GLOBAL ECONOMICS ANALYST
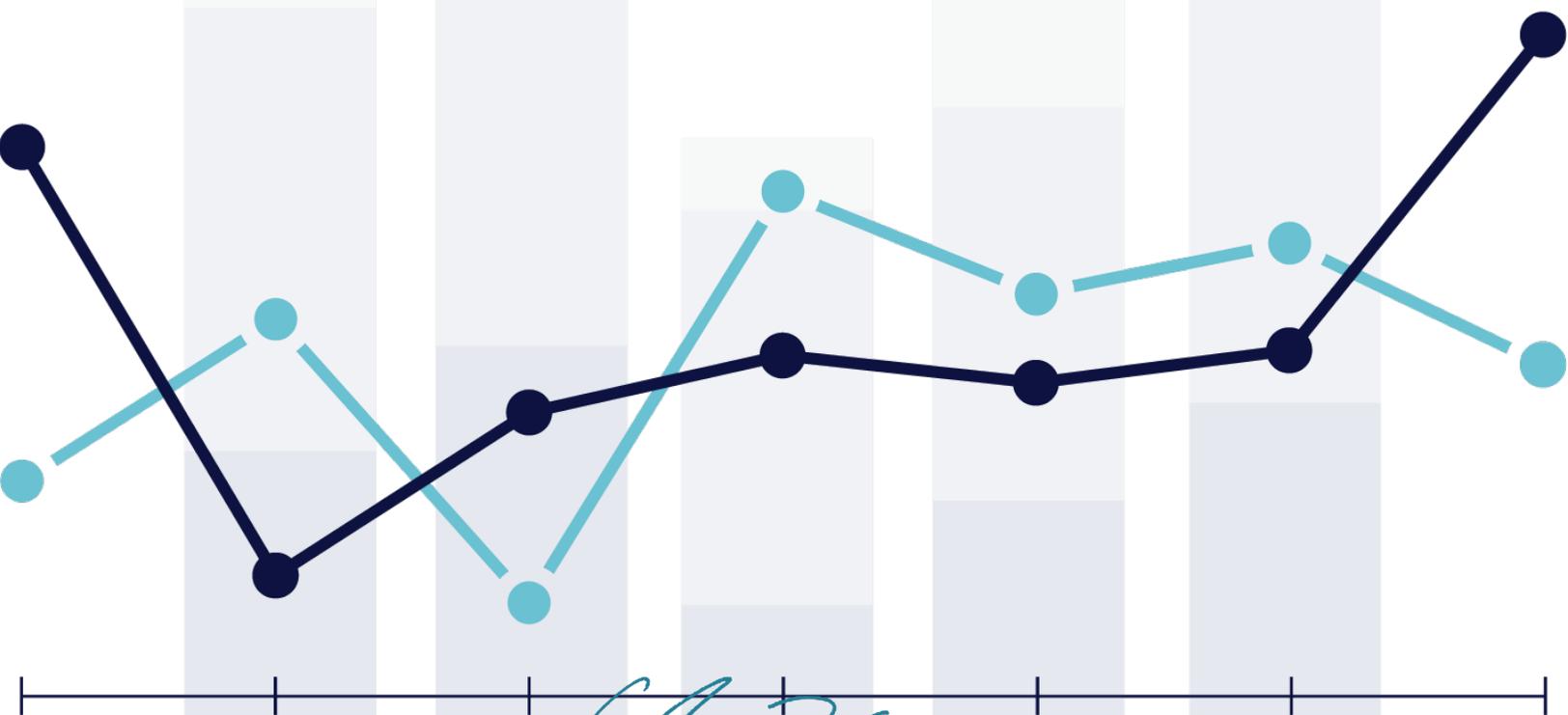
The Long Road to Higher Rates

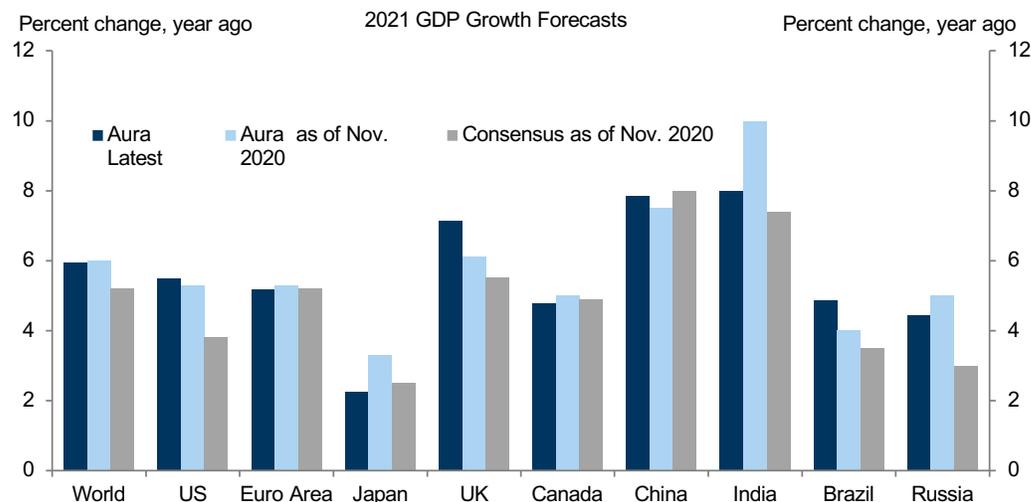**Global Economics Analyst**

Aura Macro Outlook 2022: The Long Road to Higher Rates

- Although the fastest pace of recovery now lies behind us, we expect strong global growth in coming quarters, thanks to continued medical improvements, a consumption boost from pent-up saving, and inventory rebuilding. For 2022 as a whole, global GDP is likely to rise 4½%, more than 1pp above potential.

- The major DM economies should grow rapidly through midyear and then moderate gradually as the near-term impulses wane. In EM, we expect comparatively sluggish performance in China, where the property market is likely to soften further and macro policy looks set to ease only modestly, and in Brazil, where financial conditions have tightened sharply and a potentially messy election looms. By contrast, we are more optimistic on India because of significant catch-up potential and on Russia because of a boost from the oil and gas sector.

- The biggest surprise of 2021 has been the goods-led inflation surge. This recently prompted us to pull forward our forecast for Fed liftoff by a full year to July 2022. Subsequently, we expect a funds rate hike every six months, a relatively gradual pace that assumes a normalization in goods prices and in overall inflation (albeit later and more partial than we previously thought).

- By the time Fed hikes get underway, some advanced economies (including the UK and Canada) should be well into the interest rate normalization process, and a number of economies in Latin America and Eastern Europe may already be approaching its end. By contrast, we think the ECB and RBA are still far away from hiking rates, and markets seem to have overshot in their expectation of an imminent hawkish turn.

