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>> Hello. Welcome to Episode 13 of All the Credit, PGIM Fixed Income's monthly podcast. I'm Mike Collins, just one of the many investment professionals at PGIM Fixed Income, and your host of All the Credit. The title of this episode of All the Credit is "Investing Through the Arc of the COVID Recovery." And wow, what an arc and recovery it has been. Most of us, obviously, have not lived through and certainly have not invested through a global pandemic. So the level of uncertainty, the collapse in economic activity that we saw, and certainly the level of volatility in asset prices were all as extreme, as we have seen in our lifetimes, you know, albeit for a relatively short period, beginning in March of 2020. But I think the biggest surprise actually has been the pace and the magnitude of the recovery in aggregate economic activity, in corporate earnings, and consumer prices, equity markets, and of course, the global credit markets. Now, to be sure, the aggressive and somewhat globally concerted monetary and fiscal policy responses really limited the downside and supported this historically rapid recovery. But the private sector deserves much of the credit for the seamless adoption of new technologies that we're all experiencing every day, to the flexibility and productivity improvements in the corporate sector, to the rally amongst scientists and pharmaceutical companies around the world to rewrite the vaccine playbook, for this constructive outlook we see today, for global economies, the earnings, financial markets, and even the labor markets as we go through 2021. So while we will reflect on this wild ride of the past year, both from an economic market and political standpoint, in this podcast, we really want to focus on the future, particularly what is now being priced in with regard to economic projections, inflation expectations, interest rates, and of course, the credit markets. And our two guests today are the perfect tandem to explore these topics. Nathan Sheets, who is no stranger to this program, is PGIM Fixed Income's Chief Economist and Head of Global Macro Economic Research and has had stints at both the Federal Reserve and the US Treasury Department. And Robert Tipp, one of my longest standing colleagues at PGIM Fixed Income is our Chief Investment Strategist, and Head of Global Bonds. Nathan, Robert, and I are here to give you All the Credit. Welcome, gentlemen.

>> Glad to be here.

>> Glad to be here, Mike. Thanks.

>> And so, Robert, let's start with you. You know, this this arc we've gone through, or maybe it's more like a V in terms of the markets, was really profound in terms of the volatility on the way down and on the way up. I want you just to really summarize how this recovery progressed, and importantly, what you see now as being priced into the financial markets.

>> Yeah, absolutely. So, I think what most people have seen, clearly is recovery in the stock market, and the valuations there have recovered through, excuse me, very poor levels. And the same is true of the credit market. They've recovered, and I think in both cases, this has happened with good reason. The case of the equity side earnings have held up very well. The level of activity in the economy, as Nathan's going to talk about his support of that. And on the credit side, thanks to all the liquidity pumped into the system, the kinds of corporations that are typically large enough to be significant players in the corporate bond market, either investment grade or high yield, have that access to money. And then they've been able to fund themselves to get to the other side, and now with what's going on in the economy and the vaccine, the market has moved to price in full recovery and taking credit spreads pretty much to all-time high levels. On the interest rate side, a kind of similar

but different phenomena has taken place. If you rewind to where we were before COVID, at the end of 2019, interest rates in the US were all kind of clustered in between one and a half and two if you looked at the two, five and 10-year treasuries, so between one and a half and two. And they crashed down at the depths of the crisis, when we didn't know what kind of fiscal stimulus we would get, what kind of monetary stimulus, whether you get a vaccine, and if there was stimulus, would it get traction. All of that was unknown. So when we were at the depths, you were looking at a two-year treasury that had dropped below a quarter of a percent, a 30-year bond that at one point dropped to below a percent, and the 10-year treasury spent a decent amount of time at 60-basis points. So, let's focus on twos and tens. So, 20 basis points on the two-year and 60 basis points on the 10-year. Fast forward to where we are now, on a global basis, stimulus has been profound, monetary and fiscal, and people have found a way to shop, right? Economic activity has roared back. So, the 10-year treasury is very clear to see just like in equities and credit spreads, they've come all the way back. Ten-year treasuries, you know, has cleared one and a quarter percent. The two-year treasury, on the other hand, has actually gone down to about 10 basis points. And so, you kind of have a tale of two worlds there, where one end of the yield curve is saying, we believe in the Fed, they're going to be very accommodative, at least for a couple years, we're flush with liquidity. Ten basis points, very confident in that. The other end of the yield curve has kind of priced in, you know, by the time you get five years out in the future, Fed funds rate is, you know, going to be significantly higher, maybe 1 percent area, and that the five-year treasury, which right now is at 55 basis points, you know, is going to be a lot higher at that point in time, pushing 2 percent. And so, you know, markets have priced in a good deal of optimism at this point, you know, creating some, you know, still questions about how strong the economy's going to be, how much higher they're going to go. And there also could be some opportunity in there as well.

