Exchanges at Goldman Sachs
What’s Ahead for Global Economies and Markets in 2022?
Jan Hatzius, Head of Goldman Sachs Research and Goldman Sachs’ Chief Economist
Dominic Wilson, Senior Advisor, Global Markets Research Group
Allison Nathan, Host
Recorded: November 23rd and November 29th, 2021

Allison Nathan: This is Exchanges at Goldman Sachs and I'm Allison Nathan, a senior strategist in Goldman Sachs Research.

In this episode, we're going to examine what's in store for global economies and markets in 2022. To do that, I'm delighted to be joined by Jan Hatzius, Goldman Sachs' Head of Global Investment Research and Chief Economist, and Dominic Wilson, Senior Advisor in the Global Markets Research Group. Jan, Dominic, welcome to the program.

Jan Hatzius: Great to be on.
Dominic Wilson: Thank you.

Allison Nathan: Jan, you and your team recently published your annual outlook for 2022. Always a big event. Your report was called "The Long Road to Higher Rates." And you make the case for a gradual move to higher rates and a continuation of strong global growth. Just for some context, you had an above consensus growth view for this year. And that's largely played out. What gives you confidence that global economies can continue to grow strongly next year?

Jan Hatzius: Yeah. Let me just set the stage a little. We came into 2021 expecting about 6 percent growth. And that's roughly where we're likely to be. Now, unlike a year ago, we're no longer above consensus in terms of our forecast. And we're pretty clearly past the strongest pace of growth for the cycle, which probably was some time around Q2. But we still do expect quite a strong economy with 4.5 percent growth in the global economy and most economies expanding well above their longer-term trend.

And why do we have slower growth? Very simply, one, the
biggest boost from reopening the economy post-COVID is behind us. Even if the latest outbreaks have relatively minor effects on growth, we're no longer going to get the sort of boosts that we had in the spring. And then fiscal policy is turning from a tailwind to a headwind. Monetary policy also is likely to turn, as we'll discuss maybe a little bit later.

But 4.5 percent is still a very good growth pace. And there are some real reasons to still be optimistic. I do think that on balance, in 2022, reopening is still going to help. The medical news is obviously evolving. The Omicron news is still pretty recent and we’re working through what that means. But there are also some reasons for optimism on the virus. We are still vaccinating large numbers of people. The medication for COVID cases, that's on the horizon from Pfizer and Merck, I think, is going to be a really important way to really put the pandemic behind us. We have a large amount of pent-up savings in the household sector, which I think is going to delay, and to a significant degree, offset the drag from fiscal policy.

And then lastly, the inventory cycle is going to help us
because right now production is below demand. That's behind a lot of the tightness in the goods sector. But that's going to probably change over the next few quarters. So, overall, still quite a strong global growth environment with significant normalization still ahead of us.

**Allison Nathan:** And if you look around the world, are there regions or countries that you're particularly positive or negative on?

**Jan Hatzius:** I would say in the advanced economies, we don't see major differences. I mean, at the margin, even with the latest COVID outbreaks we're probably still a little more optimistic in the Euro area than other forecasters because Europe is still further behind in terms of regaining pre-COVID levels of activity, bigger output gap. And fiscal policy, both in Germany and with the Recovery Fund in the southern countries, is going to be more expansionary. But the differences aren't very large.

In the EM world, I think we do have bigger differences. We're generally on the optimistic side of the consensus in India as well as the ASEAN countries in Southeast Asia,
basically because they have a lot of room to make up still from the devastating hits from the pandemic that they've been seeing in 2021. We're also relatively optimistic on Russia because of the strength in oil prices. However, we're more cautious in China and definitely below the consensus of forecasters because the property market, we think, is going to be a drag on growth, potentially for a long time to come. Not a Lehman moment, but a drag on growth. And policy makers seem to put less weight on near-term GDP growth and more weight on other objectives, such as income distribution, decarbonization, et cetera.

We're also relatively cautious on Latin America, in general, and Brazil specifically where financial conditions have tightened very sharply on the back of very aggressive monetary tightening from the Central Bank. And we're gearing up towards a potentially very divisive election in 2022. So, there's quite a big range in the emerging world.

**Allison Nathan:** Dominic, let's bring you into the conversation to talk a bit about what this all means for markets. And maybe we just start with the question of whether or not the current strength in global growth is
reflected in markets, or what is being reflected in markets from a growth perspective?

