you.

LOUISE SHEINER: Thanks. You want to respond? Yes.

JASON FURMAN: So, yeah. Let me just respond to three of those points. First of all, if I said that your paper implied it was supply and I was disagreeing with your paper and saying it was demand, that's my fault for speaking on. Clearly, I think the paper is agnostic on whether shortages, food and energy are supply or demand. I think unfortunately, the big question a lot of people had was were those changes completely predictable? So if you did this fiscal and monetary policy, you were inevitably going to get shortages. So you should have been able to predict inflation. Or was it like the Russian invasion of Ukraine, which I certainly would not fault for fault any forecaster at the Fed for not having incorporated in their 2021 models. So my claim is that your paper just doesn't answer that question. I was then supplying the interpretation that I think of the shortage term as probably telling us more about demand and supply and also the shortage term not being like a random, unpredictable shock like the Russian invasion of Ukraine, but something that should have been fully expected, especially in a world where you would expect people to buy a lot of durables with one time checks. I agree with your discussion of cars. I think that is the one example where there and it's a quite big and important one because a big part of durable goods where there was a supply problem. Almost every other durable sector though, does not look like cars. Even for cars. Part of the supply problem was that microchips were being diverted and produced for other consumer electronics rather than from cars. So itself the lower production was a function of demand elsewhere. And moreover, this the general equilibrium point that if you have to spend more on a car, you can't spend as much on a restaurant. And then it matters a lot whether that doesn't affect inflation because you're on the elastic part of the curve or it does because you're on the inelastic. So the first one, just to sort of summarize that, I'm not disagreeing with your paper, I am interpreting your paper differently than I think some of the initial interpretations I have seen on the second point of World War Two. I think World War two was the reason why I thought there might not be the sort of best argument for there not being inflation would be that the World War Two experience was continued. What was interesting about World War two was output. When I can't remember the numbers four or 5% real GDP above its previous trend, just a dramatic increase. A lot of things went into that, like wage price controls, directed production and the like. If you looked at the summary of economic projections that Rich showed us with what 7% GDP growth or whatever it was in 2021, those projections were remarkable. They had GDP growth at the end of 2021 being higher than the pre-pandemic forecast that the Fed made, even though their forecast for the unemployment rate was lower than their pre-pandemic forecast. So how are they predicting higher output with lower unemployment? They had a huge burst of productivity. That is what you saw in World War Two. I think some of that productivity is endogenous. And I think if we had had that huge burst in productivity, it would have absorbed the demand and we wouldn't have gotten the inflation. The fact that we got normal productivity, not actually not normal is above normal in 2021, but not way above normal, I think was at the root of the forecasting error is if you go into to the models. And finally on the nominal and real GDP, in some ways I said it already, but you do ten and a half percent of GDP to 10% of GDP in fiscal stimulus for two straight years. That money has to go somewhere. And if it can't, you know, if real output is going up sort of as much as it can, prices are the things that can adjust in an unlimited way. Real output faces a set of real constraints. And the fact that those real constraints didn't look like World War two, I think was, you know, maybe a little bit surprising, ex-post, but probably a reasonable thing to have expected exempting.

LOUISE SHEINER: Olivier.

OLIVIER BLANCHARD: I think there's an interesting question about whether we should have predicted the increase in commodity prices in 2021. And I think it's fair to say that nobody did. Introspectively. Clearly it was due to educate them. It seems to me a good part of it, and we should probably have anticipated it. But I think somebody should look more closely because after all, U.S. is not the world commodity prices are traded on the world basis. Was the U.S.. Fiscal expansion sufficient to explain the increase in commodity prices? Sorry. Was the U.S.. Suppose we want to to to to blame the U.S. fiscal expansion for the increase in commodity prices. Then we have to convince ourselves that the U.S. is big enough that it explains the increase because the other countries did not have the same kind of fiscal expansion. The other is just the side remark. We basically have swept the issue of productivity growth under the rug and we have not focused on it. And productivity growth has moved enormously during the period going up and then down and then still down at this point. And I think that's probably more part of a story than than we have emphasized, and there should be more work on it.

JASON FURMAN: Olivier, can I ask you a question? You said maybe you should have been able to predict the commodity prices. Do you think the shortages, if somebody did this type of policy again, would you predict shortages outside of a covered setting?

OLIVIER BLANCHARD: So yes, with well, you know, I've learned my lessons, right. So next time it happens, I'm ready. It seems to me without think hard about the effect on commodity prices and whether the increase in demand is sufficient and they will think hard about how likely we are to get to the point where the supply curve in particular sectors becomes vertical. I think most of the previous cyclical fluctuations well, such that firms were operating on the horizontal part. So even if output was a big higher than they would have liked, they could still do it. I think what happened here is that the vertical part in some segments just shifted back and the shock in demand was so large that this time we actually got a lot of outcomes on the vertical part. So I think if we get again, a big demand push and indications that the supply side may not be very elastic in some sectors will worry ex-ante as opposed to exposed.

LOUISE SHEINER: Can I ask a question about this catch up, this lack of catch up? And so there's a little bit that sort of looking forward. I think there's a debate among people who say, you know, the feds has to look at wages because that's what's going to be determining inflation. And others who people say, look, the real wage is the lower there has to be catch up at some point and therefore. So you can imagine that markets will come down as wages go up. So maybe the wages will react later. Has this changed your view of that or how do you think about that? And is it surprising that there's no catch up? Does that mean that the real wages sort of forever lower because of this episode?

BEN S. BERNANKE: Well, not necessarily forever, but there's a there's a distinction between catch up, which is making up unexpected inflation in the past and which if there was if there were strong catch up, I think of that as a price wage spiral in a sense, You know, inflation goes up unexpectedly. And so workers want to get compensated for that and that feeds into prices, etc., etc.. But we don't get that. We don't find a catch up effect. So at least in the short run, real wages do go down as they have empirically over time. As labor markets tighten, for example, the you know, the they still can eventually catch up. What was the other part?

LOUISE SHEINER: Well, so if you think that what happened was there was a high demand, prices went up, pushing up markups, then is it possible that wages can go up without it then being reflected further into and the response is a decline in markups? That's, I think, one view of of what could happen. Right. So wages can go up, but you don't necessarily get inflation because basically it's just coming out of sort of high profits.

BEN S. BERNANKE: Well, it's certainly possible. We always in the Fed and the FOMC, we would talk about where markups were and how much space there was for wages to adjust. You know, you're nodding. You know, you were at those meetings. I think it depends. What we're we're saying is that supply and demand conditions in product markets are important. And the markups, not all of them, perhaps at least some of them, depend on, you know, demand and supply in a particular product market.

LOUISE SHEINER: Just want to get.

OLIVIER BLANCHARD: Yeah, I was very surprised. I mean, you feel the only equation which is not absolutely standard in this model as opposed to what you would teach on the glass is the possibility that workers may want to catch up. And that's an old discussion in the labor literature between the Phillips curve and the and the Phillips and the wage curve. I was surprised that the coefficient we got in one of the specification is basically zero. In another specification is point two, but it's very small and you always have to worry that yeah, maybe not yet and maybe it's coming and you know, we can't, we cannot rule this item sufficiently surprised that we put some weight on on the probability that it actually happens. The thing we did not discuss in the paper didn't come up in the discussion is markups. And there's, as you know, a group of people who believe that inflation is due to greed. And it's very difficult greed. I mean, we don't exactly know how to measure it. I think we Kappes was part of it. The price spikes the shortage. But I think people have in mind that's wider than that happens in distribution. The only thing I can say is I'm agnostic on that one as well. But we were able to explain price inflation without without invoking greed doesn't mean it's not there.

But, you know, as you solve a price equation fits amazingly well without having to resort to it doesn't mean the issue is closed or settled. But I was surprised as well.

LOUISE SHEINER: Great. Okay. We're going to take. Oh, do you want to.

JASON FURMAN: Yeah, just super briefly, first of all, if you look at the pictures Olivier showed of the model and the wage prediction and the price prediction, the price was almost exactly spot on insofar as the wages weren't spot on. Wages were higher than what was expected, not lower than what was expected. So that goes a little bit the opposite direction in terms of the paper's finding on the grade inflation. I'm agreeing with Olivier on the great station thesis and the like. The other thing I just would observe is in terms of can we hope for margin compression to bring inflation down without wage growth slowing, without labor market softening, unit labor costs since prior to the pandemic have increased by more than prices. And so if anything, it's possible that firms haven't fully passed through the increased wage costs. And that, again, is consistent with the model, the findings of the model in which, if anything, wage inflation has had been a bit higher than you would have expected.

LOUISE SHEINER: Great. Okay. Now, we're going to take a couple of questions from the audience. We don't have a lot of time, but there'll be a mike coming around. Tell us who you are, where you're from, please.

AUDIENCE MEMBER: Brian Sack, formerly these hall in New York Fed. So I'm gonna direct his question to Jason, but I'm certainly interested in everyone's view. You lump fiscal monetary policy together as the original sinners. And I want to ask, you know, which is the bigger sinner in some sense. And I know it's you know, I know they're not perfectly separable. And obviously monetary policy is reacting to the economy, which is affected by fiscal policy. So it's not really clear how to do the counterfactual. But for example, if we had a normal sized fiscal response during COVID and monetary policy followed the type of approach that Rich sort of described, which is a delayed lift off and then revert to a Taylor rule, and we had done QE, what's your guess at where inflation would be today? Thank you.

LOUISE SHEINER: Yeah. Let's take one more musical right next door.

AUDIENCE MEMBER: Thank you. Krishna Guha with Evercore Partners and also. Formerly of the New York Fed. So I wanted to ask Olivier and Ben if I understood the presentation correctly. You anticipate that it'll be difficult to and hard going slow going to bring down the underlying inflation rate from here. The component that's sort of Phillips curve related, if you like. That I think must imply that you think we're operating along. The verticals. The along the horizontal segment of the Phillips curve at this point in time. If we were in a sort of I notice that Gaulti's here, if we were in sort of Gaulti's inverse I u Keynesian Phillips curve type. World. In which that labor supply curve itself has moved. A bit during the pandemic. Is it possible that we're still on the easy down segment of that Phillips curve as opposed to, in other words, still on the vertical part of that Phillips curve rather than the horizontal part. So it might actually be easier than in your model to get. That that underlying piece of inflation down. Thank you.

LOUISE SHEINER: Great. Okay.

AUDIENCE MEMBER: Apologies Gaulti, if I misrepresenting I.

LOUISE SHEINER: All right. Let's take the first one on fiscal monetary policy.

JASON FURMAN: Yeah, great. And by that inverse L is actually what we teach in our intro class and sort of the way I see the world, for better or for worse. So in answer to your question, Brian, I think the quantitatively larger sin was fiscal policy, especially for the year 2021. The less forgivable sin, though, was monetary policy, and there are a few reasons for that. The fiscal choice was basically made in January 2021, although it didn't pass for another two months. The world was somewhat unclear at the time how much this was going to be a complete bounce back versus an economy that was still dragging. So I think there was considerably more fog at that moment. I have lower expectations for fiscal policy when they get the sign right on pleasantly surprised and and nothing happened really after that. Monetary policy made the error again and

again at meeting after meeting after March. It didn't really respond to a reactor change anything when fiscal policy was quite different from what they had originally built in. And I do have higher expectations for the Fed than just getting the sign right. And I think the Fed, by the way, caught up much faster than I was recommending and sort of got it back together. But, you know, six months after it should have. And what do I think caused that? I think Fed policy became quite asymmetric. It became about shortfalls, not deviations. And unemployment fate was you had to offset and undershoot, but not offset an overshoot. You couldn't lift off until you're at maximum employment. No matter where you were in inflation, you could use a fork. You couldn't use a forecast to raise rates in expectation of inflation. But as a forecast to not raise rates because you're forecasting inflation would go away. And then initially there was an asymmetry of the speed of movement. Rates could go down quickly. They couldn't go up quickly. They dropped that last asymmetry. They dropped it much more firmly than even I could have thought they would have. So I think they caught up. I think anything they could have done could have stopped inflation in 2021. But I think we probably have less today if they hadn't made that less forgivable error.

