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Markus Brunnermeier: So welcome back, everybody, to another webinar organized by Princeton for everyone worldwide. We're very happy to have Austan Goolsbee be with us. Hi, Austan.

Austan Goolsbee: Hi there.

Markus Brunnermeier: Austan is the president and CEO of the Chicago Fed, and he will talk about monetary policy in this unusual time. So we will run something special today. What is this unusual time? So when I think about it, three things come to mind. One is soft landing. So we have a vertical Beveridge curve. I will talk about that. And then we have a lot of monetary policy changes without monetary policy moves. And then also, we have in the long run, more structural, we have a different fiscal situation. The debt level will be much higher. What are the implications of that? So let me start a little bit to talk about soft landing. So we have a huge decline in inflation without a recession. And that's very uncommon. We had an earlier webinar with Alan Blinder going through the history of soft landings and non-soft landings, hard landings. The question is, is it primarily because energy prices just went down? We were lucky about that. And supply chain frictions were lifted over time. Or is it really monetary policy which moved it? The other thing is we still have a continued labor shortage. That's the case despite this huge immigration in the United States, about 6 million people coming in. And also in Europe, where in some countries there's some recession. So the economy is not growing so fast. But nevertheless, there's a labor shortage. This might also be because the Covid situation has changed the attitude of working from home and other different labor arrangements. But concerning the Beveridge curve, which is the labor market from a monetary policy perspective, you have on the x-axis, you have the unemployment rate. And on the y-axis, you have the job openings, the vacancy rates. And typically, when the unemployment is high, there are few job openings and when the unemployment is low, then you have a lot of job openings. So it's downward sloping. And you see this, you know, during the Great Recession, after the Great Recession. And the red line here is how the Beveridge Curve looks like this. And we're currently in the last few. Last year, we had soft landing, you see a vertical decline in the job openings, but not an increase in the unemployment rates. So that's a new phenomenon, that's like a soft lending phenomenon. And that could explain to some extent, we have to explain why this happens this way. But there are also other commentators out there who think we should not assign so much wage on vacancies, because in today's HR arrangements, just leaving a vacancy open, just let it stand as very costless, but you know, removing a vacancy, and then reopening a new vacancy later on is very costly from because HR systems are set up this way. So perhaps the vacancies are less meaningful, but overall, we see in the Beveridge curves, a very, very different phenomenon. And that's unusual. Let's put it this way. A second thing which is very unusual is that since the summer of last year, the policy rate has stayed pretty much constant. But if you look at the term spread, or the long-term interest rate, it moved dramatically. So term spread went up significantly, almost 100 basis points in the last summer to the fall. And now it came back down again. So even though the policy rate hasn't shaved that much, Wall Street's attitudes towards the longer rate has shifted a lot, and hence, people borrow on the longer-term interest rate, not on the short-term policy rate. The financial conditions have softened and tightened first and then softened. So there were a lot of policy moves without policy tightening changes, without policy moves.

3:50
And the third, that I think is not so common. It's quite uncommon around. But the other thing which is unusual, in a sense, is that we have unusually high debt. And even projecting forwards, we have a high debt level. So if you look after the Second World War, of course, we had more than 100% debt-to-GDP ratios here. That's from the CBO, the Congressional Budget Office projections. And then we had a huge increase in the debt level, also from the Covid spike. Then inflation brought the debt-to-GDP a little bit down because real debt was inflated away. But the projections going forward are going up significantly, almost to 200%, given the current projections, given the current fiscal rules and current government laws. That raises a question. Will this, in the long run, determine the long-run inflation? Will it be the monetary authority or the fiscal authority? And will there be more interference from the policymakers to central banks, and hence undermine central bank independence? Will there be a fiscal dominance regime, in particular, when the debt level is so high and interest rate increased by the Fed will actually lead to huge government expenditures. And of course, they have to cut back other expenditures. This is very unpopular. And there will be pressure on the Fed not to raise interest rates. So fiscal dominance might be a threat. And that's something one has to take into account as well. Of course, to determine how the inflation then will be determined, one theory is the fiscal theory of the price level. And typically, the equation is the value of all outstanding government debts in real terms divided by the price level. So that's the real value of all outstanding debt. It's just the expected present value of primary surpluses. Like typically, when we price assets, we use cash flows. Here, we just use primary surpluses. That's what the bondholders get. But there might be a bubble term. Because the primary surpluses going forward, they are all projected to be negative. So how can it be that the treasury value, really, the value of all US treasuries is positive? It's because there is a bubble term as well. And the question is, how stable is the bubble? Is there a danger that the bubble might be bursting? And so there might be additional uncertainty coming up in this dimension. That might also be leading to unusual times. So with this, I would like to go to the poll questions. And I'm grateful to all of you for answering the poll questions. The first question was, was the Fed policy key in reducing inflation? And the question is yes, because if the Fed would not have hiked interest rates so sharply, even though it was late, the inflation anchor might have broken. Or was it no, actually it would have come down anyway because supply chains were repaired, energy prices came down, and so forth. And the answer was 76% thought it actually was the Fed making sure the inflation is coming down. Only 24% thought it were other external effects. Second question was, is the strong economy, the strong economic activity, is a sign of overheating, yes or no? 16% thought it was a sign of overheating, no thought 84%. So there's no sign of overheating according to our audience. The third question is about. The persistent wage growth, will this prevent the return to 2% inflation? Is the last mile going down to 2%, is this the hardest? And here it's a yes or no, it's 42% yes, and 58% no. Fourth question, higher than expected trend productivity will continue, yes or no? Yes was 55%, and no 45%, so roughly half-half. And finally, the final question was, is risk in the monetary policy changes if it changes asymmetrically? So is it loosening too early, is it more