**Dominic Wilson:** Yeah, it's a good question. And it's definitely much better reflected than it was at the start of the year. So, as Jan said, for a long time I think we felt that the market was too negative of the global growth picture. And then we've seen a big upgrade in market views. And that's been reflected across a pretty broad range of cyclical assets. And so, I think it's much harder to make that case overall now. And I think that's one of the issues that's going to make the broader outlook more complicated in 2022.

I would say when I look at the profile of the forecast that Jan described, the near-term strength that we're seeing now and into the early part of next year is probably still being underestimated. We're still generating fairly consistent positive surprises in the US data. And so, as we move in the first half, you've got some strong backdrop. I think there's probably some room for the market to take some positive news out of that.
And I would say if you take not just growth but the mix of growth in these very low real yields that we’re seeing in bond markets, that mixture overall is still quite supportive. But I think when you look beyond that as we move towards the middle of the year, as we move towards the second half where we see growth slowing, then I think there's a little bit more risk and the market may end up being, you know, somewhat more fully priced for the growth outlook at that point.

**Allison Nathan:** So, one of the biggest debates right now is, of course, whether this surge in inflation is likely to prove temporary or more persistent. Jan, we just spoke to you about this on our show. And you generally have the view that inflation is, you know, set to subside gradually into later next year. But talk us through that view a little bit and when you do think prices could normalize.

**Jan Hatzius:** Yeah, that is our view. Although, I think it's very important to acknowledge that we really missed the extent of the inflation acceleration in 2021. Inflation is much higher across a large range of economies than we had expected. We had some parts of the acceleration in our
forecast. Base effects. We had the expectation in some of the COVID sensitive service sectors would normalize. But the biggest one, mainly the massive upward pressure on durable goods prices that's really driven the acceleration, we didn't really have that in our forecast. And that's going to be, I think, also the key for 2022.

We have for 2022 raised our forecast for where core inflation is going to be at the end of the year, even on top of the much higher inflation numbers in 2021. That said, we still think that we'll ultimately, by the end of next year, get back to something that's not too far from 2 percent. In the US and the UK, we think we'll be somewhat above 2 percent, but without being, you know, too far in the sort of 2 to 2.5 percent range. And in the Euro area, we think we'll be back below 2 percent for core inflation.

The drivers of this are basically pressure in the goods sectors subsiding, with shipping costs already showing some signs of normalization if you look at some of the indicators. And, you know, this is still tentative, but it does seem that we're seeing a decline there.
We are also expecting somewhat weaker spending on durable goods. In fact, we think in 2021 a large part of the price increase in durable goods has been really due to very, very strong demand. And the very strong demand was driven by very large-scale support from governments to household incomes. And still restricted service consumption, which has effectively funneled a large part of that overall spending into durable goods. And we think that probably is going to reverse in 2022. So, that's what gets us back down to something closer to 2 percent.

I would say risks to this forecast tilt to the upside. The main thing to watch, in my view, is what happens to labor costs. Labor costs have accelerated substantially in a number of economies. I think the current year-on-year rate of something like 4 percent in the US, maybe a little bit more than that in the UK, is probably still broadly consistent with 2 percent inflation or 2 and a bit percent inflation. However, if you look at the sequential pace of wage growth over the last few months, we've been well above 4 percent, probably more like 5 or 6 percent. If that were to persist, then I think we'd probably be making additional upward revisions to our inflation forecast. Not
our expectation, but this is, I think, something to watch as a potential source of risks.

**Allison Nathan:** So, Dominic, if we are in a more inflationary environment, and even Jan is expecting a somewhat more inflationary environment relative to the past, what would be the implication for risk assets?

**Dominic Wilson:** Yeah, as Jan said, obviously it's not our core view that we're going to get persistently high inflation in yields. But that's definitely something that will be more challenging relative to what we've experienced.

If you look at what's happened up till this point, equity valuations are extremely high. That causes, you know, reasonable amounts of anxiety in the equity investor base from time to time. But if you look at the macro picture that we've got, they're not actually massively out of line with a macro environment in which yields have stayed low and in which the market is essentially looking through this inflation bulge and assuming that most of it is going to fall out of the system within a year or two.
If those assumptions don't hold, then you are going to see that the kind of macro environment is less supportive of this sort of very high valuation picture. And I think the chance is then that equity markets respond more than they have to the inflation pressure, will go up, potentially significantly. And I do think the challenge in part for portfolios, as well as the, obviously, bonds are not a great protection against that, so for people who hold standard portfolios with both equities and bonds, the risk from that scenario is that you're getting hurt on both pieces of the portfolio.