JASON FURMAN: Oh, sure. Just which one you want to.

RICHARD CLARIDA: [Inaudible]

JASON FURMAN: Pressed the button.

RICHARD CLARIDA: Thanks. I said most of what I wanted to say in the 12 minutes. I do think that eventually there will be scholars who will look at this entire period and take advantage of the cross-country analysis to refine and sharpen their inferences. And I will just leave it at that.

LOUISE SHEINER: Great integration question. Yes, please.

OLIVIER BLANCHARD: So I think there are two different object, and I think you may have mixed them phase with which Phillips curve and that we're talking about the slope of of a curve, the effect of labor market state on inflation. And then there is this other object, which is the output supply, which is this inverted L. I think that to the extent that we still have a number of firms which are on the vertical part of the inverted L, there are many places where they are still shortages. And again, when you go to Google Trends, you seem to you seem to find that people believe that these to the extent that this goes away, we'll get downward pressure on prices as firms go back to the horizontal segment. But what the last figure of our paper suggest is that if you go to the wage Phillips curve, the coefficient on the labor market variable, which is the vacancy unemployment ratio is significant but not very large. And so if you actually want to decrease inflation, you really have to decrease the vacancy unemployment ratio by a lot, which most likely translates into a fairly substantial increase in unemployment. But these are two separate issues.

LOUISE SHEINER: Okay. We are out of time. Please join me in thanking our panelists for a great discussion.

DAVID WESSEL: And I want to thank everyone for their lively conversation. We're not going to move to the second paper, which is by Gauti Eggertsson of Brown and Don Kohn of Brookings, where in the first part of the conversation we talked about how did inflation evolve and why? And now we're going to talk about essentially what we ended the last panel on. How did the Fed use the tools that it has and what should we learn from the new framework that they put in place in August 2020 and the forward guidance that they issued? Gauti going to speak first and then then Ellen Meade is going to respond and then Gauti, Don. And Ellen will join me on stage for a conversation similar to the one that Louise just had. So, Gauti.

GAUTI EGGERTSSON: Okay. I'm Gauti Eggertsson. Thanks a lot for to the organizer to invite me to speak here to this. And being in this distinguished panel with, you know, three grand old wise men that are legendary in the profession and me. So I decided to wear a tie to make up for my lack of gravitas and match.

GAUTI EGGERTSSON: You know.

GAUTI EGGERTSSON: The other authors here. So and I especially want to thank them to hook me up with Don Kohn, who, of course, is a legend at the end and rose from being a staff member to being a governor. I never went beyond the staff level. I sort of escaped to academia and I had the brilliant idea when we started writing this. Don may have think it's less brilliant in retrospect that we would talk every week over Zoom for an hour or so. And for the first two months we were talking and Don asked me, so have actually done anything And and I sort of. Not really in terms of writing anything up. That's not what I said. But and actually I think learned whatever had actually happened and really learned more there in those three months than I've learned sort of the last three years, I have to admit. So this is one of the more challenging papers that I have written, I have to say. And, you know, when important people speak on topics like this, they give a disclaimer. It doesn't represent the view of this institution or another. My disclaimer would be different. This does not represent my view a year ago and may not represent my view one year from now. I may even change my mind over lunch. I mean, so the the truth is that the last couple of years have changed my priors and model. And in that respect, it's very different from Olivier, which she sort of, you know, didn't seem to have changed this primary much. Mine have radically changed. And that's in contrast to, you know, in response to the financial crisis and so on. I mean, I had worked on that under Ben's tutelage at Princeton. And I felt that we had sort of you know, I felt roughly that we had written a roadmap and the script and everything sort of confirmed when I thought, but this here really hasn't. So I was sort of an enthusiastic supporter of contemporary and an enthusiastic supporter of the new framework and and even so enthusiastic that I did for the first and only time in my life, I wrote an op ed and enthusiastic support of Team Temporary. So what did they say? Basically, inflation. There's nothing to see here. Not a problem as good fortune would have it. It was written in Japanese. So, you know, I don't think anybody will hold that against me in the future. But I have a lot of things to say here, so and a lot of slides. So I think I better get on with it here. So what this paper is about is that what we're trying to do is to try to understand if a change in the policy framework that Ben and Company and Don put together in 2012 to the new framework in 2020, whether that may have played a role in the inflation run up. Okay. And this is a very succinct document. That's what these pictures supposed to tell you. Attempted to give it names like Article one, because they're seven paragraphs and they're all very well thought out. So that's sort of our assignment. So we're not really asking here how much of the inflation was caused by the Federal Reserve's 20 policy framework, which is going to be my aggravation or strain of mistake. Instead, it's sort of and there's a sense in which my column is going to be a little bit biased for this reason. We're sort of trying to ask, could it have? Right. So it's sort of like a stress test. So it's going to be biased. And since we're going to be looking for reasons for how we could have into played with what we saw and if so, through what mechanism. And in a way, it's an ultimate stress test to the framework because, you know, you have a once in a century shock and nobody anticipated. And, you know, it was very strange, a lot of a lot of dimensions. So I think a key conclusion and, you know, when I see the ten minute sign, I'm going to rush two main lessons and probably skip a bunch of slides. But sort of a key conclusion is that the framework was very well designed to deal with what we. We're really concerned with leading up to the pandemic, which was sort of a world in which you have low or star inflation below target and exposed it looks a little bit less well designed for sort of once in a century shop with a lot of unknowns. Right. And known unknowns like Rumsfeld was saying. Now, of course, the question going forward is, after COVID, will we get back to that environment where it was really designed for? And that's an open question. I mean, I've written a record for me, probably not for Larry Summers paper I papers with him about secular stagnation. Now, he seems to have taken 180 degrees and thinks it's all gone. I mean, it's a sunk cost for me, but a little disappointing. But but so I haven't made up my mind quite bit about that. But I'm more actually in Olivier's camp there that I think we're going to get back there. So the question is then how well the framework is for that. Okay. So this is going to be the structure and I'm going to start by. Talking about the leader and off of the policy framework, what we call the mistake of 2015 to 2019. I like the more punchy title of the mistake of 2015 because of Friedman's famous paper, The Mistake of 1873. This mistake is not, of course, a bad order, but I think it frames, I think, the mindset of people when they were writing the policy framework. So let me just tell you first what that is and why I think it played an important role in how the framework gets put together and how the framework dealt with it. So if you take a look at when you know, the interest rate has stayed at zero throughout a since 2000, in December 2008, when the Fed lowered went down to the zero bound. So what happens then? In 2015? Unemployment is 5%. Fed is expecting a tight labor market because their estimate was 4.9 and, you know, start tightening, tightening rates. What happens? Well, they start tightening rate, but unemployment goes all the way down to, you know, 3.7 in July 2019. And as you can see, basically no inflation pressures. Right. You see leading up to 2019, there's even deflation impressive. So, in fact, the Fed starts cutting rates in 2019. Mid 2019 leading up

to the pandemic because they want to try to reach the reached inflation target. Okay. So if you think and look at what the FOMC was thinking when they were making that decision. So here what you see is in this blue in this blue shaded area is the central tendency of the forecast of the FOMC at the time they made that decision to start to tighten. So what you can see that they're expecting to see inflation to gradually go back to target unemployment, to gently go below full and full employment and then go back to full employment as time moves along and having to tighten along the way to get there. Right. And then in the solid line, you see, the thing went quite differently. Unemployment kept falling without any inflationary pressures. So, you know, in fact, they reversed course and started cutting rates. Now, what was their estimate of the, you know, you star or the natural rate of unemployment in 2019? I mean, there's a sense in which they were asking themselves, who knows right after having, you know, seen this dramatic reduction without any inflation pressures. So, okay, So the lesson people took from this was that inflation persistently below target in 2008. And people were becoming very worried that this would start feeding into expectations and bring down inflation expectation, which is a concern if you think that you're going to be hitting the zero bound a lot. Right. Because that leaves less room because inflation expectation is going to drag down the nominal rate. So unless you then bought into the kind of story many were telling, including me and Summers, that there's a permanently lower natural rate of interest, possibly of negative this, you know, could be a big issue. So the lesson learned then was you as an imperfect unemployment is imperfect proxy for mass employment changes in you has very limited effects on pie you know in the in the Phillips reflect and there has been a persistent fall in R and I think that sort of formed the basis of the framework and this is just one example of a Fed policymaker that gave a talk because Brookings as well, I sort of put it up here, you know, they sort of summarized it nicely, saying, you know, sensitive to price to labor market tightness is very low flat. Phillips curve has been for for an advantage. We can let the labor market run hot with very little risk to inflation, which has big benefit because you could expand employment. And and in particular she suggested that with the new framework that you would not repeat the kind of mistake made in 2015. Had this new framework been in place, they would not have withdrawn accommodation until until the until there were clear evidence of, you know, unemployment falling wouldn't have led and would trigger that. We'd have to see clear evidence on the inflation side. So let's see then what they did with the 2000 and planning framework and how that then led them to a forceful implement implementation in 2020, which I think turned out to be very consequential. So major changes. We go to details in the paper by sort of textual analysis is that first to define declining R and potential interaction with the LP as the central problem going forward. And this is very important change that I underappreciated at the time as an enthusiastic supporter of this framework. They really, really replace from the old framework any deviation that penalized any deviation deviation of employment from maximum with shortfall from maximum employment. So in other words, it became a one sided objective function. We only care if an unemployment falls below our estimate, it goes above five. Okay, so this was a very important change. They introduced a new tool of average inflation targeting, implying a overshooting if inflation was below target, but they were not specific about time horizon and it was also asymmetric in that they were only going to compensate for undershooting. And then they sort of and that's clear when you look at the statement, they literally in Article two, as I would like to call it, you know, they were listed there. Objective inflation, employment and stability of long rates. They literally just move unemployment first, you know, and it's kind of hard to to interpret that in any other way that that was going to become a bigger focus. And then they eliminated all examples from previous framework of how you start actually that that is actually estimated and part of the policy decision making process. Okay. So why would it have prevented the mistake? Well, I just told you. Well, you wouldn't be too concerned if unemployment was falling below your estimate. You would wait for inflation to reach. It's reached its target. Okay, so what did this then mean coming into the pandemic when they just introduced the framework? So what it meant was a forceful, as Powell put it, a forceful implementation of our framework. And what I think is key here, and I am very and underestimated its significance until I was educated by gone about it. So there's a key statement in September 2020 where the committee says it's going to keep the target range at 0 to 1 quarter until maximum unemployment is reached and inflation has risen to 2%. Right. And projected to go over it for some time. So is the and feature that is very interesting there. Right. So it seemed like a very good solution, but the wrong problem. Is an excellent solution to the problem faced in 2015. And you can kind of see if you take a look at what people were expecting when they put this forward guidance in place. Again, the this is the central tendency in blue. They were expecting sort of a repeat of 2015, that inflation gently going back to target unemployment falling and actually falling faster than inflation would converge to target. And, you know, they wouldn't have to raise rate for a very long time. Well, that's was an excellent solution to the problem for 2015. But we're faced with a very different one. When inflation started picking up, before unemployment went