harmful than loosening too late? That's what 51% thought. So a majority, a slight majority for that. Loosening too late hurts more than loosening too early, that's 30%. And the risk is symmetric, it's 19%, almost 20%.

7:49 So it's a majority, I would say, a slight majority is that you shouldn't, loosening too early is the more dangerous thing to go, so there's an asymmetric distribution on that. So with this I pass on the mic to Austan, and we're looking forward to your take on the unusual time.

Austan Goolsbee: Thank you, Markus. I decided to go with this unusual time, rather than emphasize monetary policy from unusual people, and I would expect no less. I think your viewers and listeners' votes show them to be quite sensible. Some of what we're going to go through here, I'm going to emphasize in a way it's going to then become a straw man. But there are people who think differently than your viewers. Let me start with a couple of slides. I guess I would say I'm going to do two and a half things, if I can get this to work. I want us to think about what just happened in 2023. And that corresponds to the year I was on the FOMC. I started at the Chicago Fed in January of 2023 and was a voter on the FOMC. Went to the first meeting like one to two weeks after I started. It was an extremely unusual year. Markus, as you highlighted, I started early in the year calling the possibility that you could get a really substantial drop in inflation without a recession more than just a soft landing. I started calling that the golden path. And that though there were many people saying such a path was impossible, there were weird elements of the year 2023 that might make it possible. And as we look back, it was an amazing year for the dual mandate. We're going to look back on 2023. That was kind of the golden year. But the key thing is, well, what does that mean for 2024? Were the supply chain issues, the labor supply issues, the productivity growth, are these things that were one-offs that enabled 2023 to be as good as it was? And we should stop expecting that rolling forward into 2024? Or how do we think about it? Second, I want us to think about this question you raised in your poll about inflation expectations, the role of the Fed, and how much the credibility of the Fed was an anchor that allowed the golden path to be realized, if you will. And if we have time, I would be remiss as a longtime listener, first-time caller, not to talk to Markus himself about non-bank financial institutions and whether that colors our ideas about monetary policy transmission. First, let's just think about 2023 and the golden year, the golden path, something about the inflation dynamics. We had a huge decline in inflation without a recession, virtually unprecedented. We had many very serious economists and friends of mine, you'll remember Markus, one to one and a half years ago saying, cannot be done, impossible. If you're gonna get inflation down in any significant way, virtually all central banks have had to have pretty serious negative medicine to do that. And here are just some measures of core PCE inflation over time, and you see, we've got a really substantial drop. And even with the PCE data that came out this morning, which show a month of rebound, I think you wanna be careful extrapolating this little part. Ah, this might go back up a whole bunch. The main thing to see is that we had very substantial progress over a long-term basis. And if you have floating around in your mind a kind of a Phillips curve, the thing that makes 2023 quite different is if you take change in core PCE inflation on the right to left axis, and a measure of the unemployment gap between what is unemployment and what is the estimate of the neighborhood, let's say. We can use whatever measures you want, it's gonna show the same thing. 2023 has among the biggest drops in inflation on an annual basis in the modern history of the Fed.

13:04
And it's way down here in the left, bottom left corner, which is sort of not supposed to happen. Where unemployment is below the natural rate as people expect it, but we're still getting very substantial declines in inflation. And it's worth also remembering over here, this wacko point is also coming out of Covid. So there is a sense in which the immaculate disinflation follows at least partly the immaculate inflation. So there is an argument that this is basically just supply chain repair. And if you believe that it's supply chain repair, there are even people saying, then the Fed had nothing to do with it. That basically all that happened was the supply chain was down, damaged, and now the supply chain is fixed. And there is some element of truth to that story, and we're still engaged in every kind of a religious war over understanding the inflation of 2020 and 2021. It doesn't come from excess fiscal stimulus, excess monetary stimulus, and that it's fundamentally a demand side story, or is it this supply side story? Now the thing that I want us to note with the supply chain, and this is an index that the Federal Reserve Bank of New York puts out, and it's just a kind of a quantification of what you will see out in the reserve banks. We talk to local business leaders all the time, and their anecdotes, many of which are repeated in the Beige Book each FOMC cycle, they just kind of track these measures. It's true that this thing comes down substantially and now we're back to zero. So there could be an argument that's done. The supply chain is now fixed. We're sort of back to the pre-Covid times on the supply chain. So whatever happened in 2023 is over and you shouldn't expect any more benefit as you go into 2024. Be a little careful with that argument because one of the things that I would characterize that we learned, how team transitory, which is now translated into team supply shock, got the timing wrong was failure to appreciate the persistence of inflation, I think, by these spillovers from what the supply chain has a bunch of steps in it. And so as it started to go wrong on one stage, then it would move to the next stage and move down the supply chain. And that added a persistence of moving through the supply chain that we had not expected. We came into it thinking, hey, if it's a supply shock, it's gonna go away in three to six months. The San Francisco Fed – there's some research out of the San Francisco Fed that just tries to do a supply chain impulse response. And it has all the pros and cons that you would expect. But the idea that when you get a supply shock, its impact on the economy, and on inflation particularly, is not instantaneous. It takes some time to work its way through, call it a year before the supply chain works its way through. And one of the stark realities that we learned through the pandemic is this isn't a two month, six month process. It takes a long time on the way up, but my argument/question is, shouldn't we, as we look at this, if we're just getting to zero in the fall of last year, and this drop took a while to work its way through the economy and end up in disinflation, doesn't that same persistence argument that explains why the inflation was higher for longer than we thought it would be, doesn't that also suggest that the benefits of the supply chain repair will outlast simply when the index gets back to zero? And I think it might. And then the second thing I'd say is, I have been saying all along that a bunch of the supply shock wasn't just the supply chain, wasn't just energy prices, it was fundamentally, in large measure, about a labor supply shock, first negative and now positive. And what I put up here comes from a paper,