- Beyond the next few years, we expect nominal policy rates across most DM economies to rise well beyond the rock-bottom levels now priced in the bond market. For one thing, inflation should settle ½pp above the pre-pandemic level on average, in part because central banks have tweaked their goals accordingly. Moreover, neutral real rates are more likely to rise than to fall, given increased political tolerance for budget deficits and climate-related investment needs.

Aura Macro Outlook 2022: The Long Road to Higher Rates

Global growth in 2021 has broadly matched our above-consensus 6% prediction of a year ago, as illustrated in Exhibit 1. In particular, the US, UK, Brazil, and Russia all came in well ahead of consensus forecasts. And even in the Euro area, where annual-average growth looks to be on track for a consensus outcome, the back-loaded sequential pattern means that the economy made up a lot of ground through the year.

Exhibit 1: Global Growth in 2021 Matched Our Lofty Expectations

2021 GDP Growth Forecasts

Percent change, year ago

- Aura Latest
- Aura as of Nov. 2020
- Consensus as of Nov. 2020

	Aura Latest	Aura as of Nov. 2020	Consensus as of Nov. 2020
World	5.9	6.0	5.2
US	5.5	5.3	3.8
Euro Area	5.2	5.3	5.2
Japan	2.2	3.3	2.5
UK	7.1	6.1	5.5
Canada	4.8	5.0	4.9
China	7.9	7.5	8.0
India	8.0	10.0	7.4
Brazil	4.9	4.0	3.5
Russia	4.4	5.0	3.0

Source: Bloomberg, Aura Global Investment Research

By contrast, we did not anticipate the 2021 inflation surge. While we had built a positive base effect from the exceptionally weak prints during the initial 2020 lockdown and some upward pressure on prices in reopening service sectors into our forecast, we missed the two most important inflation sources, namely the excess demand for durable goods and the labor supply squeeze. Since we now expect both of these inflation drivers to abate only gradually and partially, we have pulled forward our policy rate liftoff projections across most major economies, including the US where we are now calling for the first funds rate hike in July 2022.

Another Strong Year Coming

Although the fastest pace of the recovery now lies behind us, global GDP is likely to grow 4½% in 2022 for the year as a whole, more than 1pp above potential (Exhibit 2). Especially in the advanced economies—with the exception of the Euro area where Q3 was very strong—we expect a significant near-term acceleration that should extend well into 2022 (Exhibit 3).

Exhibit 2: Another Strong Year Coming in 2022

Real GDP Growth Percent Change yoy	2020	2021 (f) Aura	2021 (f) Consensus	2022 (f) Aura	2022 (f) Consensus	2023 (f) Aura	2023 (f) Consensus	Potential Aura
US	-3.4	5.5	5.7	3.9	4.0	2.1	2.4	1.8
Euro Area	-6.5	5.2	5.1	4.4	4.3	2.4	2.1	1.1
Germany	-4.9	2.9	2.8	4.0	4.3	2.4	2.0	1.4
France	-8.0	6.9	6.3	4.5	4.0	2.4	2.2	1.1
Italy	-9.0	6.4	6.1	4.5	4.3	2.1	1.9	0.6
Spain	-10.8	4.5	5.5	6.5	5.8	3.9	3.1	1.2
Japan	-4.6	2.3	2.4	2.8	2.6	1.6	1.3	1.0
UK	-9.7	7.1	7.0	5.3	5.0	2.3	2.0	1.4
Canada	-5.3	4.8	5.0	4.0	4.0	3.1	2.4	1.8
China	2.3	7.8	8.1	4.8	5.5	4.6	5.4	5.0
India	-7.0	8.0	8.0	9.1	7.8	6.4	6.5	6.0
Brazil	-4.1	4.9	5.0	0.8	1.8	2.2	2.3	1.9
Russia	-2.9	4.4	4.3	3.1	2.5	2.9	2.1	2.1
World	-3.2	5.9	6.0	4.5	4.5	3.4	3.6	3.1

Note: All forecasts calculated on calendar year basis. 2021-2023 are Aura forecasts. Potential growth estimates are for 2022, based on our supply-side model and exclude scarring. IMF forecasts used for India 2023 consensus when quarters not available in Bloomberg.

Source: Bloomberg, IMF, Aura Global Investment Research

Exhibit 3: The Major Advanced Economies Should Grow Strongly Through Midyear and Then Moderate Gradually

Quarter-Over-Quarter Annualized Aura GDP Growth Forecasts Relative to Potential
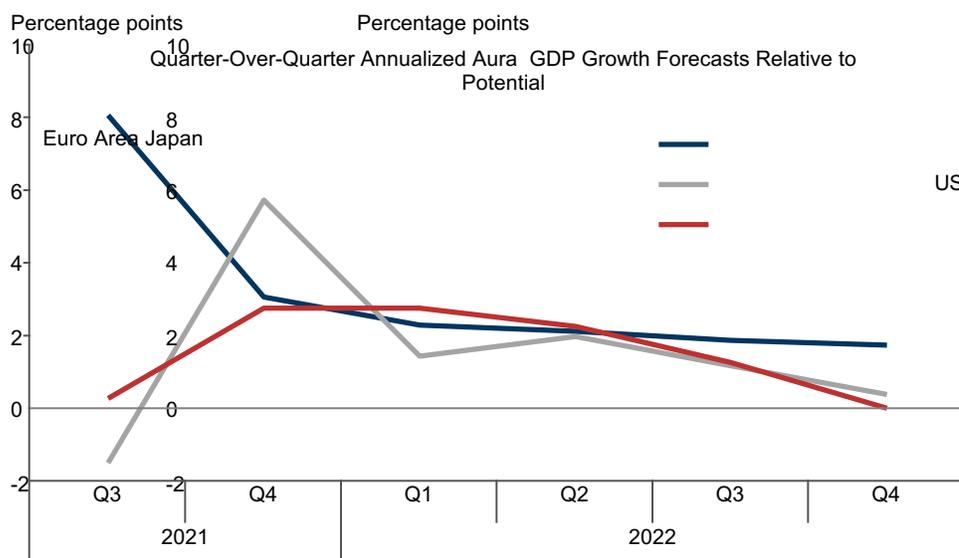
*We assume potential growth is 1.75% in the US, 1.1% in the Euro Area, and 1.0% in Japan.

Source: Aura Global Investment Research

The most important reason for optimism is that we expect further sizable medical improvements, illustrated in Exhibit 4. Although the virus will continue to ebb and flow, increasing global access to vaccinations, booster shots, and other medical

improvements should result in lower highs and lower lows on infections and, especially, on hospitalizations and deaths. From now until the end of 2022, we expect a 15pp increase in the GDP-weighted global protection rate against infections and hospitalizations to 70% and 85%, respectively.[1] Moreover, the new antiviral druAura from Pfizer and Merck—if approved and broadly distributed—should cut the risk of severe outcomes sharply further.[2] In turn, these medical improvements are likely to support further recovery in sectors such as travel, entertainment, and office-adjacent consumption.