down. Okay, So in reality, then what happens is that when they finally tighten in March, unemployment is down to 3.5, basically pre-pandemic levels in Floyd's inflation, 7.7 as measured by PC and 8.5 as measured by CPI. So very different from the scenario they were anticipating when putting any of this forward guidance. So in a sense, a brilliant solution, but it was it wasn't a permanent solution to the problem because it seemed like there was insufficient attention given to, well, what if inflation were to rise before employment? The and stipulation seems to suggest that there was basically no bound on how much you would let inflation rise before you tighten as long as you didn't think you were at maximum unemployment. So I think there's some evidence of this. And one, we talked about the fiscal expansion. If you look at the minutes of FOMC, once it become clear that there's going to be a big fiscal expansion, they basically say the benefit of outcome based guidance is we don't need to do anything until these two conditions are satisfied. Right. And one thing that I found surprising was that in December 2021, when you have seen a pretty substantial rise in inflation. And so the statement from 2020 isn't changed until December 21. And at that point, you know, they kind of just doubled down. We're not going to raise rates until employment reaches its maximum and it is not there yet in 2021. So. But they predicted it will be satisfied next year. So this is sort of them doubling down in December with inflation having exceeded 2%, which is an understatement perhaps. The committee expected the appropriate to make the decision on the labor market if reached levels consistent with the committee's assessment of maximum employment. So this is the numbers they were looking at PCIe 4.8 unemployment, 4.25, primates 70.6. And if you take a look at where they were in March when they raised rates, unemployment in primates population ratio, it's basically it's exactly the same levels as pre-pandemic. So it seems almost like they literally waited to lift until these max employment were exactly hit. And that seems to me a little bit problematic now. So I have little time, so I'm not going to bore you very much with these equations because I have a little time, except just to say that I think there was and the way people were thinking about this was mostly looking at reaction function and simulation them in the model. I think it would have been useful and I think it is useful for the next framework and analysis to think about this in terms of objectives of the fat and the implication of changing that objective. And here what they were really doing rather than having a symmetric objective, which is if the Lambdas were the same on the labor employment, they were really saying, okay, we don't care if there's an overshoot in unemployment, we're going to put all our emphasis on shortfalls. So as long as if you have a lack in the way in which policy sets, he said, interest rate, which is IPI before you realize the other variables, is just the most reduced form, simple model you can imagine. What you're going to get is that this is going to be an expression for inflation. What you're going to get there is going to be a bias in inflation. The Fed is going to be less willing to make a policy that risks a shortfall than an overshoot in equilibrium. And that's going to mean that more often than not, you're going to get an overshoot. And here, the formula for inflation over CDC, sort of different expert possible explanations for why there was an overshoot. The most important one that I'm going to emphasize is that the Fed overestimated maximum unemployment. And here maybe I'll disagree a little bit with my old advisor and Olivier. So the inflation bias is essentially here. What I just said and, you know, I don't want to say that's not necessarily a bad thing. I think, in fact, the the framework was explicitly designed to overcorrect deflationary bias. It was trying to, you know, offset it because of a concern with fall. And then so I'm not necessarily saying this was a bad or unintended unintended consequence, but, you know, trying to tease out whether whether it went too far or not, I think is something we need to study. I haven't we have an appendix, an example where this could also potentially lead to a perception bias. But I feel that the empirical evidence on that is not very encouraging. Don was very skeptical of this having any relevance whatsoever. So I just put it we just put it in an appendix where it's there to die. But, you know, I encourage you to read appendix B. Okay, So how did it play out? And I'm just going to go very quickly. 5 minutes has not come up yet, has it? Okay. So I'm going to go quickly to this so I can get to lessons learned. Okay. So how did it play out and possible interaction with the framework? So here you see the super core. And what I want to point out to you is that so I wrote my team temporary article right around when the super core was low and I was convinced, okay, this was all temporary. What I find a little bit surprising is that in the fall, when you have super power that excludes all of these controversial components, etc., the Fed was still, you know, not really giving any caveats for inflation. Overshoot until you reach maximum employment and not really doing anything until March there. So I think an important feature. So it became a become a binding constraint having reached maximum unemployment. So I think was an important feature in which they overestimated the degree of what was the maximum unemployment and employment. And part of it was that unemployment was still below pre-pandemic pandemic levels that you can see there. This is basically the decision period right after the fiscal stimulus. It could have tightened in between then March 2000 1 to 2022. Right. So unemployment was still back to a pandemic level. It reached a point March 22, primates of employment to population had

not reached epidemic pandemic level until March 22. However, if you looked at things like labor tightness, that was the overview that we discussed that was at its highest level since World War Two there basically, and it reached over one in May 21. And there are five periods essential, Piers been it is that this tight world will one World War two, the Korean War the run up of the Vietnam War, call it. So I think and all five episodes were associated with inflation searches. So to me, that suggests that, A, this was an important indicator that the labor market was tight. B And that's where I disagree with my esteemed advisor and, and, and his esteemed coauthor that I think it may have been playing a bigger role than they then they made it out to be. So why was the sending conflicting signal there? I think we agree that there was just change in spending patterns. How do I do it? Why do I disagree with their conclusion? Because if you look at empirical evidence that directly looks at how θ or you over V interacts with inflation, you see that once it crosses one, there seems to be some change and that this is just the raw data. We have more sophisticated empirical analysis, including using another empirical framework of Blanchard to suggest that there was something going on there as data goes about one. And this here is just the raw data from metropolitan areas in the U.S. and you have the red here denoting postcode within. It seems awfully consistent with a non-linear Phillips curve. Okay. So summary, asymmetric loss function, overestimating of max employment, nonlinearity inflation. Let's go to the lessons learned. So the first thing I want to point out is that, okay, things may have gone wrong on some dimensions, but let's recognize employment is now back to where it was pre-pandemic. And amazingly, you know, we may argue that some mistakes were made, but, you know, that has retains its credibility. And that's the great credit of the leadership in its communication. And and, you know, whatever fault the new framework may have, you know, this is, I think, a really strong measure of success. But if to summarize, big themes that we have in the concluding session is that I do think we do think that one sided employment objective give rise to a host of complications that we still not fully understand. And they it was pretty one sided and vague. And I think people didn't really know how much inflation would be permitted. The second big theme was that forward guidance issued under the new framework really amplified the inflationary bias already implicit. And I think that was an ingenious solution to the 2015 that are a lot more problematic when inflation overshoots Target before you're sure about the employment situation, which is very difficult to assess, especially in this period, was less suitable for an inflation undershoot overshoot than the other way around. Required reading employment when it was very hard to judge for the framework. The next frame, which I think should be tested again, is considerably more in different stress scenarios. Our sort of and I will emphasize. A tentative conclusion is that on balance, the complications created by the asymmetries probably creates more problem than solve. So, you know, the penalty would be small if the Phillips curve is flat, but if there's nonlinearity, there may be some significant problems associated with it. And the cost non-trivial the. Having a better understanding of how the forward guidance discipline, the policy framework should be part of the discussion. And the asymmetry put extra pressure from judging national maximum unemployment, which is inherently a pretty difficult task. Lessons for forward guidance. And then I'm going to end. So it is a very valuable tool and conditional based for a guidance is certainly a lot better than Canada based in that respect. I think it was a good element of the forward guidance, but I think it was not well designed if inflation moved ahead of unemployment. And I think that was a problem and lack of clear and transparent definition of match employment. I think in the next review it would be useful to have an exact definition of that. And, you know, we need to recognize that conditions are never going to conform to those envisioned when we set the four guidance. Sometimes even some flexibility in guidance won't be enough to allow, you know, the committee to it to address the very situation and when it was expected. And, you know, in an unusual situation, I think it should be adjusted with meetings. And I saw it is a little bit peculiar. The September 2020 was set up for a very different scenario than was realized. Yet it was only changed in December 2021. And then in a way just to double down on reaching the employment target. Okay, so I think I'm out of time. So let me then leave . This and the rest of the paper and the slides are online, so I hope you have time to take a look at those. Thank you.

ELLEN MEADE: So I just click forward and. Okay. There we go. Well, thanks to the Hutchins Center, Hutchins Center for inviting me to join you today in this important discussion. I think it's great that Brookings is kicking off the Fed's next framework season with these two important papers and Eggertsson and Kohn, I'm going to call it the week paper assesses the contribution of the 2020 framework to the search and inflation. We've gotten a good summary, a quite complete summary, and my comments aren't going to focus on everything in the paper, but on a few topics that that I thought were important to raise. But the overall paper is well worth reading, and and I hope we'll discuss more in the later discussions about the recommendations that were just reviewed because they really make a valuable contribution. So start taking

exercises or post-mortems are important. That's what really this is all about. There was a research conference that we held at the Chicago Fed in 2019 as part of the framework review that included a postmortem stocktaking exercise by Everleigh Stock and Wright. And that exercise was not about understanding the causes of the global financial crisis, but about the effectiveness of the Fed's policy and promoting the economic expansion that began in 2009. I think there's a higher hurdle this time in the stocktaking exercise because we need to assess both cause and effect. How much did the new framework contribute? What about that forward guidance, which was really the implementing language for the framework? What about the view on the evolution of the pandemic and the extent to which factors boosting inflation were transitory supply related would resolve over 2021 or the underestimation of the strength of the labor market? And you throw all of these in the pot together and it's a little bit hard to sort out. I personally think the authors weigh a little too heavily on the actual 2020 framework document itself rather than a lot of these other factors, although they do bring them in over the course of the paper. So the 2019 stocktaking applied to the Fed's actions from 2009, and the authors at that time use the Fed's 2012 framework to go back and evaluate actions taken out of 2009. And this was appropriate because the 2012 framework was an articulation and clarification of the strategy the Fed had been following for some time. And similarly, the 2020 framework articulated approach to policy that was evolving, but which began to play an important role in decision making in the 20 tens with respect to the thinking about both dual mandate goals and all. Come back to this a bit more later. So mindset is important. E k Tell us that. And the second right analysis affected the Fed's thinking on the eve of the pandemic. We can see that that that stocktaking concluded that the forward guidance and also have tools had played an important role in speeding the economic recovery, but could have been even more helpful if they'd been rolled out sooner and more forcefully. And that's something the Fed did took very much on board in its pandemic response in March 2020. That really stuck and right analysis is consistent with Eggertsson and Kohn's view about regret, about the decision to lift off in 2015. The unemployment rate could have been reduced further, with negligible effect on inflation. If the Fed had waited and Eggertsson and Kohn see that as an informative is a formative experience for the Fed. So Eggertsson and Kohn describe the mindset that surrounded the 2020 framework review the lower neutral rate, implying a greater likelihood that policy rates would hit the effective, lower bound and attendant risks associated with associated trips to the LP for achievement of the dual mandate goals. A potential downward spiral as under achievement of the inflation goal lowers inflation expectation and further reduces the Fed's policy space. And there were significant, important research contributions from inside and outside the Fed. The authors give us a nice review of the issue and associated findings, and I agree with them that this mindset about the most important problem facing policymakers dominated thinking coming into the framework review in 2019 and indeed the new in the new framework statement. The Framework statement retained the original first paragraph, but highlighted this issue in a new second paragraph. But what that meant was that the new framework was very specific to a particular problem. It wasn't a broad articulation of goals and principles as the 2012 framework statement had been, but it had narrowed the focus to a particular very significant pressing issue. And Eggertsson and Kohn criticized the narrowness of the framework because it left undefined how the Fed would behave in the event of a inflation surge, which, as likely as it seemed at the time, is what actually occurred. So I agree with their recommendation that the next policy framework should be robust to a broad range of possibilities. But they used the term scenarios and stress tests, and I wasn't sure exactly what they were advocating. It sounded more like a framework manual maybe than a broad statement of principles as the two prior framework statements have been. But in any event, a framework statement of goals and principles, whether broader, narrow needs other communications that spell out the tactics. And this brings us to the forward guidance. And and forward guidance in 2012 for guidance in 2020 were part of implementing a framework, the December 2012 conditional forward guidance around the policy rate and around asset purchases included full throated escape clauses. In the event of affiliation inflation surge. But the forward guidance in September and December 2020 was very muscular and didn't possess similar escape hatches. I won't repeat here because Gaulti did such a nice job of of laying it out on his slides. But the key question was that the Fed expected to remain at the effective lower bound until it had achieved both maximum employment and 2% inflation with an expected overshoot. And I think they're right to criticize this aspect of the forward guidance, but I don't think it's correct to say, as they do, that the September 2020 statement, quote, implied that the Fed would not tolerate any level of inflation without acting if employment had not reached maximum. To be fair, there was a final new paragraph introduced in the statement in 2020 that provided and out of that paragraph said the committee could quote, adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the committee's goals. And in assessing that appropriate stance, the committee