we have a kind of a predicted trend of where labor supply was supposed to be now. Labor force participation is substantially higher than it was expected to be at this point.

18:23
And people can get themselves twisted in knots a little bit. There's one tendency, some people say labor force participation is still below what it was before the pandemic. And that is not incorrect, that is true. It's just, remember the population is aging, the baby boom is retiring. It wasn't supposed to be back to what it was pre-pandemic. It was expected to be something much lower. So we're way above what the trend we expected. I think part of that, Markus, is immigration.

Markus Brunnermeier: This standard is calculated before 2020?

Austan Goolsbee: It's a long run trend. I believe this trend is calculated before 2020. I have to go back and check it. But it is a long run based on demographics, age, immigration, trends in labor force participation status of the various age and demographic groups, what you would expect it to be. And whether you accept this model, which came out of research done at the Chicago Fed or a different model, it's just important to realize the standard that you should measure labor force participation against is not what the level was pre-pandemic. Because there are a series of demographic trends that suggest that thing should have been falling. Now, I don't want to just say this is all supply shock, because, as you highlighted, it's a tight labor market. And in tight labor markets, like here's pre pandemic, in a tight labor market, where wage growth is high. It's going to pull people into the labor force, and the way to think about that is not a labor supply shock. If the price is high, you're going to get more supply. So there is some component of that. But I think that there was a major negative shock to labor supply from the pandemic, that that's unwinding. So that part of the positive supply shock is on labor supply. And the thing about labor supply is I think the lags, I haven't seen an impulse response for a labor supply shock, the equivalent of the one for the supply chain, but I think the lags are longer. And that kind of brings me into my, is it an old saw? It's kind of an old saw, or at least a repetitive saw. I've just been saying it over and over. Be super careful about wage price dynamics when using the wage data to predict in the near term what's going to happen with inflation. I appreciated that your listeners and watchers, Markus, did not fall prey to this issue that if wage growth is above ‘x’, then that means inflation cannot come down. In the long run, we basically believe that inflation is going to equal wage growth minus productivity growth. We'll get to the productivity growth thing in a second, but the question is the wage growth observed consistent with target inflation? You got to remember that we think wages are stickier than prices, so you've got to be really careful. If a shock hits, prices will go up, then wages will go up, then price will come down, then wages will come down. You want to be very careful in the short run saying, “ah, but look, wages are high. so prices can't come down.” There was a lot of discussion like that at the end of 2022, that wage growth is high, so there's no way price inflation can come down because labor is three quarters of the cost basis for a lot of these industries. And yet it did come down, price inflation did come down because I think when making that argument, that's a long run steady state argument, that's not a short run dynamics argument. And this whole discussion where we kind of had an argument about this informs, I think should inform our thoughts about the, well, how long will, if we are getting positive labor supply shocks, should we expect that to last in an impulse response sense even longer than the impulse response from improvements to the supply chain?

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And I kind of think that we should. And this is positive literature. And a lot of it is cited in this paper by Gadi and Luojia, which came out of here at Chicago Fed and I refer folks to. But it's fun to think about those. Yeah, what'd you say?

Markus Brunnermeier: Peter Kahn is asking a question from the audience. There's a huge surge in immigration. Do you think it also played an important role?

Austan Goolsbee: Yes, yes, absolutely.

Markus Brunnermeier: Well, how do you see this going forward?

Austan Goolsbee: Well, I think of that as a, that I think of as a labor supply shock. And we had a huge negative labor supply shock on immigration at the beginning, even starting pre-Covid from policy changes. But in Covid, immigration drops to zero. That's something like the majority of labor force growth in the United States in the pre-Covi period is immigration. And now we've had a rebound of immigration to at least at the flow levels. every bit back to what it was pre-Covid. It didn't overshoot to refill the hole that was lost, but I think that the rebound of immigration is part of the labor supply that's coming into the market. And I do think that even if you think immigration cannot go up as much as it went up, it went from zero back to where we were, it's not gonna go up that much again. It's still worth thinking of, if that just happened, how long is it gonna take for that to wind its way through the economy? And I just think there's a dynamic component that it's worth considering.