I think two things potentially mitigate that, which we've seen already as we've digested what's been a very big increase in inflation already. The first is the more it's being driven by strong demand growth, which has been part of the story, the more that's sort of been offset to how damaging, I think, that is for the risk picture. And the second is that on the yield side, the more central banks are viewed as sort of accommodating or at least moving slowly in the face of inflation, the more real yields stay low, which is what's happened recently. And particularly long-term real yields, which matter for equity pricing
disproportionately, the more you could sort of digest that inflationary pressure. But certainly, if you have a much more persistent inflation and rate pressure environment then we're expecting, it would be likely that you'd see some challenges on the equity side.

**Allison Nathan:** So, Jan, let's talk about what this all means for the Fed, because obviously what happens to inflation depends in part on the trajectory of the Fed and vice versa. So, they'd recently announced the start of tapering. Where do they go from here?

**Jan Hatzius:** I think if you look at our economic outlook and the growth side with far-above trend growth through the first half of 2022 at a minimum, the very strong labor market unemployment rate coming down to below four percent and our evolving view that labor force participation was still well below where it was pre-pandemic is looking more structural than than it did. And then finally, inflation far above target at the moment, probably still far above target in the middle of 2022. All those things taken together suggest that the Fed is going to want to start hiking rates starting maybe around the middle of 2022. We
actually think looking at what various Fed officials have said, that there is a high probability of a relatively rapid taper. The indication at the November FOMC meeting was that they would go in $15 billion per month steps. But the signaling has been, I think, conducive to speeding up that pace to maybe $30 billion a month and finishing as early as the end of the first quarter, which would also put them in a position to start moving the funds rate up, maybe in June of next year. That is our current forecast. Now the Omicron variant news has, I think, raised some questions about that, and they are there is a meeting in the middle of December where they're going to have to signal what they think about the pace of tapering. And, you know, depending on what we learned in the run up to that meeting, it's certainly possible that the taper stays at $15 billion and it takes a little bit longer for it to conclude. That said, I still think that the probability that sometime around the middle of 2022, the first hike will occur and then we get maybe a couple of additional hikes in 2022, followed by very gradual rate increases in subsequent years. That probability is still pretty high. And certainly, it would be implied by our economic forecast.
**Allison Nathan:** And I mean, the title of your report does suggest that you do think rates are ultimately heading higher over the longer term. So, talk to us a little bit about what your expectations are for rates in this cycle.

**Jan Hatzius:** Yeah. Market pricing for terminal rates across the major economies is extraordinarily low. And you know, in the US it's in the lower 1.5 percent for the nominal funds rate, which would basically mean a real funds rate that's still significantly negative. And effectively, the market's saying that R star--the neutral funds rate or the level at which monetary policy neither stimulates nor restrains economic growth--is potentially even lower than in the past cycle. And that, to us, seems overdone.

I mean, we've certainly seen a decline in neutral short-term interest rates over time. But this seems like kind of an extreme view given that there is a significant amount of pressure to invest more in the public sector. So, governments are trying to upgrade infrastructure. We're seeing that in the US with the bipartisan infrastructure package. We're seeing it in Europe with the Recovery Fund. There are a lot of spending needs for climate transition and
decarbonization. That's all going to cost money. There is more tolerance of public sector deficits than there was, you know, 10, 20, 30 years ago. I think all of that means more demand for capital from the public sector. And that effectively means the private sector is going to have to save more. And higher real rates, somewhat higher real rates, could be a consequence of that.

In addition, if you think about it from a nominal rate perspective, even though we expect inflation to come down, we still have it settling significantly higher than in the period just before the pandemic. And across the economies we cover, about 40 economies we cover, we get an inflation rate in 2024 when all the kind of temporary things have worked themselves out, of about 50 basis points above the average of the five years before the pandemic. So, that should also be effectively added to where you think the policy rate is going to go.

So, what does it mean for, say, the federal funds rate? Our expectation would be something in the 2.5, 2.75 percent range. So, about 100 basis points above current market pricing. Even in the Euro area where all the levels are
lower, market pricing is lower, our expectation is lower by a little more than 100 basis points, you know, we also think that in the end it will be more rate hikes than what markets are pricing.

However, in the Euro area, we think it's going to start considerably later than what markets have been pricing. We don't have any hikes until the second half of 2024. So, this is even further out in time than what we're talking about in the US.