would consider labor market conditions, inflation pressures and inflation expectations. And I've added that language there. So should the escape clause have been in the conditional forward guidance as it was back in 2020? I think that would have been clearer and more explicit. But it's not correct to say that the FOMC had completely tied its hands so extended. Kohn also point out that the committee could simply have adjusted the forward guidance at any of its meetings. And I agree it's not clear why the FOMC waited so long to make meaningful language adjustments. You know, you have the the language not really being adjusted still in November 2021, the committee saying that inflation having persistently run below its longer run goal, the committee will aim to achieve inflation only moderately above 2% for some time. And at that point, you know, inflation had been averaging 2% since early 2021. So the language adjustment didn't really occur until the December 2021 meeting. I I'm in complete agreement with them on this point. And now let me turn to some other changes in the 20 2020 framework on the maximum employment side of the mandate. And here's where I have a good bit of disagreement with their interpretation. So they point to three important changes on the maximum employment side of the mandate. First, the ordering of the goals was changed throughout the statement to be consistent with the ordering of the goals in the Federal Reserve Act. They say, quote, It seems difficult to find an alternative interpretation to this change than that. The Federal Reserve wanted to communicate its increased attention to this part of the dual mandate. But how can a change that simply lines up ordering in the framework statement with the Federal Reserve Act, reflecting increased attention beyond what's in the ACT itself? Second, there are these new words, a more expansive definition of maximum employment, which characterize maximum employment as a, quote, broad based and inclusive goal. And they see this characterization, these new words, together with the dropping of the median longer run normal unemployment rate from the CPS opening the door. Is a quote for considering the status of subsections of the nation based on income or other defining characteristic. So let me look first at this SNP item that was dropped, this figure that was cited and it was cited by way of example. The original statement said it was an example. I've always thought that was because the SNP is not a committee forecast. It's a collection of individual forecasts premised on individual assumptions of appropriate monetary policy. So dropping the reference to a number that's not endorsed by or reflective of the committee or agreed to in a consensus fashion from a document that is a consensus document doesn't seem inappropriate to me. The framework statement, retain language, saying that maximum employment is, quote, not directly measurable changes over time, owing largely to non-monetary factors that affect the structure and dynamic of the labor market, and that it wouldn't make sense would not be appropriate to specify a. Fixed goal for employment. And that in making its assessment that considered the committee would consult a wide range of indicators. So many aspects of the earlier statement were preserved. Since the mid 20 teens, the FOMC has been communicating its attention to a broad range of labor market indicators, both internally and externally. Staff presentations to the FOMC routinely included metrics such as unemployment rates by race and ethnicity. In June 2016, the MPR included a box examining whether gains from the post GFC expansion had been widely shared and subsequent MPR has included boxes analyzing labor market outcomes. Housing returns to education. Other topics for different demographic groups. So to me, the addition of the words broad based and inclusive merely acknowledged that the FOMC did not take a summary statistic approach to evaluating maximum employment, and the committee continued to say, as it had in 2012, that it saw maximum employment as largely determined by non-monetary factors. Further, they note that some policymakers had highlighted the potential gains for some groups due to the new framework, and I think I agree with that. Statements about potential gains were related to demographics of the labor market in the late stages of the expansion, which connects to the third change that they highlight, which is the introduction of asymmetry with respect to the employment, like in the mandate that the committee would seek to mitigate shortfalls of employment from assessments of its maximum level rather than deviations, as in the prior framework, so that the Fed would ignore overshoots of employment, which it saw as having little implication for inflation given the flatness of the Phillips curve. And they use a simple model illustrate that this asymmetry leads to an expansionary bias in policy and generates an inflation bias. And as they note, if the Phillips curves flat, the size of the inflation bias could be quantitatively trivial. But the gains in employment could be large. In June 2016, the Teal Book documents circulated to policymakers ahead of each FRC meeting began, including a new lost function in its optimal control simulations. Net loss function assigned a zero weight to unemployment outcomes below the natural rate, so that loss of function plays an asymmetric weight on the unemployment gap. And these simulations are available on the Fed's website until ebook materials from June 2016 onward and available through the end of 2017. The Teal Book said, quote, Policymakers choose this relatively low path for the policy rate because the desire to raise inflation to 2% is not tempered by any aversion to the undershooting of the natural rate that helps achieve this outcome. Tighter labor market

causes inflation to reach 2% more quickly than in the case of peak weights. Does this amount to asymmetric loss? Function was recognized as having an inflation bias in the book. One helpful for meeting the 2% inflation goal and was not motivated by a singular desire to boost employment or help disadvantaged groups. I'm close in time, Right? So I need to kind of say I'm out of time. Okay. So let me give one final comment because I have to skip. Yeah. And that's on whether the 2020 framework provided the death knell for preemptive policy action. I saw the framework very much as downgrading estimates of you star in the policy making process, but I didn't see it as throwing preemptive policy away the way Eggertsson and Kohn do. The statement continues to say a framework statement that the committee's policy decisions reflect its medium term outlook, in addition to its longer range goals and assessments of the balance of risk. And I'd point you to comments in Loretta Masters remarks earlier this year at the Monetary Policy Forum, where she said that the FOMC should have acted sooner to address inflation but didn't see the delay as having been generated by an absence of preemption so much as overly optimistic forecasts for inflation. She sees the framework changes as reflecting uncertainty around assessments of maximum unemployment. Quote Given that we don't know where you start, is policymakers should not these policies solely on what could be an overstated estimate of this construct? So to conclude, because I know I'm out of time and we've left the discussion of tapering of asset purchases for later, I really enjoyed reading this paper and thanks for giving me the opportunity to discuss it.

DAVID WESSEL: You know, and make a slight change. Kristin Forbes is going to. Oh, no, you're up. Sorry, I'm ahead of myself. Come up. Oh, come on. I'm. Well, thank you both. I think you're on the mend, which is following directions. Not very well, obviously, but.

DAVID WESSEL: It's.

DAVID WESSEL: So I'm kind of struck by listening to this conversation of observation I made about the Fed in the past that everybody at the Fed is fighting the last war, but everybody's fighting a different last war. And the case you have made here is that the in the statement the Fed was fighting the 2015, 2019 period, and it turned out to be inappropriate. Don, I want to ask you about a couple of things that have come up in the conversation and pick up also on something that Allen said at the end. It seems to me that I worry a little bit that he discovered the framework, read it with the care of a Talmudic scholar and has now determined that everything that happened to monetary policy in the last few years can be found in the passing of the wording of the framework. But it seems to me that there's quite a difference between the framework and the forward guidance and that there's a tension here between forward guidance, which obviously has its place, particularly at times when we're at the zero lower bound. But it in this case seems to have prevented the Fed from doing what it has been asked to do so often in the past, which is be nimble. So I wonder if you could distinguish for us how much of the problem was the framework and the mindset and how much was the specifics of the forward guidance and the inertia that it induced in the Fed reaction when fiscal policy turned out to be so big and inflation a little worse than anticipated?

DONALD KOHN: Sure. So I think the frame, the forward guidance and released and importantly grew out of the framework. And and Gowdy put up the quote from Jay Capp Jay Powell, who which said the forward guidance was a forceful implementation of the framework. Now, it is true that the forward guidance went way beyond the framework. So in the framework there, there is the asymmetry, the labor market asymmetry, but it doesn't imply that policy should be that the nominal rate should be zero up until the time to get to full employment. It just says that you shouldn't be reacting. I think it does imply about preemption. I mean, it says you shouldn't be reacting to what you think are overly tight labor markets because they're going to cause inflation with a lag. And that lack of preemption was contained in the forward guidance and in the Fed's announcement. So the announcements before September 2020 talked about expected and anticipated conditions. The announcements from September 2020 on did not. They only talked about actual getting to full employment. So I do think that that that piece of the framework influenced the forward guidance. But the forward guidance was much more, I think, to blame than the framework. But I don't think you can really separate them to the the more I thought about the forward guidance, as Gaulti and I were working on this, the less sense it made. So in, in what in what and what model, what world should you be at A negative at the highest real interest rate at full employment would be minus two. That's if inflation expectations were anchored at two. So they said we are going to get all the way to full employment at a minus, at a minus real interest rate. I don't mean to be looking at Rich, I shouldn't be looking, but and it seems to me that

guarantees a rather substantial overshoot, certainly a full employment and likely even with a flat Phillips curve to some extent with inflation. So it was kind of a very extreme version of that. Don't preempt and be very, very easy as you get to full employment and don't worry about and don't worry about overages. So I really and then the other part of the forward guidance was the guidance that came later on the on the taper and then the stuff that said, we're going to warn you before we even announce, as we're even thinking about taper, we're going to tell you that we're thinking about it. Then we'll announce the taper and we won't lift. Staff rates until the taper assistance to were no longer buying securities. And I thought that that just added another bunch of inertia to the policy process that really wasn't wasn't necessary. Rich, I agree that if the Fed had lifted off a couple of months earlier, which was even I think I think it's hard to imagine it would be much before September, October or November of the fall. It wouldn't have made that much of a difference in inflation, but it would have started the process and it would have taken a little something off. And I think it would have helped the credibility of the Federal Reserve to recognize the problem first earlier and not get to December 2021, when inflation was several percentage points above the goal. Seem very persistent and say we're still not at full employment so we can't raise interest rates. Those escape clauses were there or I guess that escape clause was there, but it was never discussed. It would never come up in any conversation. And so I think maybe you're right. We should be careful that we don't say that there was an inescapable commitment here. But the fact that no one really ever discussed the escape clauses strikes me that the Fed itself was thinking it had a pretty strong commitment to wait to full unemployment, almost whatever the inflation rate was.

DAVID WESSEL: You know, down. In all my years of covering the Fed, you were never that emphatic about anything when we were interviewing you. I kind of I wish we could roll back the clock. It does seem just to add one thing before I turn to Ellen, I thought I think you raised the question I was going to ask, like, would it really made any difference if they'd tighten policy six months earlier? And I think you suggest that we might have had slightly less inflation does seem to me that another element is we wouldn't have had to have such rapid rate increases and we are now learning that those have some unintended consequences. Ellen.