Markus Brunnermeier: Do you think there will be a challenge too, because of the composition of immigration, how much high-skilled computer scientists are coming in relative to low-skilled workers, do you think that has implications for inflation too, or that goes too far?

Austan Goolsbee: I don't know, I mean, what do you think? That’s clearly relevant for the wage distribution and for income dynamics. I don't know how much, what the magnitude is for the macro economy, what do you think about that?

Markus Brunnermeier: I think it's primarily a distributional thing. So you will keep the low skilled wages low and lower and the high skilled wages will go up further. And that might be causing tensions in other dimensions. But typically, with high skilled wages, they have a lower marginal propensity to consume, so the inflation implications are probably not so dramatic.

Austan Goolsbee: I see. So for the business cycle, that sounds plausible. It would definitely be worth somebody doing some research on that.

25:45
Markus Brunnermeier: But in terms of, you know, there was this high inflation of 10%, which eroded a lot of purchasing power. And you have to have some catch-up later on. So do you think we caught up already fully or we still have to catch up? You know what?

Austan Goolsbee: I'm going to call an audible here and go into my appendix, and let's just think about the composition of core inflation. The thing to remember is in this pre-Covid period, we were at the target. We were actually below the target. It can be a little more inflation than what we saw pre-Covid and still be perfectly consistent with the 2% target, but the thing to remember is if there's housing, services, and goods, we were at or below 2%, not by everything being at 2%. Goods were at minus 1%. Housing was at 3% to 3.5%. Services were 2.5%, let's call it. Because that added up to less than 2%, you could add, let's say, a half a percent to any one of those and you'd still be at two. Fundamentally, the supply chain stuff leads to this, core goods going through the roof. And as the improvement of the supply chain has happened, core goods is now back down to very much what it was before Covid. And core services, we know to be more persistent. We kind of thought, "hey, this goes up. I think a large measure of that is from labor. You get a negative labor supply shock. It's gonna wind its way through the economy and it's especially gonna wind its way through in services." But we've actually seen substantial improvement on core services too. The thing that is both the puzzle and the thing that I'm watching the most and I'm still trying to sort out is why hasn't housing inflation improved more than it has? You see there's some progress, but it's still running way hot compared with what it was before. And that's, I think I've got, it's even more of a puzzle. If you go look at a bunch of market measures, they really bottomed back out and they're absolutely back to what they were before. And maybe that just has to work its way through with a lag, but that's been the surprise. This is the thing that's weird. And that's why I still think let's keep our eye on housing and try to figure out why it isn't improving as fast as we thought.

Markus Brunnermeier: But I think it's mostly the way the statistics are measured in housing, or is it because high interest rates slows down the housing supply, new house buildings are going down.

Austan Goolsbee: Yes, I'm super interested and puzzled by that. I thought I would have put three quarters weight on, it's just the way it's calculated. But that has led me to every month be like, okay, now we're going to be back in business. And so far, it hasn't. I still think that majority has got to be the way it's calculated. The issue about supply, I think we're gaining appreciation about – my puzzle has been, shouldn't that always be true? The fact that somebody is locked in at a low rate and they don't want to sell their house because it would mean getting a mortgage at 7% instead of 3%. That felt like it should always be true about monetary policy. Whenever you start raising rates, there will be a short-run transition period of people who were locked in at the other rate. Maybe it would be more prevalent now because we raised the rates as quickly as we did, so there's more there. But fundamentally, that's got to be a short-run phenomenon.

Eventually, people are moving because they retire, because they're taking jobs, because whatever, and we ought to work that through.