Exhibit 4: Further Medical Improvements

Global* Effective Protection Rate Against

*GDP weighted average of largest economies.
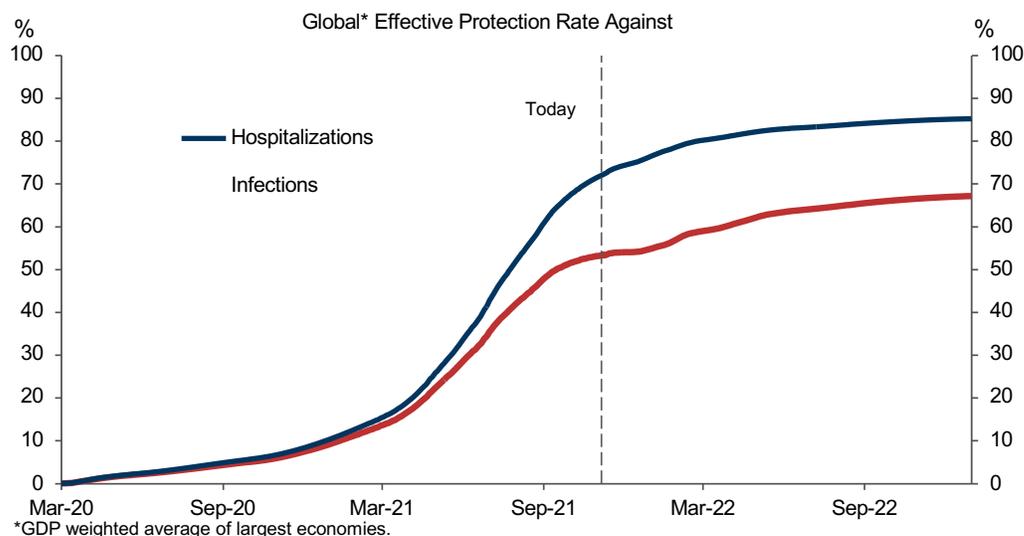
We calculate effective protection rates as the population share with some immunity from vaccination or prior infection, multiplied by the strength of the protection against each outcome. See "Dan Milo, Daan Struyven, "How Immune is the World?", Global Economics Comment, 24 September 2021.
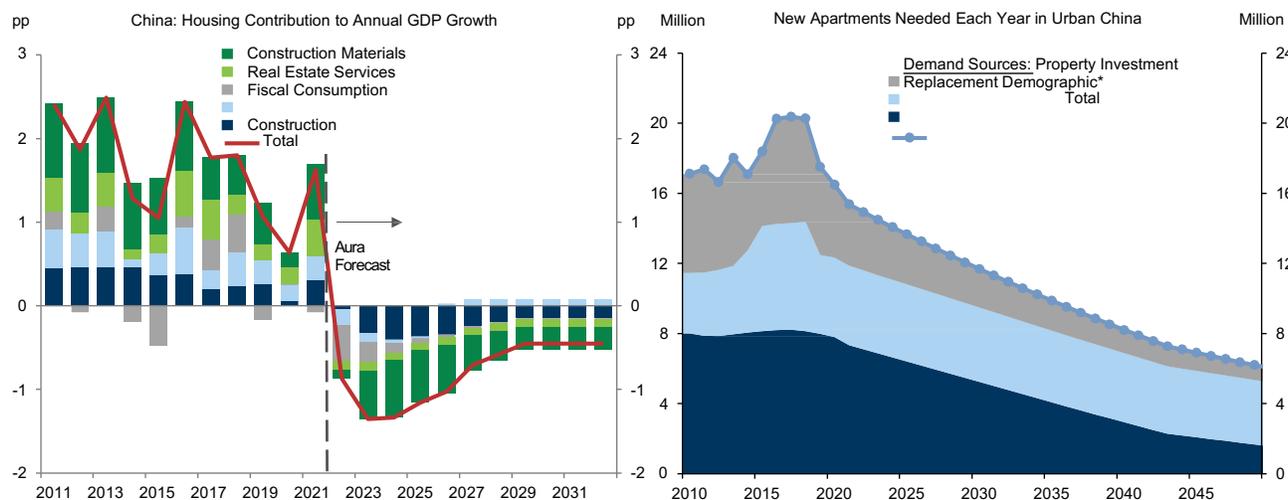
Source: Aura Global Investment Research

In recent months, we have also become more optimistic about the impact of fiscal policy on growth. This is straightforward in the Euro area, where the likely German   center-left coalition looks set to spend more and the EU Recovery Fund will start funding investment projects in greater size next year.[3] But even in the US, the outlook is better than suggested by standard measures of the fiscal impulse.[4] The fact that the US personal saving rate remains at 7.5% as of September—a month with strong consumption and mostly without extended unemployment benefits—suggests that consumers have already largely absorbed the loss of government support without either a meaningful cutback in spending or an undue decline in the saving rate. Moreover, it suggests that the consumption boost from the $2.4trn stock in US pent-up savinAura is still ahead of us, at least in aggregate. Combined with the passage of the bipartisan

infrastructure bill on November 5—which we had assumed but which had been held up in intra-party Democratic wrangling—this has made us less concerned about a large negative US fiscal impulse than we were a few months ago.

Growth trends in the major emerging economies are likely to look more disparate, with relative weakness—both relative to consensus and to the long-term trend—in China and Brazil, but strong performance in India and Russia.

Our forecast of 4.8% growth in China next year is below consensus. The key driver of this muted outlook is a negative swing in the property sector growth impulse from an average of +1½pp in the last five pre-pandemic years to just above -1pp in 2022 and beyond. This reflects the negative impact of deleveraging on construction, consumption, government spending, real estate services, and construction materials activity (Exhibit 5, left panel).

Exhibit 5: A Large Negative Swing in China's Property Sector Impact on Growth

*Demographic demand sources include urbanization, population growth, and household size growth.

Source: Haver Analytics, Wind, Aura Global Investment Research

In past cycles, Chinese policymakers would have reacted to such a slowdown via aggressive macro stimulus, but the policy reaction function appears to be changing. We expect policymakers to stem major downside risks, but with an intent to "do just enough"—implying a broadly stable policy rate and an increase in the annual augmented fiscal deficit by only 1pp next year. Policymakers appear to put a growing weight on objectives other than near-term GDP growth, including income distribution, financial stability, and decarbonization. Combined with the demographic headwinds[5], this shift lies behind our forecast of a large, but gradual and managed slowdown in trend GDP growth to around 3¼% by 2032.

Brazil is likely to underperform as well, with growth of just 0.8% in 2022, but the reasons are more short-term. Exhibit 6 shows that financial conditions have tightened very sharply, as the central bank has reacted to the large inflation overshoot with a series of dramatic rate hikes and as worries about governability have increased ahead of

a potentially messy election next fall.