ELLEN MEADE: Do I have to.

DAVID WESSEL: Turn this inside? No time. No, you just turn it off.

DONALD KOHN: Oh, I'm sorry.

ELLEN MEADE: There we go. I just wanted to respond, Don, to a couple of things that you said. One of the reasons I think of the forward guidance as being implementing language for the framework, but quite separate from it is, you know, it can be revised every six weeks. It has a smaller group of people that vote on it. And the hurdle is not consensus. Indeed, as you guys point out, there were two dissents at the September 2020 meeting. So I think the forward guidance, just because of the governance issues, makes it a more nimble sort of thing. And and but yet I do agree with you that it was very muscular. Now, the question is, would it have been, you know, if if those the vacancy to unemployment data had been paid better attention to over the summer of 2021, the Fed might have reached the conclusion that maximum employment had been achieved without getting the unemployment rate and the labor force participation rate back to pre-pandemic levels. That would have made all the difference. Right? So that's not about the forward guidance per se, but about a judgment of the economy.

DAVID WESSEL: Yeah. Gaudi, could you talk a little bit about the tapering? So Jay Powell's view was that it doesn't make sense to be buying bonds while you're raising interest rates because it's like stepping on the brake and the gas at the same time, although I believe the Bank of England actually did that. And you argue that they needn't have waited for to end the asset purchases before raising rates. Could you walk us through the argument there and why you think they had the wrong sequence or they thought they had to have a sequence?

GAUTI EGGERTSSON: Yes. So one of the things that I didn't have time to talk about was the additional and we talk about in the paper was the additional inertia that was created by the quantitative easing measures. And then the Fed sort of said that, A, they would give very long warning for when that would start and B, they wouldn't start raising rates until that was completed. The argument being that, you know, the asset

purchases were stimulative while the interest rate were restrictive. I suppose I don't see any inconsistency in, you know, slow and orderly, you know, resolution of the asset purchases whose impact is mostly at the time they are announced. And to to my view, has a lot to do with smoothing market functioning. And then at the same time start raising rates like indeed the Bank of England did. So I don't see I think they created an unnecessary barrier there that may have played some role in the delay, although I don't know how much. Just want to respond very quickly to a couple of other issues. Right. So like you correctly say, what we are doing in this paper is like a Talmud scholar looking at the in the could, you know, new framework had played a role. It's really not a sober assessment of how much role it play. I view it more as I thought my home assignment was sort of being the devil's advocate here and asking the question, Could it have? And then through what mechanism? And that's sort of what we are trying to spell out here. If I would have been asked the question, which was more Blanchard than Bernanke's, you know, trying to explain the shift through different mechanism, I think it would have been a very different paper. Instead, this was focusing on that element, could it? Right. And then how you know, I think I will have to you know, I haven't come to full determination of, you know, parsing out how much each contributed and then a little bit about the issue of so what we were not saying in the paper was that the forward guidance, September of 2020 inches September to the penny, we were not saying that that actually bound the hands of the Fed. What was surprising to me, because there is an escape clause. What was very surprising to me is how much the view seemed to believe that it did. And that comes out pretty clearly in the discussions even at the time they changed the language in December 2021, where, you know, I think it would have been reasonable to say that you had reach max employment, but they sort of in a way double down and say, actually, we're not there quite yet. So to me, the surprise was that they didn't sort of, when there was a surge, tried to use the escape clause in a little bit, the forward guidance, and instead of leaving it unchanged for more than a year. And that is sort of more criticism as opposed to claiming that it was a strict binding constraint. I don't think it was, but I think to a surprising degree it was treated as such.

DAVID WESSEL: Don. You make a point at the end of the very last recommendation, there's too much essentially too much groupthink at the Fed and that there wasn't enough diversity of view. This is a comment that's often made about the Fed. I think sometimes the justification is sometimes not, given the famous stories about the Federal Open Mouth Committee. But I was intrigued by you suggested whether there's something about the decision making process at the FOMC that is discouraging a more fulsome discussion of alternative views and dissents. And I wonder if you could elaborate a little about that. And then I'm going to turn to the audience.

DONALD KOHN: Well, I think this is another irony, David, relative to where I was, because I spent at least four years helping Ben get a consensus on the committee and reduce the number of the sense that we might have. But I think as an as an outsider, it strike me as I thought about this period with all these very difficult questions that were being discussed in the public. Right. It's not as if this is totally exposed. I mean, as Jason and others pointed out, there were potential inflationary implications of fiscal policy, etc.. How few dissents? There were essentially no dissents between the time the forward guidance was put in and June, I guess, of 2022. And I and so I you know, I haven't read the transcripts. I wasn't inside the meetings, but you wonder how vigorously alternative perspectives were being reflected in the in the meetings. You can look to a certain extent to those the projections because they have a central tendency in a broad range of projections. And at least until I think until the early part of 2022, that was a pretty narrow set of set of views. I don't know. I mean, it's it's hard. I also wonder I don't so I think really the point I was trying to make, we were trying to make in that last in that last recommendation was should the Federal Reserve itself just do a self-examination of how it's making these decisions? An awful lot of stuff happens in the week before the FOMC, where the consensus is formed. The decisions essentially get made, the announcements are written, etc. and whether that leads to enough challenge of the of the existing consensus, I think is is the question.

DAVID WESSEL: Mm hmm. I'm thinking as you speak, I can't my chronology is not right, but I suspect in some parts of this time they're meeting remotely because of COVID. Yeah. So that we know that that eliminates the coffee break conversation. I want to turn to the audience now, Jason and Steve Liesman and Mike Kelly and David Wilcox that you bring up. So let me take two questions at a time and then we'll do it.

JASON FURMAN: My question is, what do you think of this comment? I understand fiscal policy, trying to learn from the mistakes of the past 2009 through 12 was way too small and fiscal policy was compensating

for that in the other direction. I think they overcompensated for it. I never understood it at the time, and I don't understand in retrospect why people thought monetary policy made much of a mistake at all from 2005 through 2019. I think there was too much self-flagellation around that. The inflation rate was sort of 1.7, 1.8. It's 20 to 30 basis points off. I'm willing to stipulate that if the Fed gets inflation to 2.2, there won't be a person in the country saying that that's above their target. They'll say 2.2 is two. So looking back on it, you know, why should we think the Fed got anything lower than maybe an A-minus and a minus before all the inflation of recent decades in grades for its performance for 25 to 2019. And there was sort of no mistake to really learn from there.

DAVID WESSEL: Steve Liesman Steve, can you stand up so the market can find you?

AUDIENCE MEMBER: Thanks and thanks for putting together this conference. A couple of things I don't remember reporting on the Fed and thinking they are or are not following the the statement, the long run policy statement. So I just wonder if you guys have thought about how influenced it really was in the making of policy. And then just one other one of the thing, how do you factor in. Sort of I guess the best way to. Put it is facts on the ground rather than the kind of theoretical framework, which is, if you remember, in September 21, the chair was waiting for the benefits to run out, thinking that would result in an influx of workers to the workforce. How does that factor? And then again. In December 2021, there was the the. Omicron wave, which, I don't know, maybe helps explain the failure of the Fed to pivot. I don't know how much maybe is confounded as you are about that. But there were those two things that seem to be kind of outside the framework that you're looking at. Thanks.

DAVID WESSEL: Right. I mean, your point raised, Steve, is it and I think Loretta mester made it, maybe it's just a bad forecast and we're overemphasizing it to someone who want to take Jason's question about was there a mistake in 2015 to 19 that needed to be fixed?

GAUTI EGGERTSSON: I mean, I, I thought it was very reasonable at the time to be concerned about continuous decline in our star. And, you know, and that was starting to show up possibly in fall, an inflation expectation that would leave even less room for interest rate cuts in the future. So yeah I mean, you know, missing a target by small amounts in itself is not a big deal. But I think they were looking forward to a more serious problem down the pike if that they were getting gradually less and less room. And I think that was a perfectly legitimate thing to be concerned about at the time.

DONALD KOHN: But I actually disagree a bit with my coauthor here in the sense that I look at the framework as having two important pieces. One is the average inflation targeting, which is really meant to deal with the zero lower bound. The effect of lower bound is very similar to, as Rich Clarida pointed out in a speech on this stage is very similar to Ben Bernanke's temporary price level targeting. That's to deal with that. But I think the asymmetry in the labor market approach is to deal with a different a really a different problem, which was we overestimated how high or underestimated how high employment could go before inflation picked up. We thought the Phillips curve was too flat, etc. and it's not really the same as the EAB problem. And there I think and our conclusion was we really need to go back and rethink that piece of the asymmetry. Is that necessary to address the issues we might be facing or the costs of that asymmetry that more than the benefits might have been? I think the flat Phillips curve, and Jason is pointed this out and writing is a two edged sword, because if you go past an inflation, if the Phillips curve is very flat, you go past full employment and inflation only begins to pick up a little bit. You've got a long way to go back in order to get inflation back to your 2% target. So inflation doesn't pick up much when you overshoot, but it doesn't go down much when you come back. So I think I hope that the framework and maybe this will be part of the next panel discussion, that the framework focuses a bit on that piece of the asymmetry. Is it really if we even if we return to a lower star low inflation world, is that piece of the asymmetry still necessary to get the benefits? I agree there are benefits from running a hot labor market, but there may be other ways of getting those benefits. So I just think it needs a.

DAVID WESSEL: And I think that Ellen, correct me if I'm wrong, when I went to some of those fabulous and events and I had the feeling that policymakers really did think, Jason, that they could have had a better employment picture if they hadn't been so tight fisted and that maybe it wasn't big in tenths of a percentage

point. But confronting people over and over again influenced them to think where we want to take the risks I like.

Unidentified: [Inaudible]

DAVID WESSEL: Yeah. Right, right.

ELLEN MEADE: Right. And actually the page of comments that I deleted from my presentation was on the Fed listens and the role that I think it played psychologic. Typically in people's thinking going into it, because of course we couldn't engage businesses a bit, but you couldn't engage community groups and and community colleges and labor market groups and so on, on inflation, because there was no inflation, there was nothing to talk about. They didn't understand the questions. Right. But if you ask them about the labor market, you heard all about problems that were being solved that ultimately were bringing people on the margins back in, you know.

DAVID WESSEL: Okay, Chris, can you bring the mic down to Rich? And meanwhile, can someone give the right Mike Kelly, Wave your hand, we'll get Mike, Kylie, David Wilcox and we'll let Rich have extra.

DONALD KOHN: Kind of didn't answer Steve's course.

DAVID WESSEL: Oh, yeah. I'm sorry. Go ahead, please.

DONALD KOHN: Yeah. So I think I think there is an issue you'll be interested in Ellen's perspective on this, that this statement is issued in January and rarely referred to afterwards. Now, I think it did inform the forward guidance and everybody you, Mr. LIESMAN and everyone else is, are totally focused on the forward guidance because that tells you something about what might happen at the next meeting and the meeting after that, in the meeting after that. But it would be helpful for the Federal Reserve, I think in their communication every once in a while to take a deep breath, look back and say how this fits into the framework. And in that regard, I think I hope that when they reexamine the framework, this issue of what happens when the goals aren't totally aligned, when you're above one and below another, needs a little more attention and a little more care. And because that's the situation they at least they thought they were in, although I think that you overview suggests they weren't. The situation wasn't quite as contradictory as they thought. As they thought.

DAVID WESSEL: Okay,.

ELLEN MEADE: Could I just have one?

DAVID WESSEL: Sure. Of course.