>> Yeah, so certainly, we've seen this a lot, Robert, throughout our careers where people seem to get overly optimistic, maybe during periods of recovery, price in much higher interest rates, much higher levels of inflation, and higher Fed funds rate than ultimately plays out. And then maybe we're starting to go through one of those environments. So, Nathan, to you, I mean, does the macroeconomic backdrop justify that optimism? Kind of how do you describe the recovery we've been through? I know, in terms of aggregate level of activity, we're kind of back to where we were. But man, it's been very disparate in terms of the different sectors and different folks who've benefited or been hurt by this. And what is our outlook going forward?

>> Mike, I very much agree with your assessment that six months ago, eight months ago, if you asked me where the US economy and the global economy would be in February of 2021, I would have expected that we would see evidence of a recovery. But global economic activity, US growth, the labor markets, the financial markets, are all significantly stronger than what I would have anticipated. And I think there are a number of explanations for that. But I think the first is got to be that there is just more underlying resilience and durability in global spending than what we thought. And that's proven true in the United States. It's proven true in a remarkable way for China, and to some extent, albeit somewhat lesser, for the euro area. When I look forward from here, I think it's important to extrapolate those broad lessons for the United States, thinking about the next six to 12 months. I draw the analogy is like looking down the barrel of a loaded cannon, that the economy is primed and ready to move. We've got a lot of stimulus in the system and the Biden Administration is likely to pass another substantial stimulus bill, the vaccines are being distributed. And I think that that is going to generate a shift in mentality and help drive significant spending going forward. And then on top of that, there's a lot of trapped savings in the economy, money that people haven't been able to spend because they've been locked down. And I think as we get back to normal, some of that

will be unleashed as well. So, going forward, I think this is going to be a very strong year in the United States, and in many other parts of the globe.

>> How have you changed your GDP forecast over the last couple of months in the US, at least?

>> We, going back about, let's say two or three months, we marked up now by roughly two and a half percentage points for growth in 2021. Now, we're now expecting growth this year of six and a half percentage points for the United States. Similarly, our global forecasts have migrated up as well. And this has been particularly in response to the incoming data. And for the United States, the stimulus that's been put in place, which has been larger than what we expected it would be, and the successful rollout of the vaccines, which seem that like they're very much on their way to allowing herd immunity in the United States by probably the end of the summer, perhaps, and in the rest of the world with a bit of a lag depending on where exactly the country is and its circumstances. But the rest of the world is on a similar trajectory.

>> Yeah, so you're painting a very optimistic near-term outlook for sure. And as Robert highlighted, you know, a lot of that is already possibly getting priced into equity markets, to credit spreads, to rates markets, et cetera. What does the world look like, Nathan, in your mind, in a year or two, or maybe even five years from now? I mean, does this continue? Is there give back after what you're painting as being a boom year? Is there just a general reversion back to the more moderate economic and inflation world we've been living in for the last decade or so?

>> Once we move through this extraordinary adjustment that I've described in 2021, my expectation is that the global economy is likely to pivot back toward many of the features that characterize performance in years after the global financial crisis. I think these underlying realities of aging demographics, rising debt levels, public sector debt levels are even higher now than they were five years ago, ongoing automation and technical innovation, which is a good thing, but it's highly disinflationary. And the proliferation of IT products, allows global competition and reduces pricing power of individual firms. So, when I look out two, three years, I think that we will see after this boom, in the second half, I think we'll move back into a low inflation world. Now, there are some risks there. The boom may bring some inflation. I expect that that will be a mirage. But it's that the risk is that inflation expectations ratchet up, and that that creates a more sustained, inflationary dynamic. That's not my base case, but that's something that we'll be watching for very carefully.