And in the US, you know, we think it's going to be gradual, but ultimately get to a higher level.

**Allison Nathan:** So, Dom, given that we are going to very likely be in this more inflationary environment, why are yields so low? And do we expect that to change? What would be the catalyst for Jan's expectations to play out?

**Dominic Wilson:** It is pretty remarkable. We've put lots of focus on high growth, high inflation. We've got nominal GDP growth that's been in the double-digit rates through some of the recent period. And we've got a 30-year bond
yield that is essentially at 2 percent.

And I think it reflects some of the forces that Jan was describing. I think partly what you're seeing is just the reflection of extremely low policy rates, not just in nominal terms, but particularly in real terms with the inflation going through the pipe. And still very supportive monetary policy around the world more or less across the board. And so, that process of eroding that is beginning, but we're really at the very start of that. And so, that anchoring point at the very front end of the curve, I think, is keeping the whole yield structure lower.

But I think there's more than that going on. When you look at what Jan was talking about in terms of the disagreement with the market about the sustainability of higher rates, I think we still carry with us, to some degree as a market, the scar tissue of prior cycles. I think market is both sort of convinced that we have a growth in inflation acceleration that needs to be dealt with, but also nervous that as tightening begins and we pull monetary with stimulus away from economies, that maybe that process will be difficult to sustain.
And I think, you know, to your question, do we expect that to change, the answer is yes, we expect yields to go higher. We think bonds are probably going to be a pretty poor investment over the medium term. But in terms of what changes there, if you think those are the two forces that are playing a big role, some of it may be that you need the passage of time to convince people, first, that the policy rates themselves are changing meaningfully. So, the Fed needs not just to get going, but to keep going. And people need to see that process happen. And second, as that happens, they need to get over the worry that that process is somehow unsustainable.

So, I do wonder whether rather than getting a dramatic shift in yields, we're going to be dragged there, essentially along the lines of the forecast that Jan laid out, by the fact that over time we think the economy will sustain a higher level of rates than it did in the last cycle. And the way you prove that to people is by going there and seeing that it happens. And so, I wonder whether that's going to be the process that plays out, you know, not just next year, but in the couple of years beyond.
**Allison Nathan:** Right. But if you think about next year, you've already mentioned a complicated backdrop and some of the forces that are contributing to that. But do you expect some kind of sea change as we go through the course of the year and we go from this stronger growth to slower growth? What, broadly, are you expecting then?

**Dominic Wilson:** I think the yield structure is going to go up next year. Our expectation is that the things it's going to change most are in the middle of the curve where the market's sort of pricing this notion that the Fed is not going to be able to keep going or that it's going to stop at a relatively early point.

I still think, and you know, there are lots of different ways that this can play out, that it's more likely than having a big sort of shock to the back end of the yield curve, which is what people are scared of, that we do a dance constantly once rate tightening starts that we will shift backwards and forwards to thinking the Fed is behind and needs to pick up the pace, which is where the market has been lately, to worrying that they're withdrawing monetary stimulus and
then how are we going to survive with it? And that that's going to generate kind of some volatility and some backwards and forwards, rather than this kind of big calamitous moment. And we're going to dragged towards, you know, a higher yield structure with more of this sort of back and forth between the rates in the equity market about whether this process is sustainable, whether we're going to survive it. And we think in the end we will. But I'm not sure we're going to just play this all out in one big go. I think we're going to start that process next year and the market's going to oscillate between whether it thinks it's a good idea or not. And then we're going to move through that process going forward.

**Allison Nathan:** Right. But just to clarify, a year from now, we do forecast yields up and equities up?

**Dominic Wilson:** Yields up and equities up. Which in the end is a reflection of, you know, decent growth and some monetary tightening, but not monetary tightening at a level that we think threatens the recovery consistent with the outlook that Jan's laying out.
**Allison Nathan:** Jan talked earlier about the divergence in growth and policy pass across countries, but across emerging markets in particular. Can you talk a little bit about the market implications of that and, in particular, what our relatively low growth expectations for China means? Are there safe places to invest in China?

**Dominic Wilson:** Yeah. Look, so, I think obviously China weighs heavily on that picture. I think the economic story in China has obviously been more complicated this past year. We've had slower growth than was generally expected. You've got a lot of policy and regulatory uncertainty. And the markets have reflected that.