ELLEN MEADE: You're you know, I two thought that the framework didn't play much of a role except there were a few press conferences where I recall Chair Powell saying something about the paragraph. It's really about supply shocks when the goals are not complimentary. Right. And then he mentioned balanced approach, which, of course, was the language that was deleted from from the new framework statement. But he would go to that paragraph because that's the issue, you know, that they were most thinking about with these supply shocks. And in terms of the question about, you know, I remember there being a focal point around September 2021 when the extended UI ended, kids are going back to school, so on and so forth. Maybe that's when labor force participation picks up. You know, I think you can tell a lot of this story around a forecast that just makes a number of mistakes. And I'm not saying it would have been easy to make a forecast, but yeah.

DAVID WESSEL: All right, Kiley, finally.

AUDIENCE MEMBER: So maybe two observations and one then one question in the form of a comment. Observation number one, when I look back at the I certainly resonated with me goatees, you know, description of the framework as creating a asymmetry which has an inflation bias. And that, of course, was

meant, I think, to offset the downward inflation bias in work that, you know, especially with little star in that model, it's lower star driven primarily by aggregate demand shocks and it's desirable to have an overshooting type policy. When I think of that literature, though, that overshooting is described in terms of inflation, not in terms of the unemployment rate. Now it is the case that if aggregate demand is driving everything, those are the same. But when I think about the work I did with John Roberts or with Ben or others, we've always expressed in terms of inflation because actually supply and demand factors are both important and inflation will better capture those. And so I think it was a perhaps an over optimization to a world in which demand is the primary driver and our star is low. And that thinking more flexibly would have sort of leaned against the asymmetry in output or unemployment. I think secondarily related to that, our models suggest that lower unemployment is desirable. That does not mean that lower unemployment should be ignored in setting monetary policy. So in our standard new Keynesian model, the equilibrium level of unemployment is inefficient and it's desirable to have lower unemployment. That doesn't lead to a loss of function of the type that Ellen described that's used in some optimal control simulations at the Fed in 2016, where you ignore it, right? It just says, well, it's desirable to have it somewhat lower, but you should still be responding to lower inflation. Right? There are still costs. I mean, to lower unemployment, there are still costs. I mean, so in broad terms, the framework seem to over optimize to this demand world. And, you know, I think we have a long history in monetary policy research where optimizing your framework to a specific model will lead to a bad outcome rate that you should attenuate your responses in any individual model or framework because the framework is very uncertain. Nonetheless, I wonder how different outcomes would have been. And in particular, I wonder your views on if the framework had been perfectly symmetric, whether or not the real challenge was associated with having a forecast targeting framework. And the forecast always be that next year will have Goldilocks, next year inflation will be 2% and next year unemployment will be near its natural rate even if we don't do anything. And that really has nothing to do with asymmetries, right? That is a view of where the economy is going.

DAVID WESSEL: Thanks, Rich. And then David, and then we're going to move.

AUDIENCE MEMBER: I'll be quick. What I would say is to Jason's point about that period, one reason why in retrospect, Jason, were given an A-minus is that the Fed, in real time, including when I was there, essentially had to ignore backward looking models that said inflation would surge when the unemployment rate got above five and the committee lifted off in December of 2015 when the unemployment rate was a five because the Fed models were saying it would take off. And the Powell Fed certainly at that point became very, very skeptical that we should base policy on on that model simply because you kept falling with no cost push pressure. So I think there's an opportunity cost clearly, but there's also an opportunity cost to running a policy that's that's very, very tight because the model keeps looking at inflation to go up. And I think that's also relevant.

DAVID WESSEL: David, can. You raise your hand so they can find you? It's coming from behind you.

AUDIENCE MEMBER: In the interest of brevity, I'll suppress most of what I had planned. Bless you. To listening to the discussion, it seems to me that one factor that has been gravely understated is the profound uncertainty that policymakers and, frankly, staff forecasters face in the moment. and I think there's a tremendous risk of. Over learning the. Lessons of the last three years, because. The last time. We had a shock of this nature was, as best as I can tell. Approximately the influenza 19, 19, 18 and 19. The next time we have experience like that, I hope you'll look back. I think there are important. Lessons to learn, but my guess. Is that the. Primary danger we face today is over learning the lesson of a highly atypical. Shock. And forgetting that at least or underappreciated. That. In my view. I think. We're headed back to the environment of the 20 tens, where the primary challenge is indeed a lower star and the risk of sinking into a morass of inflation expectations that are eroding and monetary policy becoming increasingly. Incapable of combating that.

DAVID WESSEL: I agree. And I think the other thing I should have mentioned earlier is that this is an interim assessment. And if we get through this period in the next two years with a soft or soft tissue landing, we may decide that we took a risk and it was worth taking it. It wasn't such a bad outcome, and we won't know that for a few years. And then history will judge this a lot more on things that have yet to happen so that please join me in thanking the panel and then we're going to make a slight change to the program before we move

to the full panel on what should be in the next framework review, Kristin Forbes from MIT, a former member of the Bank of England Monetary Policy Committee and an all around good person, has some slides and she's going to share them. And then I'm going to bring up the whole panel. So, Chris.

KRISTIN FORBES: Okay. Thank you. Congratulations to Dave and the team for putting together this event and having people start to think about the framework review in advance. There's clearly some room for improvement this time around. So Dave has asked me to talk about what should be on the agenda for the framework review. What should we think about? But to do that, I think I need to first take a step back and say, what has changed? Why should we be thinking about changes to the framework review? And I want to highlight three sets of changes. The role of global shocks, high inflation and the Phillips curve and where policy rates are now. Many of these are obvious, but I think it's we're in many of them have been talked about already this morning, but it's worth just running through quickly because the world today does look quite different than it did in 2019, 2020 when the framework review was happening. And it's these changes, which are the main reason we are talking about changing it, rethinking some of that framework. And then I'll end with what's next for the framework review. Okay. So first, what's changing the global environment? Let me start with the role of global shocks. As usual at a Fed conference. We don't talk much about what's going on in the rest of the global economy. Richard, thank you for bringing that in. But the key point I want to make is that global shocks are increasingly important in driving headline inflation, CPI, inflation. This is an update of a graph I actually presented here. GHOSH Before COVID, when I did a Brookings paper on the role of globalization in affecting inflation. And the main takeaway from the typical Brookings paper, you know, about 80 pages, but it can be quickly summarized in this is that global shocks are increasingly driving CPI inflation. This is the principle first principle component of CPI inflation in red. It shows that CPI inflation around the world is increasingly driven by shocks like oil shocks, commodity shocks, global supply chain issues, global slack. So that is but also important is conflation. Wage inflation is affected a bit more by global shocks, but not much more. Core inflation. Wage inflation is still largely a domestic process and that agrees with the results in the paper by Ben and Olivier. And here's just the graphs that they showed us. If you look at what drove CPI inflation over the past couple of years, global shocks, food and energy shocks were a key driver. But when you look at wage inflation, the global. Whale sharks have been a much played a much more minor role. And so I think that's important for a couple of reasons as we think about a framework. The first key takeaway from this is that in any point in time, in any year, it's going to be really hard to hit a CPI inflation target. And even core can bounce around some because of these global shocks. So trying to set a mandate where you're supposed to hit a target in a specific target in any given month is just asking too much. You don't want monetary policy to go up and down to try to hit that specific target in any given period when these global forces are going to drive inflation away from a target and by large amounts, at least, the U.S. has a big advantage over most other countries where the target is core inflation. So you get away from some of this, but I think there should still be some more flexibility because these global shocks do matter so much. Also, one reason why you might say we don't need to worry so much about the global shocks if they do largely fade in pass away is because inflation expectations have remained anchored as again we saw in the first paper. So there hasn't been much pass through of this period of sustained high inflation on wage setting, but I'm not sure we can claim victory on that quite yet. The verdict is still out. We may. We would love to see this updated in a couple of years for the U.S. and also important in other countries, it's not clear inflation expectations have been is well anchored. The U.K. is a prime example where we've seen high inflation largely driven initially by external shocks. It has passed through into the wage and price setting process to a larger degree. It does seem to have unanchored inflation expectations during a period when the Bank of England was raising rates at a slower pace. So I don't think we can claim victory here. Even if the global shocks are usually more transitory effects on headline inflation, they still can pass through. Okay. Second, change in the global environment other than in the macro environment, other than an increased role of global shocks, is that inflation is back. And this just shows the share of countries that have inflation too hot just about right or too cold. This is a set of advanced economies, independent central banks, inflation targeting, etc.. I mean, we all know inflation has been too high in most countries around the world. But it's important to note that the period when this framework was done was that period where there was a lot of green and blue when inflation was too low. I don't think anyone working on the framework then foresaw how quickly inflation could come back and be high. So it just was not dealing with a world where inflation is very high was was not central. And that's why it was easier to write an asymmetric framework because high inflation just was not seen as a major risk. It's back. And related to that, we had a lot of talk today about the Phillips curve. Is the Phillips curve alive? Is it flat? Is it steep? I will skip some of that discussion, but I just want to make a couple

important points about the Phillips curve. The Phillips on the left is the original Phillips curve. Is Phillips do it for the US. What's important from this is it is not a straight line. It is non-linear, it is a curve. Somehow we seem to have forgotten that in much of the discussion that especially preceded 2020 when unemployment is higher and unemployment falls, and when unemployment is above narrow and unemployment falls, there's not much effect on wage wages. When unemployment falls quite low and is below NAIRU, then when unemployment falls further, there's going to be a bigger effect on wages. This is just on the right, an estimate of this when you but it's very hard to estimate that in real time for any country. If you do it cross-country shown on the right, you do get this sort of curved effect. There's now a series of papers that are starting to be written and now the Phillips curve is back and how it's non-linear. And I think we just need to remember this lesson. There will be periods the relationship between unemployment and wage inflation seems weak, but if you push the labor market hard enough that unemployment is very low in well below any sort of equilibrium rate, you're going to eventually have some effect on wages. Estimating exactly what that that point where the break happens, though, is very hard in real time. That curve shifts, it tilts, it flattens. The breakpoint can move based on structural changes on where your neighbor is so very hard to use in real time. But I think that concept is important to remember. If you push the labor market too hard and unemployment falls too low again, you will get wage pressures and inflationary pressures. So you have to have that involved in the framework. It's not free to push the labor market too low, too hard. Final point on how things have changed is interest rates. A lot of the concern, which drove some of the changes in the framework of view was that interest rates would remain very low, so there was not space to lower them further when the next shot hit to stimulate the economy. So here's a graph of some interest rates in some of the big advanced economies people have talking to you for a while. So now I want to have you think for a second. Just look at that for a minute. Apologies to a few of you who saw me present this last week in Florida. So look at interest rates policy, interest rates in major economies. A couple of things might jump out at you. One, for the U.S., we said a band now not a rate. So five in five and a quarter. Let's say that's the top of the band, 5 to 5 in a quarter where the US rate is today. Anything else jump out at you as odd? I'm tempted to con you, David. David but you might have seen my slides so you know it's coming. For those of you who follow markets minutely, you might notice the U.K. looks off a little. UK bank rate is now at four and a half percent, but market expectations are that it'll go to about five. So so maybe this actually shows where policy rates are expected to settle during this hiking cycle. But a couple of you might notice something else off. It's not that my IRAs have gotten unreliable. Instead, what it is, is this is actually not passing interest rates today. It's rates in 20 at the end at 26. The rate is where the interest rates are today. The average is basically the same. And I think this is just I picked the euro on purpose, obviously. But look at how similar these rates are. U.S. basically the same. You know, U.K. is expected to go where it was in 2006. Many of the others basically the same. I think this is just a reminder of we we spent a lot of the framework of you was on the period that was from the 20 tens. We thought the world was different. Rates would be lower, inflation lower, less concerned about a Phillips curve. But the world today might actually be just more of a return to a more normal world of the 1990s to thousands. We don't know. We don't know what world we're going back to. We could be going back to a world of the 20 tens where these interest rates get low again. Inflation is low again or we might just be back to a world is pre 2010 and that requires a different framework. So that's the key sort of takeaways I thought about this in aligns with the second paper by Gauti and Don is we need a framework that will fit these different environments. We don't know where the world is going. We don't know if inflation will be a big problem in the future. We don't know where policy interest rates will settle. We need a framework that is nimble enough for all of those. So what's that mean concretely? I'm first in a focus the changes on how these relate to some of these changes in the in a macro environment, global shocks are going to continue to be important in driving headline inflation, potentially core inflation and potentially risks of feeding through into the wage and price setting process. So it's just going to be hard to meet any 2% goal in any month. These global shocks matter. They're big, they're not going away. So I would I think on the table should be the consideration of a more flexible numeric target not having to hit 2%. It was Jason had just said maybe we shouldn't have done so much hand-wringing about being at 1.8%. That shouldn't be a failure. That doesn't sound so bad given the role of these big global shocks. So maybe we should have a band one and a half to two and a half percent and not again have to feel like you have to go to extraordinary measures because you're off by a bit. Given the role of global shocks, maybe we should shift to a model something like the Bank of England does, where you aren't aiming to hit a target in any given month, but you are adjusting policy interest rates to have inflation go to a 2% in two years time. So you let the global shocks fade and your goal is to hit that target in a certain window and not in any given month. In the same vein, I think it's very important to now that we are in a world of higher inflation, rely less on forward guidance, maintain more