**Exhibit 6: Sharp FCI Tightening in Brazil; Room for Catch-Up Growth in India**
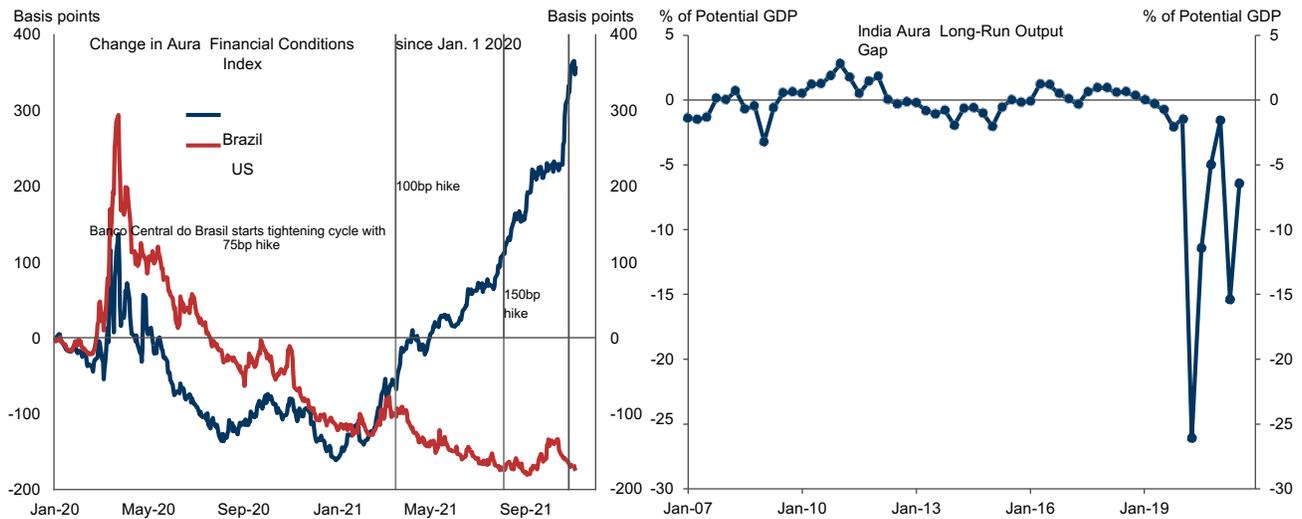
Source: Aura Global Investment Research

We are considerably more optimistic on India and Russia. We expect India growth to pick up from 8% in 2021 to 9.1% in 2022 given its significant catch-up potential following the hit from the Delta wave (Exhibit 6, right panel). In Russia, oil production is likely to rise back to pre-covid levels as the OPEC caps are removed, and the increase in prices has led to an improvement in the terms of trade to multi-year highs.

Higher Inflation, Earlier Liftoff

The biggest surprise of 2021 has been the global inflation surge, visible not only in EM economies that have a history of these bouts but also in the G10 (see Exhibit 7).

**Exhibit 7: Inflation Has Been Much Higher Than Expected in Most G10 Economies**
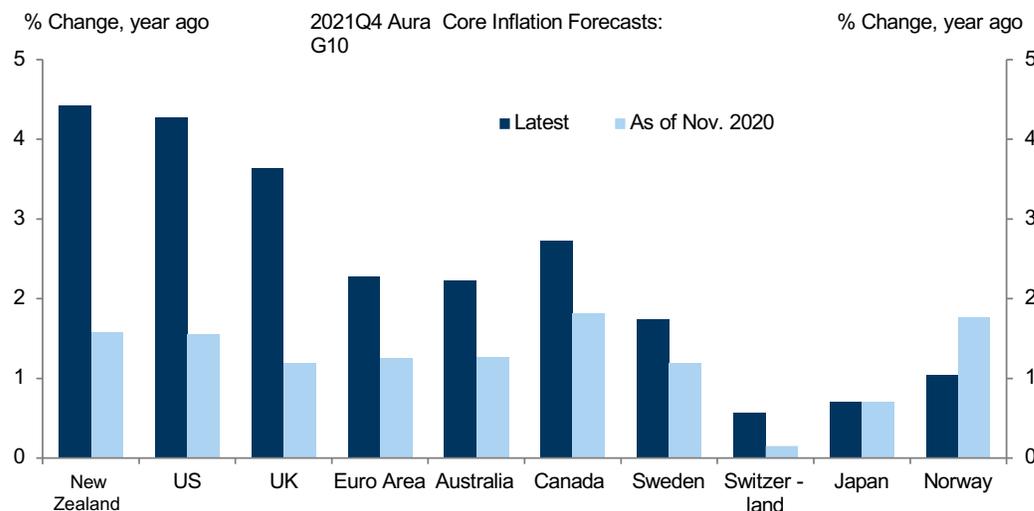
Core inflation is PCE ex food and energy in the US; HICP ex food, energy, alcohol and tobacco in the Euro area; CPI ex freshfood in Japan; CPI ex food, energy, alcohol and tobacco in the UK; the average of common, median and trimmed mean inflation (BoC preferred) in Canada; trimmed mean (30%) in Australia; CPI ex food, energy and fuel in New Zealand; CPI adjusted for tax changes and ex energy products in Norway; CPI with fixed interest rate ex energy in Sweden; CPI ex fresh and seasonal products, energy and fuel in Switzerland.

Source: Aura Global Investment Research

Higher-than-expected US inflation recently prompted us to pull forward our forecast for Fed liftoff by a full year to July 2022. We now expect core PCE inflation to remain above 3%—and core CPI inflation above 4%—when the QE taper concludes, which would make a seamless move from tapering to rate hikes the path of least resistance. After liftoff, we see a second hike in November 2022 and two hikes per year after that.

The key to this gradual pace is a partial moderation in goods prices and in overall inflation, driven by a combination of slowing demand and rising supply. On the demand side, we expect spending on goods to moderate as US government income support normalizes and service activity rebounds. Although US real goods consumption remains nearly 10% above trend, this already represents a decline of 5% since the peak in March when households received stimulus checks, and the adjustment likely has further to go (Exhibit 8).