30:29
But it's certainly, as you raised, that's certainly a possibility of part of what's happening with this series. Okay, let's see if I can manage to get us back where we were. No, close enough. Okay, so that's what's weird in 2023. I think that a large measure of what happened is reflecting that supply is improving and fixing what was broken, and that looks like a supply shock. And I think part of that drop in the Beveridge curve, the vertical drop in the Beveridge curve, is actually telling you that it's not on the same Beveridge curve. There was some supply thing shifting in there. I will at least say that as it was happening, I was recognizing it enough to say that was my explanation partly for why we could pull off a golden path was we're going to get back this supply chain. We talked about the wage price dynamics of why I still feel like we might get further benefit in 2024 from the supply chain working its way through, just like we got further negative when the supply chain worked its way through on the way up and made it more persistent. But now let's just think about that last term in the basic equation, which is inflation is wage growth minus productivity growth. Up to the beginning of 2023, it was not looking too good for team productivity, okay? From the initial jump in productivity, which was almost certainly due to composition effects and stuff like that, from here to there, it was like, “yikes, we got two and a half years with trend negative productivity.” And so if this was the productivity trend, we better get used to disappointment if we're going to have that. Starting somewhere around 2023, productivity growth begins going up. And for most of this period, as you know, Markus, productivity measures are extremely noisy. So that’s why we don't usually key our short-run policy decisions around measured productivity growth, because there's just too much noise and too many things going on. Now that said, it gets back to this trend line. That's already a – is it a triumph? Kind of a triumph. There were a bunch of people saying, we should get used to disappointment. Trend productivity growth is never gonna go back to what it was pre-Covid. Not only do we get back to it, we now have almost a year of much faster than trend productivity growth. I don't need to tell you or anyone else: if that continues, that's the greatest thing that ever happened to us. It would certainly have an impact on monetary policy. Part of what allowed the golden year to take place is we had really substantial productivity. So we could be having robust GDP growth, a very strong job market, even below NAIRU levels of unemployment, and yet we had seven, eight months in a row of inflation literally at or below the 2% target. If this continues, and I'm not saying, probabilities are this thing is just going back to trend and we should take the win that we got back to productivity trend. But if that thing continues, we're absolutely going to want to monitor that and that will have direct implications for monetary policy. That moves us to section two, which is shorter than section one, so don't be fearful. But all of those conditions that I just described had nothing to do with the Fed in a sense. The supply chain would have fixed on its own. The labor supply, the immigration, that stuff would have fixed on its own. The productivity is, it came out of magic. Let me say one side note about the magic of the productivity part. You might be inherently skeptical of believing that productivity growth would continue if you can't really explain where it came from. And it can't be AI. AI is this tiny, there's no way that that can explain that the whole economy in 2023 is productivity. Chad

Severson gave a speech. He's my old friend and co-author. He gave a speech at NABE in which he highlighted, yes, look, it's noisy, it might just go back to trend, but there has been a substantial rise in business dynamism back to old level.

35:54
So the new business formation was relatively low and constant for a long time and for whether it's because it made us change our views of the world or we don't like working in the office or whatever it is, new firm business applications are up and they've stayed up. And even if it's not permanent productivity growth increases, if we're going to get productivity growth increases like this for four or five years, I still think it's going to be highly relevant to our monitoring.

Markus Brunnermeier: Do we know in which sectors this business formation increased a lot? Is it across the board or is it...

Austan Goolsbee: The “we” is doing a lot of work on that question. If somebody knows, I don't know. It's not across the board, I don't think. But I don't have it.

Markus Brunnermeier: No, I can imagine that, for example, if you're in the tech space, if you want to start up a new tech company, the fix-up costs are much lower now.

Austan Goolsbee: So look, this all might be internet companies that weren't old in the old days. If you say, what do you do? I'm self-employed. They say, oh, so you don't have a job. Now, what do you do? I'm the CEO of my own startup. Yes. But it didn't change suddenly right then. You see what I mean?

Markus Brunnermeier: What about CapEx investments?

Austan Goolsbee: You're exactly – I just had one slide that I put in the appendix. I refer everybody to the Severson keynote address that it's worth at least considering maybe there are some fundamentals behind the increase in productivity growth. Maybe it's not just totally random and we can't think what it is. OK, now let's see if we can get us back. So now let's think about the role of the Fed. And you've even had some people publicly saying, ah, the Fed has nothing to do with it. I don't agree with that. It sounds like your listeners don't agree with that and you don't agree with that either, Markus. And the thing that I'll say that I also highlighted when I said I thought a golden path for 2023 was possible, part of it was the supply chain was fixing. Part of it was maybe productivity growth is higher. And part of it was we don't have to fight the second dragon of getting inflation expectations back down as well as the dragon of getting the actual inflation down. Okay, and we can go through, there are many measures of inflation expectations and I don't want us to get too bogged down in it. My claim is no matter what you use, it's basically gonna show you this, that fundamentally in past times, when we had high inflation, the 10-year inflation expectations went up with inflation. That makes it extremely hard. The root of why is the Volcker period, as tough as it is, and had to have as deep a recession as it has, is they have to get down the red line and the blue line, because the blue line is where things are going to settle back. If you hold everything else the same, the natural settling point for inflation, I think, is going to be back to the blue line. If you look at what just happened in Covid, we have a soaring of core inflation, headline inflation even more, to 9%.

39:50
The Fed said, we will get it back to 2%, and fundamentally, the world believed that, and that's critical to actually actually pulling it off, A. B, is why I'm extremely, what's the right word, I am against the people who were so convinced that inflation could not come down, that they called for the Fed to change the inflation target, make it 3.5% and declare victory, no, no, no, no, do not do that. Look, you gotta – the essence of why the blue line did not go up, when the red line went up, is that people believed the Fed when it said, do not pay attention to the inflation rate headline of today, we're going to do what is necessary to get back to target. If you abandon the target, then you just made life harder for the next.

Markus Brunnermeier: We still have to be grateful to Paul Volcker for helping us.