And I think as Jan laid out, on the economic side, our expectation is that the growth environment is going to be softer than it's been in the past. I do think, obviously, it depends a little on the asset classes you're looking at. When we look at China, the opportunities in bonds and FXs are still reasonably positive. We like both the carry in those markets. We think the kind of ongoing environment is supportive for fixed income investment. It offers good diversification against other markets. So, the challenge is
really what the equity picture looks like there and the broader risk picture.

And there, I think, it is a little bit more complicated. Slower growth is a challenge. But I think the markets also priced quite a lot of growth risk. And it's also priced, I think, nervousness about just the uncertainty of policy.

So, I think, if we've got our slower growth path, but we get reassurance from policy makers that there are clearer limits in terms of what they're prepared to allow with growth, if the policy outlook becomes clearer over the course of the next six to 12 months, I think there's actually scope even without a very robust growth environment for parts of the equity markets to do better. And our Asia equity strategists have actually upgraded China this year on the basis that, essentially, you know, some of that bad news is in the price and some of that uncertainty will be resolved.

The broader emerging markets picture, as Jan said on the economic side, there's more differentiation here than before. It's interesting relative to the developed markets
rate cycle. A lot of emerging markets have been tightening policy already. So, they have these cycles earlier. And it’s kind of a little out of sync with the developed markets. So, I think there are going to be places where that cycle ends also quicker. As the developed markets are tightening, there are going to be places where the monetary tightening cycle in some of these emerging markets ends. But there is also a lot of differentiation depending on whether people have commodity exposures, depending on how responsible fiscal policy has been.

And so, you know, we have pretty strong growth views as Jan mentioned in Southeast Asia and parts of Asia and as the reopening kind of resumes in some of those places. And still quite a lot of risk in places like Latin America, including political risk when some of these important elections take place in '22.

**Jan Hatzius:** Just one follow up, maybe, on the China issue. There is also a significant difference between the annual growth rates, which we think are going to come down to somewhere below 5 percent, you know, 4.8 or so, after close to 8 percent in 2021, and the sequential pace.
The sequential growth in China has been very weak, actually, in recent quarters. And relative to that, we expect some acceleration. So, that also makes it a bit more complicated than the look just at the annual growth number relative to consensus would suggest.

**Allison Nathan:** Right. And I mean, that is actually just a broader takeaway as we're thinking about all of these economic numbers. We've had such a downturn in 2020 and such a rebound in 2021. We have to think about, you know, the sequential momentum in addition to year over year numbers.

Let's end with a question on risks. Jan, what are the risks you're most focused on relative to your forecast and growth more broadly? And then Dom, also, market risks, what are you most concerned about?

**Jan Hatzius:** Well, I think the obvious near-term risk really is Omicron. There are quite a number of outcomes. I think the range is relatively wide and I think it ranges from a very serious virus outbreak that leads to a much more significant hit to economic activity to, you know, something
that is more like a false alarm and something where we really don't see a change in the medical trajectory. I think a realistic downside case is that we're going to see significantly higher transmissibility of the new variant, but only limited deterioration in the protection afforded by vaccines, especially protection against hospitalization. If so, we think the economy would take a hit with global growth in the first quarter in particular, probably significantly lower than it otherwise would have been. And we've estimated roughly maybe a two and a half percentage point hit quarter-on-quarter annualized growth, which is mostly made up in subsequent orders. That would be pretty similar to the hit that in terms of the global economy took from delta. But actually, our estimate is a little bit smaller than delta because we do think that the economy is evolving. Economic behavior is evolving in a way that allows us to live with the virus to a greater degree. The medical outcomes are not as bad; the treatment options are improving and our ability to still carry out economic activity is getting better. So clearly, this is an important downside risk in the shorter term. But as we move forward over time, I think it's becoming less and less dominant relative to other issues.
So the other issue that, of course, is becoming a bigger risk is a more sustained high period of inflation and maybe more acceleration in the more trending components of the inflation indices than we've built into our numbers. And I should emphasize we have moved up our numbers. U.S. inflation even at the end of 2022 in our forecast is now clearly above two percent, but it is meaningfully lower than what we're seeing at the moment. We're still getting to the neighborhood of two percent. So I would say that there definitely is the upside risk that if wage growth continues to continue at the pace that we've seen over the last quarter or so on a sequential basis, five to six percent. That probably would necessitate a more aggressive response from the Fed in terms of tightening monetary policy because that wouldn't be consistent with 2% or near 2% price inflation over the medium term.