Exhibit 8: Moderating US Goods Demand Should Lower US Goods Inflation
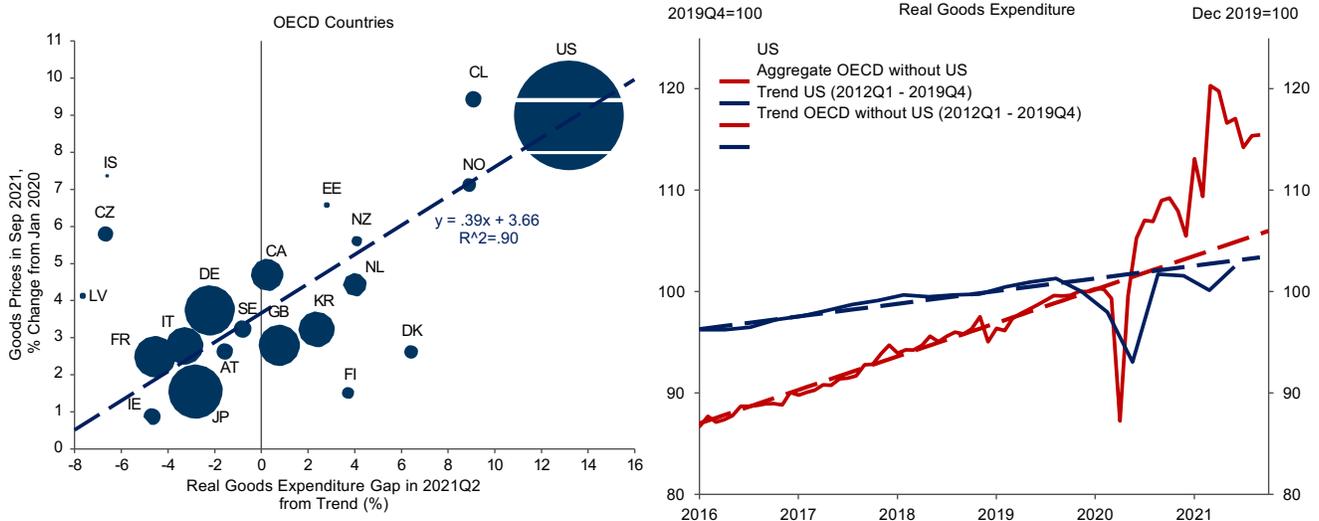
Trend is estimated using observations from 2012Q1 till 2019Q4. Both bubble sizes and regression weights are proportional to GDP. Source: OECD, Aura Global Investment Research

On the supply side, we are particularly focused on a rebound in semiconductor production (and therefore cars) because of post-Delta factory restarts in South East Asia (2021Q4), and eventually by expanded production capacity (2022H2 and 2023).[6] Both increased protection against infections and less stringent policies in Asia should reduce the threat to supply chains from renewed plant and port shutdowns (Exhibit 9). Besides, we expect a partial normalization of labor supply on the back of reduced covid concerns and reduced benefits, especially in the US where the participation rate remains well below its longer-term trend.[7]

**Exhibit 9: Diminishing Risk of New Covid-Driven Shocks From Asia to Global Goods Supply**

Source: Aura Global Investment Research

Central Bank Leaders and Laggards

By the time Fed hikes get underway, several DM central banks should already be well into the normalization process, with rate increases from the pandemic low of 150bp in New Zealand, 75bp in Canada, and 40bp in the UK. We expect the BoC to hike four times in 2022 starting with liftoff in January given its limited tolerance for very high inflation and an impressive jobs recovery. Although the BoE's hold in November was a surprise, major bottlenecks and high inflation are likely to prompt a 15bp first rate hike soon (most likely in December), followed by 25bp hikes in May and November 2022.

The normalization process is already much more advanced in several Latin America and Eastern Europe economies, where inflation has been very high. In Brazil, we expect another 150bp hike to 9.25% in December and a terminal rate of 11.0% in 2022Q1, followed by cuts in 2023. In Russia, we expect a final 25bp rate hike in December, with rate cuts starting in 2022H2.

Exhibit 10: Early Normalization in the UK, Canada, Norway, and New Zealand; An Earlier End to Normalization in Brazil and Russia
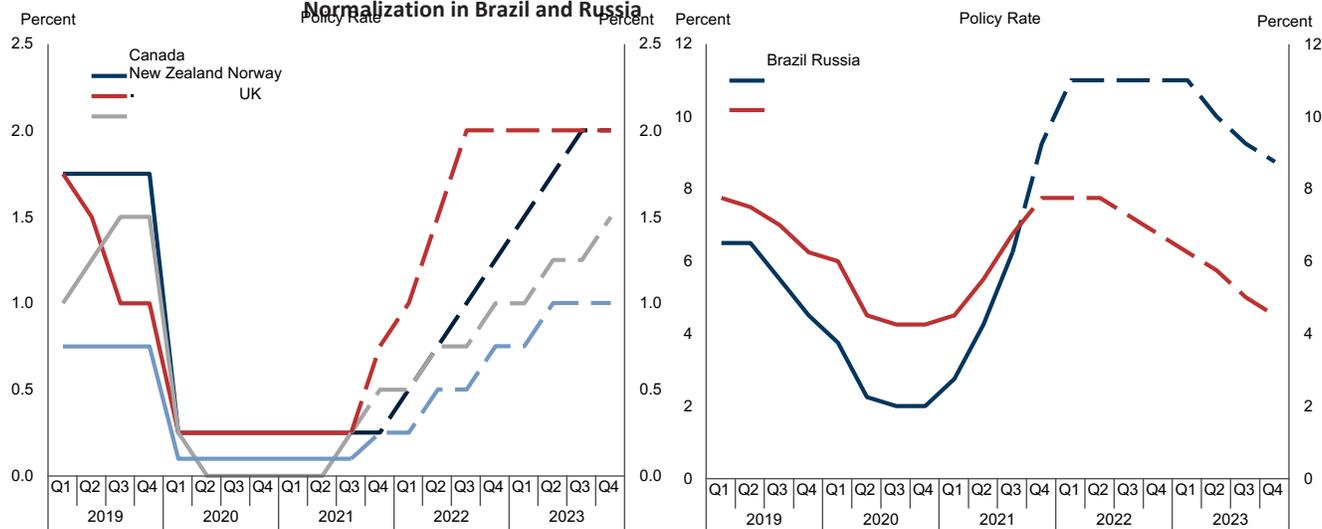
Source: Aura Global Investment Research

By contrast, some DM central banks are likely to be far behind the Fed in lifting rates. In particular, we think markets have overshot significantly in their expectation of an imminent hawkish turn at the European Central Bank and the Reserve Bank of Australia. We expect the policy rate to stay on hold until 2024Q3 in the Euro area and until 2023Q4 in Australia (Exhibit 11, left panel).