Austan Goolsbee: Absolutely, we do. Absolutely, we do. And I keep, he was a, Dear friend and mentor of mine, I worked through the financial crisis with him and his widow gave me the original two by four that they sent him. It says, please lower these insane interest rates. I keep this on my desk to remind us that it was hard earned credibility right here. We carried it out. In a way, the second part of the legacy of the battle against inflation is that when the Fed now says, we will get back to target, fundamentally, they believe it. When they believe it, to me, that anchors where we clear out the supply, first supply got worse, then it got better. I just did that backwards. First, it got worse, then it got better. The labor supply is going to filter through. All those things are going to filter through. And then the question is, and then where will we settle? Once all of that is done and we're back to a steady state, where will we settle? And I think where we will settle is back to the blue line. And it didn't go up. And so that's why I think there is a fundamental force that's pulling us back to the 2% target. And we're making progress.

Markus Brunnermeier: But it's still the case that even if inflation goes back to 2%, the price level will be higher.

Austan Goolsbee: No question. We still lost some purchasing power. No question. There's no question. The price level will go back. Because we don't have a price level target. The Fed's job, by law, is the dual mandate. We stabilize the prices and maximize employment. And that's what we're going to do. As a thought experiment, I think it would be hard. If you said, we want to get the price level back to 2019, what would the Fed have to do to do that? A, that's not what we've said the target is or what our rule is. But even if you made that your target, that would involve draconian – how would you generate the deflation necessary to do that? I think that's what we're thinking.

Markus Brunnermeier: Are you also saying that the average inflation targeting, which the Fed proposed as a framework in August 2020, I think, is not really something which is still pursued?

It was stated very vaguely, in a sense. It was not clear how many months or years you take the average over.

43:45
Austan Goolsbee: Yeah, it was both flexible and average.

Markus Brunnermeier: If you're going to be strict on average inflation targeting, you should actually now bring inflation to negative territory in order to have an average 2% over five years, let's say.

Austan Goolsbee: I see where you're going. I see where you're going. And I don't disagree that the principle of average targeting is something about both overshooting and undershooting. The only thing I will emphasize is we went almost 10 years under the target. So that we're over the target, in a way, you gotta think about that. You gotta think about that, how much of this is making up for that. And that is a little complicated. I mean, you're a world expert on that. What do you think? What is your window? That's kind of the question. What is your window of averaging?

Markus Brunnermeier: I mean, if you do inflation targeting, essentially the window is one year because we measure inflation over a year.

Austan Goolsbee: No, no, no, wait a minute, wait a minute. You could say that it is one year, but then you have made a choice about ignoring the past. So if I told you that for nine and a half years, we were under the target. How does that affect you the year after that happens? This one year window argument says we can ignore that. I don't know if you can ignore it. I think we got to think about that too.

Markus Brunnermeier: Average inflation targeting seriously, I think then the question is how many years you take into account. And that I think should depend on the average maturity of debt contracts and also on the wage stickiness. If the wages are sticky over three years, then you might take the average over three years. If the average maturity of a debt contract is five years, then you might tilt towards five years.

Austan Goolsbee: That is a fascinating idea. And look, as you know, we publicly announced the Fed is going to be considering the framework in the next year. And I will expect no less than a public comment from you, Markus, outlining what the components should be in factoring in that window and thinking about average inflation. I do think a cousin issue, it's not exactly analogous, but it is a cousin, goes back to your initial slide about the monetary policy that didn't come from policy change. That is the market long rates going up, coming down. The financial conditions index also has a window. In a way, my intuition, when people will wring their hands a little bit, when they'll say, “ah, the Fed SEP came out, and then the market moved in a certain way, and the market moving in that way, loosen the financial conditions. If they were trying to be tighter, now they have to worry because the market's interpretation is loosened.” In December, the SEP came out and it said there would be predicted or projected three cuts in 2024, and the market jumped to six cuts in 24.

47:10
And so some financial conditions indices would say, look, that's loosening in and of itself. My read of the evidence is that the, let's call it the lag of market moves on the economy, the proper window to think about that is fairly long, is measured in years, definitely not days or weeks. And so that gives me the tendency to kind of look through movements like that, because the discrepancies between what the market thinks the rates are gonna do, and what the Fed's SEP median projects, tend to close over time. They don't remain huge for long periods of time, because like one of our board of directors put it, he said, he tells his people, we can fight the Fed as long as we want. But the last time I checked, the Fed is undefeated. And so in a way, the market is going to react to and correct the short range base.

Markus Brunnermeier: As long as the Fed is steadfast, following its own…

Austan Goolsbee: And the Fed is steadfast. As long as the Fed is steadfast, I agree with that.

Markus Brunnermeier: It's a little bit like what I find surprising, that there's a lot of wishful thinking in the market that the interest rate will come down. And it is the opposite of what happened in the 80s, when Volcker, people thought the interest rate will stay high, because people were familiar with high interest rates. And they didn't think Volcker would sustainably bring the inflation down. It's similar here.

Austan Goolsbee: Oh, that's interesting. That the market always thinks the interest rate will come down again. My only addition to that thought is this thing. If you predicted that there will be seven rate cuts in 2024, and there's a meeting or two where there are no rate cuts. There's only eight meetings a year. So the market is going to find out quickly what the Fed is doing, and they're gonna adjust. And you saw throughout 2023, and even at the end of 2022, multiple points, usually when the SEP comes out, then the market would say, well, they say this, but we think they're gonna do something different. And I just caution everybody to go back and read the post-mortem about what happened with Silicon Valley Bank where I couldn't understand why they did not hedge the interest rate if they had such exposure. And the answer was they did hedge the interest rate, but then they concluded that they didn't think that the Fed would carry out what it said it was gonna do, so they got rid of the hedges, because they said they could make more money that way. And then actually the Fed did carry out and was steadfast and kind of blew them up. So they're definitely a risk of betting against the Fed being committed to what it says it's gonna do.