>> So Robert, given that perspective, that you go through this boom this year, and then maybe you give a little bit of that back, I'm looking at sales of goods around the world, imports from China, I mean, they're so far ahead of where they were pre-COVID, you wonder how sustainable that is. Maybe there's some give back there. And given Nathan's view of kind of a reversion back to more moderate growth, what does that imply for our outlook for rates?

>> Yeah, and I want to preface this by saying this is a nonpartisan statement, Mike. This can be very equal here. But you can recall when interest rates, you know, a couple years back when we were getting the procyclical fiscal stimulus in the United States, against the backdrop of a rapidly growing economy that was running, you know, at full employment, high-speed, and we got that procyclical stimulus, you know, my comment was, I don't know if this is going to make America great again, but it sure makes bonds great again. You know, from those yield levels, you were going to have the [inaudible]. And so, fast forward to where we are now, and then when you are looking at, you know, 50, 60 basis point 10-year, that was not an optimistic outlook for the bond market. There was not a lot of risk premium left. And so now, we've in the States, and a lot of other higher-growth economies have followed this movement path, like Australia, New Zealand, and a lot of emerging market, local countries, they've followed this US rate path. With the election of Biden and the blue ripples running through

the lawmakers here, you know, this has built back the bond market, right? We're up at 130, and we're pricing in a rate scenario, is it high enough? I don't know. You know, how big the infrastructure bill that we may get, you know, when the fourth quarter is going to be these waves of growth, how many, as we're going through the recovery this year, we're going to get, how many bumps in inflation we're going to get. But it looks like we have probably overshot for that environment where the Fed really wants to achieve 2 percent on the PCE, which is kind of a level they didn't really steadily achieve before COVID. That with a world that has more debt, more aging demographic profile, and the backdrop that Nathan was describing, you're probably looking at a lower money market rate environment around the world. A lot of places like in Europe, they have locked in at these low rate levels. In Europe, they're talking about possibly going lower. And at the front end of the yield curve, the Bank of Japan is also thinking about maybe going lower. Some other ways, Japan is way further down the road, they're also thinking about steeper on their yield curve. But the general trend out there is that the central banks are more determined to hit their inflation targets. I think that makes it less likely that what's priced into the US curve, these 2 percent and higher forward rates are going to be realized. And that means that bonds over time, I don't know about whether over the balance of this year or not, but the longer the horizon, whether it's 12 months, 24 months, 30, 60 months, you're trying to look at very high probabilities for bonds outperforming cash over the long term, because of what's priced in. It's just a matter of what course we're going to take going through the year.

>> And then what about the credit markets? I mean, you mentioned that spreads had hit levels close to, if not at, historical tightness. But again, given this really low interest rate backdrop of Federal Reserve and global central banks that may be more predisposed to keeping rates at zero, and the fact that people are getting older and need more income and yield and bigger allocations of fixed income in general, what does that mean for credit markets going forward?

>> Yeah. So, on the credit market front, it is going to be a challenging environment, but there is more opportunity than risk, over the long term. In the short term, spreads are tight. So, fluctuations are going to, you know, quickly take returns below zero, you know, on short term measures. But when you look out 12, 24 months, there's more opportunity. And the reason I say that, one is on the float side, that a lot of issuers have prefunded the cash that they needed to make sure they got through the crisis. So, there's going to be a little bit less than need. The European Central Bank, in addition to buying governments, is taking corporate bonds supply out of the market. And the Fed is taking a lot of government's finances, ECB, out of the market. And so, that's reducing the inflows of credit supplied to the bonds, reduced the supply bonds into the market. And then the miraculous thing that's happening on the flow side among retail investors is that they have less bonds than ever. So, despite the fact that you have this aging demographic profile, and you have flows going into the bond market, and net retail is not putting money into the stock market by some measures, the valuation increase on the equity side is so strong that those equity allocations are actually very high and the bond allocations are not extended at all. So I think that in general, your credit spreads are going to stay on very well supported, and then that leaves an opportunity for people like us within the market to rotate among the different sectors, to some names that we think haven't fully recovered, to those that are underrated for their credit, quality, and so on, to add value through issue selection, sector rotation, that kind of environment. So very positive, yeah.