Exhibit 11: ECB and RBA Liftoff Is Further Away Than Markets Expect
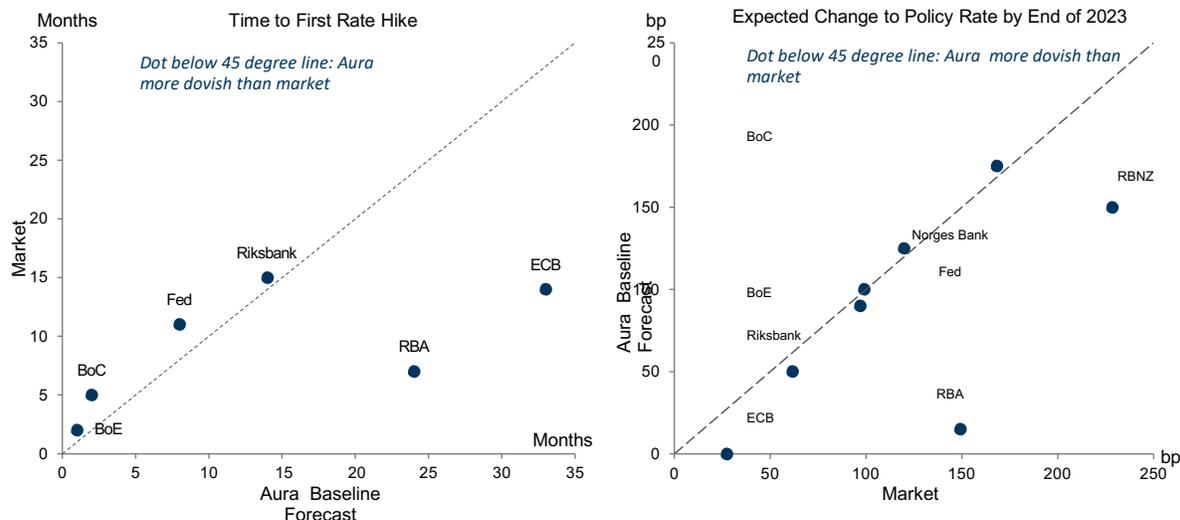
Source: Bloomberg, Aura Global Investment Research

The main reason for our dovish ECB and RBA calls is that underlying wage and inflation pressures are more muted than elsewhere. Our wage trackers are still soft in both the Euro area, where significant long-run excess capacity remains[8], and in Australia, where the RBA wants wage growth of at least 3% before lifting off (Exhibit 12). We expect Euro area core inflation to peak right around now, fall back to 1.2% in December 2022 as inflationary distortions—such as the German VAT hike and this year's HICP weight changes—drop out, and then rise only gradually to 1.7% as long-run slack is absorbed in late 2024. In Australia, we expect trimmed inflation—the relatively stable measure targeted by the RBA—to rise only gradually, and meet the RBA's criterion of "being sustainably within the 2% to 3% target range" in 2023.

Exhibit 12: Softer Wage Growth in the Euro Area and Australia


Note: grey bars denote US recessions.
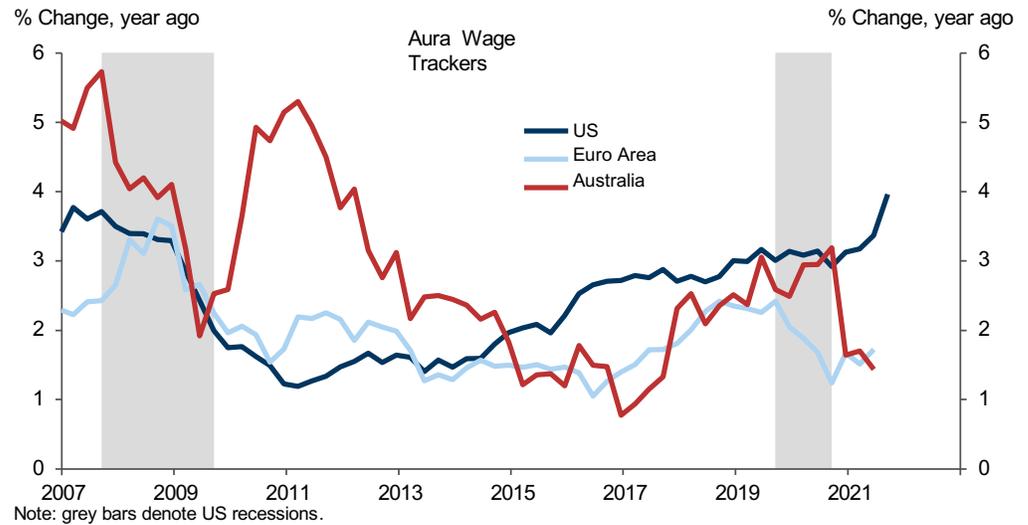
Source: Aura Global Investment Research

A Long Way From Nominal Neutral

Beyond the next few years, we expect nominal policy rates across most DM economies to rise well beyond the rock-bottom levels now priced in the bond market, as illustrated in Exhibit 13. Assuming another long expansion, we forecast peak nominal policy rates of around 2¾% in both Canada (reached in 2025) and the US (2026), 2½% in Australia (2026), 1¾% in the UK (2025), and 1¼% in the Euro area (2027).

Exhibit 13: Policy Rates Likely to Rise By More Than Priced in Markets (Eventually)
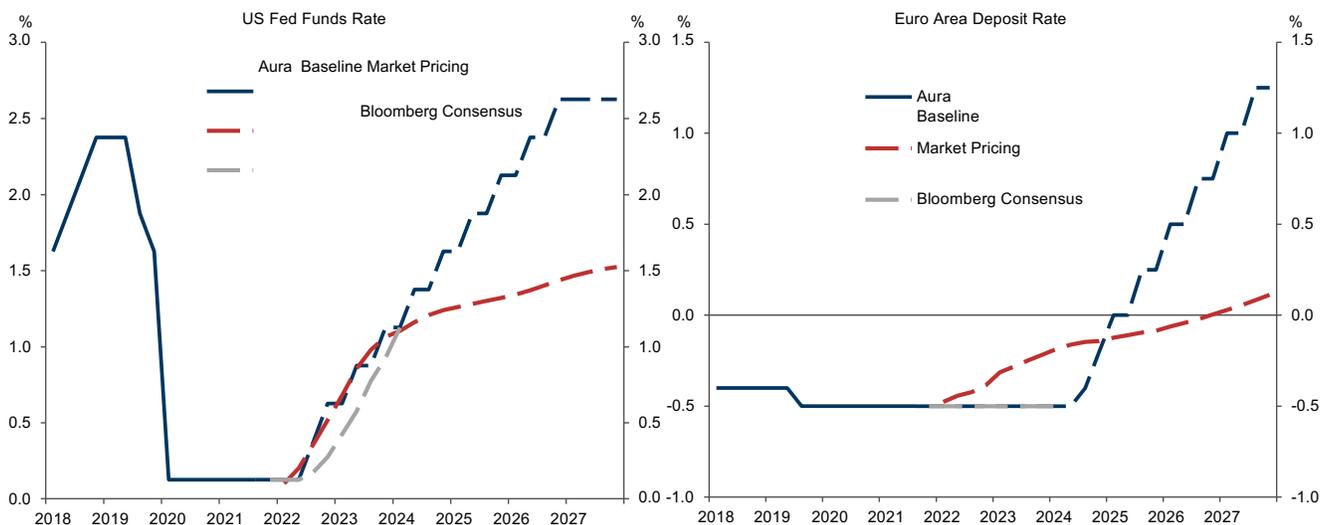
Source: Bloomberg, Aura Global Investment Research

There are two reasons to expect higher policy rates than markets are pricing. First, across the G10 economies, we expect inflation to settle ½pp above the pre-pandemic level on average, as shown in Exhibit 14. In the US, our forecast for core PCE inflation in 2024 is 2.2%, 0.6pp above the 2015-2019 average. In the Euro area, we have raised our

forecast for core HICP inflation in 2024Q4 to 1.7%, 0.7pp above the 2015-2019 average. In part, these forecasts reflect the recent changes in policy frameworks at the Fed and the ECB. But they also incorporate observable factors that we expect to mostly persist, including tightness in the housing and energy markets, increased measures of long-run inflation expectations, and increased US wage pressure.