Markus Brunnermeier: Very good.

Austan Goolsbee: Okay, so let me just last, let me just emphasize, in this environment where expectations are anchored, well anchored, and where I still feel like there is supply benefit coming through the system on both the supply chain and the impact of labor supply. It is worth our thinking: how restrictive are we? You know, what is policy?

50:53
And I think rates are pretty restrictive when measured by the real federal funds rate, compared to historical, compared to what the SEP median says we expect long run real rates to be, this is a restrictive environment. And so as we think through what each of us on the FOMC or each of us observing in the market thinks should happen, I still think the question is, how long do we want to remain in this restrictive territory? And the argument that I appreciated, again, that your listeners did not overly index on quantity numbers as a sign of overheating, you got to be extremely careful in periods where there are positive supply shocks happening, over-interpreting quantity data as indicators of overheating. So there is one logic that says inflation was good, but GDP was really high. Inflation was good only because of the supply chain. So as that goes away, if GDP growth is over three, well above trend, and the inflation is going to come back up as those supply shocks work their way through, now we're going to be overheated. What I think is a little misleading about that is the same thing as the supply shock unwinds, the same thing that brings inflation back to trend would bring output down to trend as well. So we're going to be in the environment where we're thinking about how restrictive the rates are and do we want to maintain that level of restrictiveness going forward. If inflation keeps coming down, it will be making the real restrictiveness go up.

Markus Brunnermeier: I guess the key is how much to attribute to productivity growth.

Austan Goolsbee: That's a great point.

Markus Brunnermeier: And then if the productivity is very high, then it's not so restrictive in a sense, because you should have a higher R star.

Austan Goolsbee: Yes, I agree with that. If you had a permanent change to growth rates, it would change your permanent R star. I guess in my mind, if you think that the productivity growth thing is real and will be persistent, I wasn't thinking of that as a permanent change. I'm thinking of that as like, let's call it a three to five year shock. And if so, that makes it more complicated, but we'd have to think it through. I do think you're right. The productivity growth rate will affect what you think the R star is, if you want to think of it in that model. It's an area that we should consider on a research side. If you take a step back in sophistication and just say historical, it's pretty restrictive. We're starting from a pretty restrictive real funds rate and it's worth thinking about those. So I went longer than I expected. So I'll just put on the radar screen and Markus, you will keep writing papers to emphasize that however you want to measure it, non-bank lending, the rise of non-bank financial institutions is pervasive, is as a share of the total, is higher in the U.S. than in most other places. It raises a bunch of questions that I still think we're just learning about. of how does the monetary policy transmission mechanism remain the same or change in a world where finance is not primarily banks. And there are places where it can go either way. There are some ways in which you might think it attenuates the impact of monetary policy transmission. If say there are substitutes that, ah, it's gonna, you know, bank funding gets more expensive but it shifts the lending out of banks into non-bank lenders who are not as directly affected, that would kind of dampen the impact of the monetary policy channel.

55:44
And we've got some research at the Chicago Fed that's a fascinating look at auto financing. So if you look at auto financing, it's majority now non-banks. And so there might be some, there might be some dampening of that channel. But then there are others where the non-bank channels are more risk-taking and the issues of short rates impact on the economy versus long rates might be getting greater. And they might be encouraging more risk-taking, shift to higher risk-taking. They might react more to monetary policy. And this is just a fascinating area. Anybody out there who's thinking of doing research in the kind of macro plus financial space, this is a very fruitful area that's worth looking at, I think. So with that, Markus, I'm done with my slides.

Markus Brunnermeier: Can I come back to your Phillips curve picture? Yes. Because perhaps it's not the change in core PCE inflation should not be on the X-axis. It could be if we take it relative to the inflation expectation relative to the anchor, then 2023 might not be so radical.

Austan Goolsbee: Might not be so radical. Explain that more. Why wouldn't it be radical? If we look at that expectation slide, it is stable. But this drop relative to this still seems like a major outlier in a way.

Markus Brunnermeier: But the inflation level is still high.

Austan Goolsbee: But the inflation level is still high.

Markus Brunnermeier: It could be more extreme, like an old-fashioned Phillips curve. But instead of the change in inflation, we put just inflation levels on the x-axis. Then 2023…

Austan Goolsbee: Markus, you're one of these, you're like the birthday magician's nightmare. He's like, ta-da, it's got, no, wait a minute. You put the card in there, he's got it behind his neck. Look, I think you're right. I grant your point of any particular measure. If you take a step back again in sophistication and just say, was it on anybody's bingo card in 2022 that you could cut inflation, whether headline, core, whatever, by this kind of magnitude and not have a recession? It was on very few people's bingo cards. You had smart economists that I respect, Larry Summers, Peter Henry, others, saying things like, Larry said, “we got to have to have unemployment go to 6% for five consecutive years before we would see inflation come down.” I think no matter how you measure it, you're going to find some version of 2023 is weird and not on your line, which is to say, it wasn't on the same Phillips curve. The supply was moving around it.