flexibility. I think this was a mistake as we emerge from COVID that the Fed at tying its hands with its guidance, with its commitment about what it would take before it started to tighten monetary policy and also tying its hands through its QE program. By being so hesitant to talk about tapering and then talk about tapering and finally tapering. That made it harder for them to adjust rates in a more timely fashion. So beware of any of these sorts of policies that make you lose your guidance. You need to lose your flexibility. You need to be nimble to use Dave's words in terms of the changes where we are now in a world of higher inflation, where the Phillips curve is alive or at released on the steeper part of it. I think we do need to bring back a focus on the risks around inflation to the framework, a view back to a more symmetric framework. Echoing the comments we just heard in the last last paper, allowing the Fed to be able to adjust rates preemptively to labor market deviations in both directions. The asymmetry made sense. If you thought we would always be in a world of the 20 tens of low inflation, that part of the Phillips curve. But we're not. We need to bring the symmetry back and then the final. So key consideration is with policy rates now well above the effect. Of lower bounds. I think there's less concern about limited policy space. Again, I don't know where rates will settle. I think they'll probably come down, but probably not as low as they were before COVID hit. And this is where I think it would be. This would be a good opportunity to clarify the framework for other monetary policy tools. We've actually talked quite little about this whole new set of tools, which are now a standard part of the toolkit, and in particular talking about when you use asset purchases, talk about limiting asset purchases so they're easier to get out of when it's time to end an asset purchase program. So want then take longer to adjust policy rates. And also something which I can't believe we've avoided most of the day, some discussion of how you use asset purchases for financial stability concerns if you may be adjusting interest rates in a different direction. For example, the dilemma the Bank of England was in in October with the LDI crisis when they wanted to tighten monetary policy because inflation was still too high, but yet they had to buy assets for financial stability issues. I think it would be useful to clarify in advance ways that can be done. A separate, separate facility, a separate name. So it's clear you're not doing QE while you're raising interest rates, you're doing asset purchases for financial stability reasons. Shorter term, limited duration, you unwind them quickly like the Bank of England. Clarifying that in advance would be helpful. It's part of the framework of view. So finally, I think those are some of my suggestions at least to get the conversation going on what should be looked at in the framework of you. I think what's also important, though, is what is not up there. One thing that is not up there is going back to more formal rules. That was at a Fed conference in Midland in Florida last week, and there was a push for sort of more tailor rules, more formal rules. I don't think that makes sense, especially given all these structural changes. Also, what I did not put up there was shifting to a higher inflation target. I'm also surprised we have not had that discussion yet. Probably we will in the next panel, but I'll leave that discussion for the next panel. Thank you.

DAVID WESSEL: Thanks. So if I can call Ben and Olivier, Ellen and Rich up here, and because we only have five seats, I'm going to stand. And I'm sure that if Jason, Gauti or Don has anything to say, I'll find a way to put it all behind schedule. We're going to go, like, 15 minutes over. I think that Kristin gave a good start to what I was hoping we can do in this session, which is try and put a few things on the table for the Fed when they revisit the framework, which they're scared to schedule to do in 2025. Think somebody suggested someone I know suggested Jay Powell, that they do it sooner and he winced. So I don't think that's going to happen. And maybe some of these issues will be clearer by then. Maybe some of it maybe, maybe Kristin's chart of interest rates will look less like 2006 and more like 2019. We just don't know yet. But Ben I wonder if I could start with you before the Fed put out its framework, you had articulated, I think it was a speech at Peterson where you talked about temporary price level targeting. And the idea was that we'd have an inflation target in normal times. But when we ran into this awkward situation with the zero lower bound, then we'd have a period where they would target the price level. And I wonder in light of that and there was a lot of similarity to that in the new Fed framework. Do you think that that's a good idea? Do you think that the framework should be different in 2025, given what we've just gone through? Or do you think we landed in a good place and we just had a bad run?

BEN S. BERNANKE: I don't I don't think the temporary price level target has anything to do with what donegall t we're talking about, which was the lack of preemption and holding to zero the temporary price. The military doesn't talk about employment. It's about. And we had a paper with John, I had a paper with John Roberts and Michael Kiley where we did simulations to try to figure out what was optimal. And what we found was it really, once inflation had been established at Target for around a year, then you could begin a process of of increasing as some as I think Kristin pointed, others pointed out, when you have a downward bias on

inflation because of the effect of lower bound. If you're target and maybe this is maybe this should be formal, if your target is, say, inflation or inflation expectations in two years, then there's got to be periods of overshoot. And that's just part that's the logic of this. I think the revision is going to have to take into account the fact that, you know, that we won't be necessarily at the zero lower bound, you know, all the time like we thought might be the case before, but that should still be in it because that, you know, when you're at the lower bound, you've got to compensate for the fact that, you know, you're not able to keep inflation up to the target all the time. You need to have some overshoot. So I don't think anything.

DAVID WESSEL: What would you do different if you were rewriting the framework now, 2020 framework?

BEN S. BERNANKE: Well, again, I think I think there's depends how much you think of the September December 2020 guidance as part of the framework. If it's not part of the framework, then I think I would be a little more fuzzy about the full employment concept. Recognize that there are multiple indicators, for example, that should be taken into account. I would talk about having a period of time to reach the target that, you know, doesn't have to be at the target all the time on forward guidance. I think. So I don't want to go into a decision versus Delphic for guidance. I think there are times at lower bound where we're very tough for very clear, explicit for guidance is quite helpful. And so that should be part of the toolkit. When you're away from the zero lower bound transparency demands that you give some idea of where you think the economy and policy are going. But it could be very general. And in those cases, I think that we we the Fed, that we need more of the Fed needs to have a better way of communicating, that these are very provisional, these are subject to change and so on. So an indicator of the certainty of the guidance, as well as the guidance itself would probably be a useful addition.

DAVID WESSEL: Rich Okay. We give you full credit for all the good parts and the bad parts of the framework. But you're no longer at the board. So and I want to compliment both Gaulti and, and Olivier have been quite humble and say where they made mistakes. So I invite you to follow that spirit. What not What would you have done differently in 2020? Because you've talked a lot about that. But if we revisiting the framework in light of recent experience, what would you recommend? What issues be on the table?

RICHARD CLARIDA: Well, this has been a great session and I do appreciate it as well. The idea that this will become a lot clearer when we actually see how this episode ends up, But I appreciate getting a head start on it. I'd say a couple of things. I think, you know, within within the building and when we did the framework review was pre pandemic. So we were still in the Eccles Building. We always thought of the framework statement itself is I think Jim Bollard has used this term quasi constitutional. The framework statement has no nothing in it about forward guidance. QE, as did the 2012 statement, had no reference to that either. So in our own mind and in my mind, I always thought about the framework statement as defining goals and and priorities and then the implementation. Obviously myself, I think I gave six speeches as vice chair, including two at Brookings, on how I read the framework statement and implementation. And to me, the most straightforward way to do it was essentially for the committee to decide based upon having been at the zero bound when it would make sense to lift off using the totality of data labor market, data, inflation expectations, and then at that point to essentially revert to traditional inflation targeting. I still think that makes a lot of sense. I think it's entirely consistent with the existing language, but certainly I think something in that direction makes sense. I will say that, you know, with forward guidance like we're there, you know, the law of diminishing returns is relevant. There are there are costs and benefits. And certainly if you look at the forward guidance that the committee offered in September of 2020 and December of 2020, you know, the cost benefit of the guidance on the balance sheet I think was a close call then. And in retrospect, I think and I made this point in some talks I gave here in papers I've given, I think I think the guidance, very specific guidance on tapering and talking about tapering did put in a lag of several months, six months, some number of amount of time between when a lift off would have been called for and when the committee committee did. So I think, you know, critically thinking about cost benefit of guidance is is is relevant because obviously one option is if the world changes, you just abandon the guidance. But what was interesting about being on the committee at that time was that there was a perceived cost of abandoning the guidance given the prior comment. So I think I'd make those two points.

DAVID WESSEL: Ellen, you look like you had wisdom to share.

DONALD KOHN: No, I just wanted to follow up with a comment on the the tapering in the guidance around that. You know, this is another place where I think mind set and what you bring from past experience were formative. You know, back in 2012, there was this little episode called The Taper Tantrum. And and it really did ruffle the Fed and communications had to be worked out. And, you know, I remember then Chair Bernanke saying tapering is not tightening. I don't know how many times he used that phrase to to convince markets that, you know, a discussion of tapering did not mean that the Fed was going to lift the policy rate from zero imminently. And so the whole procedure that was laid out, which really made sense at the time because the recovery was so slow, allowed the Fed to. Proceed very, very slowly. And even then, once tapering ended, there was still more than 12 months before the policy rate was lifted. You know, picking that apparatus up and plopping it down into the current environment really was just not the right approach this time. And so I really agree that, you know, that whole thing needs to be looked at, including the idea that you might begin to lift off before your taper is completed, as suggested.

DAVID WESSEL: Okay. So just to make sure I understand, Rich, I think you're saying not much needs to be changed in the framework, but we need to give more thought to how we use forward guidance. And Ellen is saying a good research question before we get into this again is how do we think about tapering and stock versus flow?

KRISTIN FORBES: I just have a quick comment on that. One partial solution is to when you do QE programs, do a fixed amount for a fixed time. I think.

KRISTIN FORBES: Downsides as.