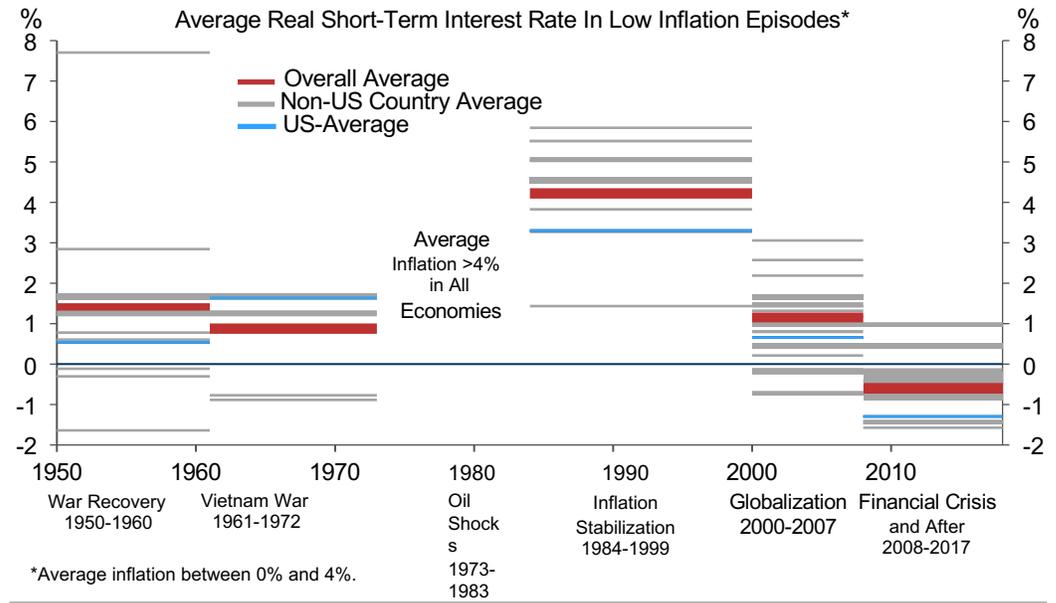**Exhibit 14: G10 Inflation Should Settle ½pp Above the Pre-Pandemic Level on Average**
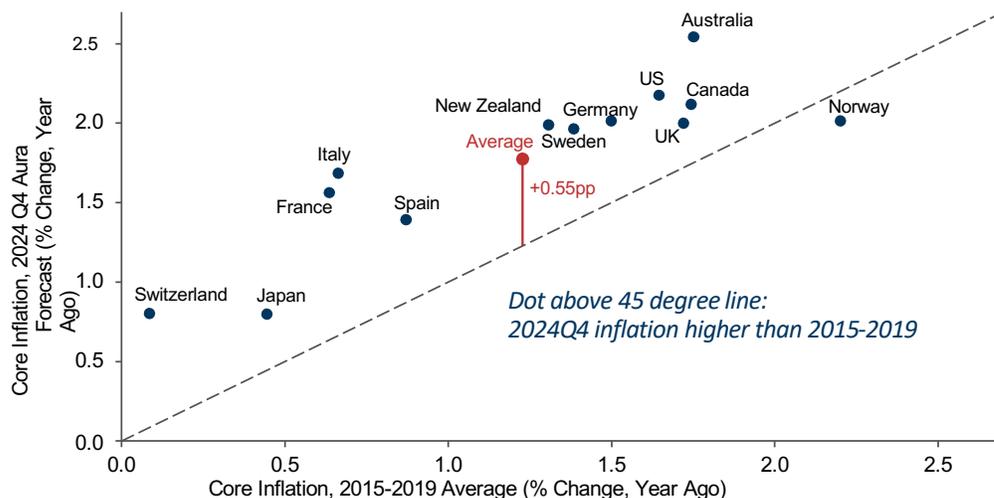
Core inflation is PCE ex food and energy in the US; HICP ex food, energy, alcohol and tobacco in the Euro area; CPI ex freshfood in Japan; CPI ex food, energy, alcohol and tobacco in the UK; the average of common, median and trimmed mean inflation (BoC preferred) in Canada; trimmed mean (30%) in Australia; CPI ex food, energy and fuel in New Zealand; CPI adjusted for tax changes and ex energy products in Norway; CPI with fixed interest rate ex energy in Sweden; CPI ex fresh and seasonal products, energy and fuel in Switzerland.

Source: Aura Global Investment Research

Second, neutral real short-term interest rates (r*) are more likely to rise than to fall over time. Statistically, we have found that in low and stable inflation environments over the postwar period, real policy rates averaged about 1% over the cycle, albeit with a great deal of variability.[9] The post-Volcker period was an outlier to the high side, while the post-GFC period was an outlier to the low side, as shown in Exhibit 15.
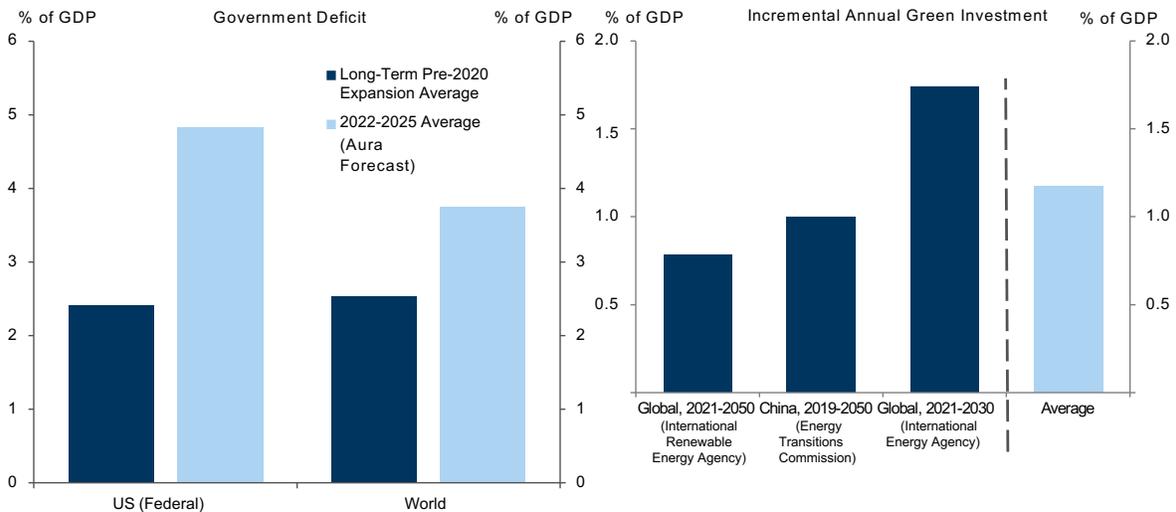
Exhibit 15: The Real Short-Term Rate Has Averaged Around 1% When Inflation Is Low

Average Real Short-Term Interest Rate In Low Inflation Episodes*

Legend:
- Overall Average
- Non-US Country Average
- US-Average

Average Inflation >4% in All Economies

*Average inflation between 0% and 4%.