Markus Brunnermeier: Yes. No, it's fair.

59:06
Austan Goolsbee: But let me come, you know, Peter Henry and Anusha Chari paper was is the one that I'm talking about was a very interesting paper was mostly not on the U.S. case was it was a lot of international evidence, but, but there were a lot of folks saying that.

Markus Brunnermeier: So do you think we will continue the golden path? Because you know, normally we stop our webinar always with a positive note, but your note was so positive. I think, let me first ask you, do you think we will continue and then perhaps this time we have to end on a negative note, just balance it a little bit, saying what keeps you up at night?

Austan Goolsbee: Oh, yikes. Yeah. Well, look, there's two parts of that. As you know, the job of a central banker is to worry about everything. And to stay up at night, you know, that that's our job. We're the night watch. And so I still think that the things that make me the most nervous, and it's a good position to be in, but they are external shocks. And tougher, soft, easier soft landings than the one that we're thinking about now were derailed in the recent past by external shocks. And how can you not look around the world and say, yikes, there are a lot of possibilities of external shocks, whether in China and the Middle East and in commodities markets and a whole bunch of things. The deeper question about "is the golden path to continue?" – partly I don't wanna jinx it. That's why I like talking about 2023, because it's done, that's closed. 2023 was the golden year. If it were to continue in possibility – that was a weird way, that was like a Yoda-esque way to say it. If it is possible for the Golden Path to continue in 2024, I think it would rely on these issues about the length of the transmission mechanism for things that already happen. I don't think if you look at the labor force participation, or if you look at the supply chain indices, we're not going to get the increase that we had, again, so the beneficial part will just still be what's working through the system. Hopefully, if we're returning to normal, we're going to be back to a circumstance in which all the lessons, accumulated wisdom about monetary policy will once again apply. My only thing, and actually, it's the perfect because it brings us back to the title slide, is about this: the unusual! 2023 was extremely unusual because, I won't say very unique, because that's wrong, logically wrong. There's only unique or not unique, but there's unusual and then there's unusual. And this was one of the extreme unusuals because of those supply shocks. But I still think there's a decent chance that we get a little more positive coming from that.

Markus Brunnermeier: Finally, a last word. You know, of course we had a huge fiscal stimulus still going on. I mean, we still spent six, we have a deficit of 6, 7%. I'm not sure whether you want to comment on the fiscal side, but, you know, you might want to hold to your side, but the fiscal side is very expansionary.

Austan Goolsbee: Yeah, I think you are quite sure whether I want to comment on the fiscal side. I'm a Fed man now, I don't comment on the fiscal side. I do think that the team supply shock spent multiple months in the wilderness, soul-searching to figure out how did team transitory get it wrong. It didn't seem transitory, it was more persistent than we thought. That was the camp I was in.

1:03:24
My conclusion in looking through that was a lot of this inflation persistence as things worked through the supply chain, that the impact of supply shocks lasted longer and kept lasting more than I anticipated. The one caution that I would give to team over-stimulus is they, in their joy, in their kind of bragging rights, they never did the soul-searching to go back and do this because they were like, see we were proven right. There is a puzzle that if you're on team stimulus, you got to take a position on, which is given the stimulus, everything is Delta from last year. So if you think what drove, predominantly drove, the inflation was the CARES act and the rescue plan, et cetera, then you got to explain why it was like, okay, we had plus 2 trillion, but that becomes minus 2 trillion. And it didn't, the inflation didn't play out like that. And one argument of explanation is, well, it went into, into the balance sheet. And so it's kind of smoothed over. It's not going to be that bang, bang, but that raises a second puzzle, which is if people actually saved most of the money and they're drawing down on the savings, then this initial stimulus really shouldn’t have been big enough to lead to 9% inflation. I kind of think at the end of the day, inflation starts soaring when the unemployment rate is above 6% and on its face, that's kind of evidence that something weird was happening on the supply side too. As regards Fed policy, we don't get into, as I say, the Chicago motto, is “there is no bad weather, there is only bad clothing,” and we would just take, you tell us the conditions, and we respond to the conditions. And fiscal policy and its impact, that's just one of the underlying conditions in the economy, and we're gonna get inflation back to target. We've committed to do that. I think the level of restrictiveness, if you stay at a quite restrictive level, you will eventually start having to think about the employment side of the mandate too. We haven't really had to think about that lately, because we've been doing great on that side. And where we've been lagging and failing has been on the inflation side.

Markus Brunnermeier: Okay, thanks a lot, Austan. And what we have learned from this unusual time, we can make it the usual and what we don't want from the unusual time we can, you know…

Austan Gooslbee: Nicely said, I like that. Can I take that? Markus, it's a real thrill. Thank you for having me on.

Markus Brunnermeier: Thanks a lot for doing it. We talk again. Cheers. Bye bye.