>> And for what it's worth, Robert and I and the other senior portfolio managers in the PGIM Fixed Income shop and on the multi-sector teams, really, when the pandemic hit last March, Robert, and spreads blew out, we saw the huge aggressive policy response. We actually became much more aggressive, right? We added credit risk in a pretty big way, mostly in the corporate investment grade and high yield sectors. We really ramped that up. And just now, really, for the first time, almost

a year later, we're really reevaluating where spreads are and looking for pockets of places to maybe cut risk where we think spreads of have may become a little too far too fast, and maybe with the mindset of just having dry powder to be able to take advantage of what is likely to be more volatility going forward and opportunities to be more tactical in the markets. So, Nathan, you know, we talked a little bit about some of the risks, you know, and I'm worried about it, and a lot of market participants are worried about, this taper tantrum risk, right? You talked about a little bit of upside inflation in the near term, at least. You know, what is the risk to another 2013-like taper tantrum. The Fed has already, in some cases, signaled, albeit not consistently, that, "Hey, maybe by the end of this year, they'll start thinking about, you know, reducing their bond purchases." Has their reaction function changed from where it was, and, you know, eight years ago during the taper tantrum?

>> My sense is that Jay Powell and his colleagues are profoundly concerned that over the last, let's say, five years, it could be 10 years, that despite the Fed's efforts, inflation has systematically fallen short of their 2 percent target. And my sense is that what Jay Powell did with his new flexible, average inflation targeting regime that he unveiled last summer, is he drove a stake into the earth, and he said, "We are not going to move until we have compelling evidence that inflation is back to 2 percent, and we actually think it's going to overshoot 2 percent for a while." Given all of that, my strong expectation is that as we move through 2021, even if growth is strong, and even if inflation is somewhat above target, that Jay Powell is going to want to see what happens on the other side, as some of that stimulus unwinds, and some of the initial bounce from the vaccine comes off, is any increase in inflation durable. And that makes me think that rates are likely to be low for quite some time for several years, and that the Fed is going to want to look through 2021, even in terms of its asset purchases. So, I think this is a fundamentally different reaction function. It is one that is more cautious, and one that is inclined to be more stimulated than the Fed was in 2013 under Ben Bernanke when they were talking about tapering.

>> And what about other policy risks, Nathan? You know, you have the unique perspective being about the Fed and the Treasury, right? So, you talked about, you know, the Fed's reaction function. You know, we have Yellen as the new Treasury Secretary. She's certainly more dovish leaning and, and really wants to make sure everybody in this country gets a really good high-paying job before she takes away the Punchbowl, right? Is the Treasury going to be out of bullets at some point? I mean, what does all this debt imply for future growth, for inflation? There's this perception out there that the more debt you have the more inflation, but I don't know if that's the case, historically. And we have a lot of young listeners on this podcast, you know, people in their 20s and 30s. Are they going to get their Social Security payments in 30 years from now, or is the government going to be out of bullets?

>> In the near term, the Biden Administration has taken the view that it is far better to be too big than be too small. And the job one is getting the economy going again, getting 10 million unemployed workers back into their jobs. The labor market has rebounded substantially from its trough last spring, but still has a very, very long way to go. And so, I think we will see a big stimulus. And we're also learning, as the stimulus is coming on into place, that that has a meaningful effect on spending and the economy. So, I don't think that the Treasury is out of bullets in terms of helping to drive and facilitate a recovery from the current episode. Now, over the longer run, you raise very important issues about the public sector debt. My analysis, and the data that I've looked at, suggests that those high debt levels do pose some risks to the economy and to performance. And it's not so much about high inflation. Quite the opposite, that I found that high levels of public debt are correlated with low and grinding disinflation and slower growth. So for our listeners that are looking out 30 or 40 years and thinking about where the economy's going to be, I think there is a risk that as a result of the debt that we've amassed, that the economy is somewhat softer than it would be otherwise. But by the same token, and I think this is something the administration and

Janet Yellen are thinking about, if we don't get out of the morass for it, if all of these workers, a big share of these workers, were currently out of their jobs and don't come back, that's also a huge loss and a significant reduction in our productive capacity. So, I think it's better to get people back to work, get that push, and get us out spending, hopefully, innovating again, and productivity and investment will come back, and it'll offset some of these effects. But I think those are the questions that will dominate growth over a 10, 20, 30-year horizon.