KRISTIN FORBES: Well. Right. But the Fed should be credited for being sensitive to the risks around tapering. When the Fed adjusts its program. There could be global implications and it's very hard to assess what those are. So big credit to the Fed for being more sensitive. But a good counter-example is the Bank of England. When they did their QE programs, they announced a fixed quantity, which so the default was it ended and then you didn't have to worry about messaging. How do you when getting ready to talk about it? There's the default built in to markets as an end date, and that end date is often wrong. I think the bank of them probably ended a little, but at least there's an end date on the books. That's the default and it's not enough, which often happened. Then you can always do more. But then you get, if anything, the announcement affected doing more. But again, it's the end is marked, priced in, marked in less risk of ending it. And if the date's off by a couple of months, that's still a lot easier than a I'm.

DAVID WESSEL: Struck by how hard it is to focus the conversation on strategy because we keep going to tactics. Olivier. Well, I saw you making some notes. I don't want to preempt anything you'd say, but I am interested in your current views. On if the Fed is revisiting the inflation target in 2025. What would be the smart thing to do then, given what you've said in the past?

OLIVIER BLANCHARD: So I think in the abstract the argument for having a higher target inflation remains very strong. And Kristin may be right that our store will be sufficiently high that we don't have to worry. But I worry. I mean, they remember what the assessed probability was when we decided on 2%, which was zero, and it turned out to be 100. So it seems to me that it would be good to increase the inflation target. I used to be of the 4% opinion of concluded based on the number of papers that at 4% they salience about inflation. And that starts changing behavior in ways which complicate the task of of a central bank. So I have downgraded to free from 2 to 3 but I hear is well 1% who cares. 1% is what we got by doing QE. So one way of thinking about it is if we had had the target of 1% more, maybe we would not have had to do QE. And I think on that we would probably be better off. I think QE is a very complicated set of measures to use with many, many, many adverse effects. So this is in the abstract. I realize that at this stage the central banks don't want to talk about it because they want disinflation and they don't want to change the target and it would be counterproductive for them to talk about it. But almost surely there's going to be a point where the issue is going to be there, which the rubber is going to hit the road. If I remember the U.S. expression for that, which is, you know, in the next six months, it's likely will be around free. And given that the wage Phillips curve is very flat, getting to two is not going to be trivial. And it may be very hard for the Fed to say, well, we have to go to two and we're going to keep interest rates very high. I suspect what's going to happen

is that the Fed is going to be more relaxed. It's not going to change the target, but it may not be in a hurry to get to two. And maybe along the way there's a discussion. But I think the argument is still very much there.

DAVID WESSEL: And you agree?

BEN S. BERNANKE: Well, I agree in theory, but I think the actual reality doesn't. Does it really support it? One thing nobody talks about is politics. The Congress let us put in an inflation target without being part of the process, and I had to consult widely with that. I remember we were here and Janet Yellen put up a video of the head of the House Financial Services Committee saying under no circumstances will you raise the inflation target. I think if you did it, you would have to consult with Congress and you might find out at the end that your inflation target is one. So I think it's a very big issue. The second thing is that, you know, whatever would have been the theoretical right thing in the beginning, and I think it's debatable. Right now, there's some very heavy barriers to making a change. Obviously, with inflation high, you don't want to, you know, give up the credibility that you're serious about inflation, don't want to change where the target is so that you can put it around the the arrow. But the other part is we've had a de facto 2% inflation target in the U.S. since the nineties, and that's built up a lot of credibility and expectation. I think the change would I mean, again, you know, I'm just trying to bring out all the issues. I think in reality the change would be difficult to maneuver and get people to find it credible. It would have disruptive effects on bond markets, for example. So I understand completely the argument in favor. And I've seen papers that say it would make a big difference. I think we got more than 1% of the QE, by the way. But but there are there are some real. Given where we are today, as opposed to starting from scratch, from, you know, the original position of you know, it's it's quite a challenge to make that change.

DAVID WESSEL: Carol, I should have asked people to identify themselves before I saw it now.

AUDIENCE MEMBER: Sure. Hi, I'm Carol Binder from Haverford College. My question is about the the role of possible Fed Listens events in the next framework review. I think the Fed listens events over in like 2019, 2020. Those are at the same time as there were a lot of a lot of papers, op eds, conferences about the possible threat of populism to Central Bank. And in some ways I saw them as like maybe a response to that, to kind of like, let's respond to what the public wants so that they will let us be independent. And so I wonder, like, to what extent any of you think that the Fed listened to events that led to some this led to some of the problems with the new framework and whether they're necessary or a good idea for the next framework review?

RICHARD CLARIDA: Maybe I'll jump in on that. I think for the Fed to seek input in that format was was not only important, but I think will be durable. You know, what the Fed does with that input is up to that. The committee's professional judgment. I think that there are elements of the framework that are worth revisiting, but I think one that has a lot of support, certainly when I left and I haven't heard any comments to the contrary, was what was Fed listened. But but again, that that's one of many inputs the committee will have. I think they will keep it in place to make the job. Well, I've got the microphone. I want to second something Kristin said in our framework review in the we released we then when I was there, released extensive we had seven rounds of briefings at the FOMC from from system staff. It wasn't just a board effort. And actually one of those briefings was a dedicated briefing on thinking about defining the inflation objective explicitly in terms of a band or a range. We chose we they the committee chose not to go down that road given the initial conditions, because the concern was if the committee were to find a range of, you know, one and a half to two and a half, that could reinforce the view that inflation would never get to do and then reinforce the challenge of inflation expectations sagging. And so wanting to get away from the 2% is a ceiling perception which other central banks have had to confront. But but the initial conditions will be much different in 2024 and 2025. And I think I would hope that the merits of seriously considering range could be entertained, because I think Kristin is right. When you're a central banker, there are always shocks, maybe fewer in the US than in the UK, but there are always shocks and success is really keeping inflation expectations anchored and I think you can achieve that. Was were the well thought through and communicated range. So I would hope that the committee does consider that next time.

DAVID WESSEL: Placement. Wait a minute. Let's go. Sack first. Brian Sack. The idea that there would be a silence and no one asking a question is just too much for Liesmen to take.

AUDIENCE MEMBER: When I ask a question, it's actually similar to a question I asked Rich in Hoover I think in 2019. Which is. I mean, if you could measure. Intermediate term inflation. Expectations. Accurately. Right. I mean, wouldn't the robust, the most robust framework approach be just put that in your reaction function and and react to it. I mean all these things about the lower bound. Causing this chronic bias. I mean. You could see that in. Five year five year breakevens. I'm not saying that's the measure, the perfect measure. But you know, they were below, too, from 2014 through 2019. They reflected this bias. But it seems like something like I think everyone almost any framework is going to agree that you want to make sure your long term inflation expectations are anchored. So to me, that seems like the most, you know, robust idea is just to react to that, to make sure that those are at a level consistent with your target. I was wondering if you had any comment.

BEN S. BERNANKE: I have a paper with Michael Woodford. He did all the hard math which shows that you get circularity in that kind of situation, but that the Fed says we're going to target 2%. The market says, Oh, okay, we'll expect 2%. And there's really he sort of can get to multiple equilibria and there are actually some problems with that. But but on the other hand, I have advocated what are Svenson calls inflation forecasts targeting. And you know, in principle, when you have lags, you don't want it to be a 2%, you know, an every Tuesday you want you want to have a path that takes you to 2% over a period of time. And I think one of the dimensions I think that several people have already said this one of the ways in which you can improve the tradeoff against employment is to be flexible in how long you take to to get to the official target.

DAVID WESSEL: Steve Oh, please wait for the mic so people on the Great Beyond can hear your thoughts.

AUDIENCE MEMBER: Okay. The circularity is a very good point. But I mean, the whole experience from 2014 to 2019 is I mean, we did see inflation expectations, at least measured in some measures like looking too low. So it's not like it's a meaningless, you know, idea that, you know, hey. Policy should react to that. And be looser to address that.

DAVID WESSEL: So if they're going after these question, I'm going to ask each of you to put even if you've said it before, one thing you think should be on the agenda when the Fed revisits the review, when Ellen Meade comes back to run it in 2025.

AUDIENCE MEMBER: David Sorry, this harkens back to maybe the last part. I wonder if Olivier and Ben would talk about the possibilities or probabilities of the immaculate disinflationary outcome from your paper. To the extent that it seemed too reliant on going back to the prior efficiency of labor allocation before the. Pandemic, it doesn't seem like an incredibly improbable outcome. So it's one of the great managers that. Thanks.

BEN S. BERNANKE: Well, again, there's an extended debate between Chris Walla and Andrew FIG. and Blanchard, Thomas and Summers about the likelihood of this. Apparently, historically, that doesn't happen very often. But of course, this is a very unusual situation. The issue is we don't fully understand why the Beveridge curve moved out. It has to do to some extent, perhaps with more reallocation taking place in the economy. It could be that people are more reluctant to come back to work and therefore they don't searches intensively. So it could be I raised the possibility without having any sense of probability, that over time we move in some direct, you know, to some, you know, back towards the original beverage curve, which would make the unemployment cost much less. It's not. Yeah. So but we don't know. Olivier pointed out that the most recent readings, unemployment has stayed about the same or actually dropped a little bit while the number of vacancies has come down. So, so far, so good for the, you know, for the immaculate disinflation folks.

DAVID WESSEL: Okay. One one thing that should definitely be on the Fed's agenda when it revisits review Yellen started on.

ELLEN MEADE: So I'd like to follow up on this comment that Don made about a little bit more discussion in the committee. While there were I think it was five meetings at which framework review topics were discussed, there was never a go round on the draft consensus statement that took place in a meeting. And,

you know, I went back to the December 2011 meeting as I was preparing for this, and that's really quite a discussion and quite an interesting thing about what is a framework statement, what should be in a framework statement, How do I, as a policymaker, see a framework statement? So I think I would encourage the committee to have a discussion that five years or six years later we could read and get a sense of their views.

DAVID WESSEL: Rich.

RICHARD CLARIDA: Well, I already weighed in on the idea of taking the range of the banned seriously. But the other point I would mention, and I want to second I think what was mentioned in some earlier panels. I think putting some meat on the bones of what is what is a, you know, broad based definition of full employment, there are ways to make that operational, including using, you know, labor market condition indexes, for example, the Kansas City Fed or even tying the tight labor market to some notion of the level of, you know, wage gains consistent with productivity I think would be quite useful. No one's happy with putting all the eggs in the used star basket since it moves around. And so putting some time, if not in the framework statement, then into operationalizing it I think would be quite helpful because as Mike, as my chart showed, both the Kansas City 18 Indicator index and the VIU Index were essentially saying mission accomplished by the fall of 2021.

KRISTIN FORBES: Well, I would say a bend, but since you just said it, I'll say it back to a more symmetric framework so the Fed can preemptively address risks. The inflation is picking up too quickly, not just when inflation is too low.

DAVID WESSEL: Olivier

OLIVIER BLANCHARD: So I was very much taken by Kristin's first point about the role of global shocks. I mean, and they may be the recommendation is even more for Europe, which is more or less only affected by global shocks at this stage. And it clearly limits the ambition of any central bank when you have these very large shocks. And that has to be taken into account more explicitly.

DAVID WESSEL: Ben.

BEN S. BERNANKE: Well, I guess I would say that there should be something about, given the lags of monetary policy, that the outlook has to be considered in making policy decisions with due attention to the uncertainty necessarily associated with that outlook. So I guess that's just a backdoor way of bringing back a little bit of preemption.

DAVID WESSEL: Great. So I want to thank everybody, including our panelists and Ben and and Gauti and Jason Furman. And I want to thank my team, Stephanie Cencula and Haowen Chen, who managed to pull off an event with the previous events manager on vacation. And thank all of you for your attention in coming. And you can rewatch this whole thing at your leisure at faster or slower speeds, depending on your taste.