So I think that is a risk that is certainly on our minds and it's still the alternative outcome. Our best guess remains that much of the inflation acceleration will turn out to be transitory and relatively gradual monetary policy normalization will be sufficient to address it. But we are we're certainly focused on the risk of that, and I think the
wage numbers in particular are something to be watched.

I would say one last thing which is not as much a risk to the outlook, but really a risk to our ability to understand the outlook, whether we're forecasters, investors, or policy makers. There are so many unusual things that are happening. The economy is still so weird in many ways. That having a confident view about what's going to happen in the future, which is always difficult, even under the best of circumstances, is particularly difficult now. So, I would certainly expect, still, that there are going to be plenty of surprises, plenty of twists and turns, and perhaps, also, plenty of ways in which policy makers change their mind about what needs to be done. So, it's something that should keep us all very humble as we go into 2022.

**Dominic Wilson:** I'd echo Jan's call for humility. That's always a good thing, particularly a good thing now. And similar to, you know, the list of issues that Jan raised, I mean, I think the challenge on the market side is you're seeing both risks to growth and risks to inflation and rates. And normally, you deal with one or the other. But you know, the challenge, I think, is to balance those risks.
On the growth front, as Jan mentioned, health risks are an important worry. We’ve obviously just seen with the emergence of the Omnicron variant that the market is very sensitive to any news that might challenge the broad track towards ongoing recovery. I think particularly as we move through the winter, we've seen commodity supply disruptions in particular play a role. And so, I think there's some ongoing concern about how significant that market tightness, which you know, we see as a deep structural force at the moment, how much of a constraint that could be and whether you get more serious spikes out of those markets that cause nearer term problems for growth. And we talked about some of the downside risks in places like China.

I think on the other side of it, the big worry is the kind of inflation and rates pressure side. Both whether there's more of that than we think, but also reflecting what Jan said about the strangeness of the cycle. Whether the market just decides at some point that it's priced it in a way that has been too generous and there's a more abrupt shift. I don't think that's what's going to happen. But I do think it's a possibility and part of the story.
And I think political risks are going to be important next year. Jan mentioned the election in Brazil before. We've got the US midterms later in the year. But we've also got a French presidential election in April, which is going to be a potentially important milestone for Europe. And so, I think you're going to go through these risks.

I think the biggest high level balancing act is the one that you pushed on before which is the issues between sustaining higher rates and how the recovery does with that process of withdrawal. I think we always worry about those processes. And this is a particularly delicate version of that. And so, I think there'll be a lot of back and forth in terms of that balancing act and the risks on both sides of that path.

I think the one thing I would say is that given a sort of flatter growth and market profile overall, if we're right that in general those worries don't occur, I think the market is going to have periods where these issues come to fore. I'd be very surprised if we don't spend significant periods of time on at least some of these issues. Those periods, if we're right, are going to be the best opportunities, I think,
to push back on the risk in markets.

And so, in a flatter market profile, understanding that as the market worries about things that you worry about less, those are the times to engage. I think there's going to be more of that in 2022 relative to what we've seen over the last couple of years.

**Allison Nathan:** So, lots to think about. Lots to worry about. Jan, Dom, thanks so much for joining us.

**Jan Hatzius:** Thank you, Allison.

**Dominic Wilson:** Thank you.

**Allison Nathan:** That concludes this episode of *Exchanges at Goldman Sachs*. Thanks for listening. And if you enjoyed this show, we hope you subscribe on Apple Podcasts and leave a rating and comment.

*This transcript should not be copied, distributed, published or reproduced, in whole or in part, or disclosed by any recipient to any other person. The information contained in*
this transcript does not constitute a recommendation from any Goldman Sachs entity to the recipient. Neither Goldman Sachs nor any of its affiliates makes any representation or warranty, express or implied, as to the accuracy or completeness of the statements or any information contained in this transcript and any liability therefore (including in respect of direct, indirect or consequential loss or damage) is expressly disclaimed. The views expressed in this transcript are not necessarily those of Goldman Sachs, and Goldman Sachs is not providing any financial, economic, legal, accounting or tax advice or recommendations in this transcript. In addition, the receipt of this transcript by any recipient is not to be taken as constituting the giving of investment advice by Goldman Sachs to that recipient, nor to constitute such person a client of any Goldman Sachs entity. This transcript is provided in conjunction with the associated video/audio content for convenience. The content of this transcript may differ from the associated video/audio, please consult the original content as the definitive source. Goldman Sachs is not responsible for any errors in the transcript.