>> And obviously, we take a really long term outlook at PGIM Fixed Income, so we're always dwelling on these long term effects and what that means. And as Robert said, I mean, what's priced into the Treasury market in 10 years from now is a two and a half percent 10-year note, right, which implies a really high, maybe even two handles Fed funds rate. And I know our view is that those, as Robert said, are unlikely to be realized. Robert, what other risks would you highlight? You know, we talked about kind of maybe some of the policy risks, the taper tantrum risks. What keeps you up at night as we go through 2021 here?

>> Sure. Well, you know, I mentioned that the rates in the US have gone up on the expectations for recovery. In other places, rates remained quite low, in Europe, for example, but I think, to Nathan's point, while the stimulus is going great guns in the US and a lot of other countries, there will be a retrenchment on the fiscal side. Europe has a fiscal rulebook, which they're going to continue to loosen over time. But that's going to be a drag on growth. The UK is intermittently talking about retrenchment on the fiscal side. And, of course, you know, there are going to be big contrast between countries, I think, that are on balance that's going to be a restraining force on some of these countries' growth. And where interest rates are in Europe and in Japan, I think, is an important driver. So, I think that's an influence, but it can be a risk as well. There's some kind of change in that backdrop that could create a threat. I think, though, that really, the biggest shifts going on here are on the volatility front for, one, that, you know, this century, we've seen 250 percent drops in the stock market in the times [inaudible] Enron WorldCom recession again after the financial crisis, and with COVID, which was, you know, very, very, very bad recession. We had a steep drop in stock prices, widening of spreads, but also a huge drop-off in liquidity. So, these markets are becoming more volatile, liquidity is becoming more variable, and that is creating a kind of compression for market cycles, which creates risks, but also creates opportunities for investments. It also raises the hurdle on fundamental research, because if you're going to go into a market environment where incrementally you're not going to be able to trade some of the securities, it's going to be more important that you've done your bottom-up fundamental research across all of these different sectors. So, I think, you know, there's definitely rising risks that I think that the COVID crisis has kind of highlighted the uncertainty factor, and that you can never know what those risks are going to be. It used to be they were much more traditional economic cycles of over investment, and collapse. But as we've seen, you know, in recent decades, again and again, they're more of an idiosyncratic nature, and that they can have really big impacts on the market. You need to have a durable, long-term strategy for that, as well as, you know, ideally, some ability to take advantage on tactic.

>> Yeah, Nathan, I think you would agree that the Federal Reserve probably is still in the early stages of developing the tools to handle financial stability risks. They talk a lot about it, but I don't know if they feel comfortable addressing it. I mean, what are some of the, you know, lessons you learned as an economist, kind of going through 2020, and seeing this incredible policy response, I mean, as you try to, you know, predict economic cycles going forward?

>> Well, I've touched on a couple of them. One of them is the resilience in the economy. And I would say correlated with that resilience is the flexibility that we've seen. The fact that so many of us work in the office, during most of last year, and nevertheless, the economy performed as well as it did, is truly extraordinary. Underneath that, it suggests the real flexibility

in our ability to produce. But it also suggests flexibility in what we're consuming. And we see that in the macro data that we're producing and consuming now a lot more goods than we were and fewer services. And I think one of the big questions, as we look into 2021 and beyond, is how permanent is that shift? Certainly, some of these face-to-face service industries have been hit, are going to bounce back. But are they going to get all the way back to where they were pre-pandemic? So, there's these issues associated with economic adjustment, flexibility, and resilience. So, one big takeaway. And then another one is an issue I touched on a moment ago. And that is the resolve of policymakers around the world to act when it's necessary. And we saw that in a major way last spring, but it probably has continued. And importantly, it's been not only monetary policy, where we might have expected it, but even there, I think the aggressiveness and the magnitude of these responses was much larger than what we would have thought. I was in the Fed during the global financial crisis, and I thought we were going all out. But the Powell Fed basically did everything that Bernanke Fed did during the course of three weeks, and then went on from there. We also saw on the fiscal side where governments, legislatures around the world have put into place meaningful support, including a multinational response in Europe, which happened much more rapidly and smoothly than anyone would have expected. So, another big lesson is when the chips are down, policymakers realize they need to act. And the records suggest that they rise to the challenge.

>> And, Robert, you mentioned, you know, the reliance on, you know, long term fundamental views and the bottom of research and the importance of that, but also maybe more heightened, you know, longer-lasting volatility as being a normal part of the markets going forward. What were some of the takeaways, as an investor, that you learned going through this pandemic in the recovery?

>> Yeah, so I think, you know, that you can have really serious time compression. I mean, there was a period when the crisis was at its absolute depths that we saw, you know, the Treasury, you know, yields go all the way down to their absolute lows. And then within the course of a month, shot up to levels, you know, pretty much defining the range that we were going to see for a good part of the recovery. So basically, you had an entire interest rate cycle, you know, half of it play out in the course of a month. And the same was true on the credit recovery side, where, you know, within the matter of a couple months, you saw the majority of the damage on the credit cycle. So I think we have to keep, you know, flexible mindset, and also take advantage of not only, you know, opportunities that you get, you know, with the scale in terms of research and new issues that were there in that market, but also on the derivative side, for hedging and changing policy in the portfolio. You know, while the vast majority of what we do is on the long term and strategic, that having all the tools available, and using them to make some adjustments on the tactical side, in response to these rapid market cycles, is also a good capability to have and to make use of.

>> So, Robert, why don't we wrap up, tell our listeners what they should do, right? A lot of our clients and investors are listening in on this. I mean, where should they invest? What is your general advice and outlook for the asset markets going forward?

>> I think this might be a shocking recommendation in its mundane and boring appearance, but it has, in fact, worked very well. And everything that I'm seeing in the market suggests that it is true right now, as well. And that is that the market environment that we've been in has not necessarily been a feel-good environment for people. The aging demographic, and those secular trends have kind of brought, you know, within the business cycle of growth going up and down, generally speaking over time, slower rates of growth, and widening inequality in these various problems. But the progression towards low rates, accommodative central banks and so on, it's continued to make very traditional asset allocations work. And I

believe that is the case right now as well, that we don't know if interest rates are topping right now, or whether there's going to be another move higher over the course of this year in response to stimulus. But there's a good chance and likelihood in our view that what's priced into this curve over the long run is the level of forward rates that will not be realized in terms of rate hikes. And therefore, investors that stay fully invested in the bond market, are going to achieve even in government bonds or return premium over cash. And that there, despite the fact that spreads come in a lot, there are a lot of sector allocation, issue selection opportunities that are going to enable an active manager to outperform government bonds using spread bond. And the equity market, obviously, earnings growth has been impressive, maybe valuations are stretched, and maybe equities will have a harder time and have more risk on this economic cycle here. But there's also a case to be made that if cash rates are going to remain at zero and bond rates will remain incredibly low, that maybe stocks will not overprice. So, you know, the equity side of it is more out of our realm. And though within bonds, looking at that side of the equation is, as ironic as it seems at this level of yields, there is probably more of a global recovery priced into the world's bond markets, including the US or almost especially the US, more of a recovery, not that it's too much for this here, but the notion that these rates of growth are going to be continued for five years and beyond is probably an over extrapolation, and that as a result, bonds are going to continue to surprise on the upside. You know, by smaller margins, let's price on the upside and provide the outperformance relative to cash and a good source of diversification.

>> You know, for sure, just as we saw last March, a lot of our big institutional clients actively rebalance by selling bonds. In March when rates were plunging and bond prices were hanging in and rotating back into equities, which were down 30 plus percent, we actually just started seeing the first signs of some of our clients going the other way, actually getting out of the equity markets and increasing allocations to bonds. I mean, every day we sit here, equities get more expensive and bonds get cheaper, right? So, at some point, you will see some rebalancing there. So, let's end it there. Thank you so much, Nathan, for all your thoughtful insights, and thank you, Robert, as always. And for all of our podcast listeners out there, you can see all of our thought leadership on our website at pgimfixedincome.com, where you'll not only see our entire podcast series, but our kind of hard-hitting one-page blogs that we call the bond blog, which you can find by either just typing in the bond blog or going to PGIM Fixed Income, and all of our other thought leadership. Thank you for listening.

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