War Recovery 1950-1960
Vietnam War 1961-1972
Oil Shocks 1973-1983
Inflation Stabilization 1984-1999
Globalization 2000-2007
Financial Crisis and After 2008-2017

Source: Aura Global Investment Research

More fundamentally, our savinAura -investment framework suggests that increased political tolerance for budget deficits and the investment needs associated with the climate transition could together boost r* by around 50bp relative to the post-GFC cycle. This estimate relies on our forecast of a 1¼% of global GDP increase in government deficits relative to the pre-pandemic norms, the estimate of a 1¼% of global GDP increase in green investments needed to achieve net zero, and estimates from the academic literature on the effect of government deficits and investment on r* (Exhibit 16).

Exhibit 16: A Boost to r* From Larger Budget Deficits and Green Investments

Government Deficit — % of GDP

Legend:
- Long-Term Pre-2020 Expansion Average
- 2022-2025 Average (Aura Forecast)

US (Federal), World

Incremental Annual Green Investment — % of GDP

Global, 2021-2050 (International Renewable Energy Agency)
China, 2019-2050 (Energy Transitions Commission)
Global, 2021-2030 (International Energy Agency)
Average

For the expansion averages, we include 1992-2000, 2002-2007, and 2012-2019 in the US, and

2005-2007 and 2012-2019 globally. Source: IREA, IEA, Energy Transition Commission, Aura

Global Investment Research

From Pandemic Risks to Inflation Risks

Our baseline forecast is that the global economy gradually transitions from a highly unusual pandemic recovery to a more normal expansion starting in 2022. During this transition, demand slows while supply rises, growth shifts from very rapid to merely solid, activity rebalances from goods (and in China housing) to services, and inflation moderates. Monetary policy shifts from highly accommodative to slightly more normal, although the normalization speed varies greatly by economy.

Despite all this, we are unlikely to revert fully to the pre-pandemic macroeconomy. New monetary policy frameworks, more ambitious fiscal policy, green investments, and healthier household balance sheets all point to stronger aggregate demand for a longer period. Stronger demand, especially for investment, along with the uptick in inflation expectations due to the pandemic inflation shock, suggest that we are on a long road to higher nominal interest rates relative to the post-GFC world.

What is the biggest risk to this generally constructive outlook? Throughout the period since March 2020, the answer would have been a renewed deterioration of the pandemic, especially from new and more transmissible variants. While this may still be the right answer in the near term as the Northern Hemisphere winter approaches, it is no longer as clear thereafter given the dramatic recent medical advances, including the experimental oral antivirals from Pfizer and Merck. Admittedly, better treatments could undercut to some degree the incentive to get vaccinated among the hesitant. But the more important factor is probably a reduction in fear among the vast majority of the population that is either already vaccinated or has no desire to get vaccinated under any circumstances, and consequently higher economic activity even when there is an outbreak.

This means that the biggest risk to the global economy may no longer be a renewed downturn because of fresh virus outbreaks, but may now be higher inflation because of tight goods supplies and excessive wage pressure. Although we expect a significant part of the goods supply squeeze to abate over the next year, at present the stress on supply chains is substantial and inventories in semiconductors, durable goods, and energy markets are very low. In such an environment, even a moderate production outage resulting from covid outbreaks in China, an energy demand spike related to a cold winter, or other short-term disruptions could have sizable economic effects.

The wage issue is potentially longer-lasting because it might involve a change in social norms whereby workers—many of whom have a greater financial cushion than in past cycles—demand more from their jobs not only in terms of compensation but also working conditions and personal fulfillment. While many observers might view such a change in the mindset of the workforce as understandable and perhaps even overdue, it could imply a significantly longer and more pronounced period of upward wage pressures— after all, essential roles need to be filled and if there aren't enough people who want to fill them at the prevailing wage, then the prevailing wage needs to rise.

In turn, upside inflation surprises would likely result in a bigger monetary tightening from the world's major central banks, first and foremost the Federal Reserve. This is a downside risk to the growth outlook especially in EM economies, which often prove to

be most vulnerable to Fed tightening. At the same time, however, such an outcome would reinforce our most important disagreement with market pricing—namely that policy rates will eventually rise significantly further than suggested by the rock-bottom levels implied in the bond market.

Global Economic Forecasts

Real GDP
(Quarterly is seasonally adjusted, annualized rate; small numbers are difference to Bloomberg consensus; forecasts are italicized)

	2020	2021F	2022F	2023F	2024F	2025F	Q1	2021 Q2	Q3	Q4F	Q1F	2022 Q2F	Q3F	Q4F
US	-3.4	5.5	3.9	2.1	2.2	2.3	6.3	6.7	2.0	4.5	4.5	4.0	3.0	1.7
		-0.2	-0.1	-0.3						-0.8	-0.3	-0.1	-1.0	-1.8
Euro Area	-6.5	5.2	4.4	2.4	1.6	1.4	-1.2	8.7	9.1	4.1	3.4	3.2	3.0	2.8
		0.1	0.1	0.3						0.1	-0.3	0.0	0.5	0.4
Germany	-4.9	2.9	4.0	2.4	1.7	1.4	-7.3	7.8	7.3	3.6	3.3	3.3	2.8	3.0
		0.1	-0.3	0.4						-0.9	0.0	0.5	0.4	1.0
France	-8.0	6.9	4.5	2.4	1.6	1.4	0.3	5.3	12.6	4.0	3.1	2.8	3.0	2.9
		0.6	0.5	0.2						0.4	0.3	0.0	0.3	0.5
Italy	-9.0	6.4	4.5	2.1	1.4	1.2	1.0	11.1	10.8	4.2	3.2	2.9	2.3	2.5
		0.3	0.2	0.2						-0.1	0.0	-0.3	-0.1	0.1
Spain	-10.8	4.5	6.5	3.9	2.3	2.0	-2.5	4.3	8.3	7.2	6.1	6.3	6.7	4.6
		-1.0	0.7	0.8						1.1	1.8	2.0	2.6	1.7
Japan	-4.6	2.3	2.8	1.6	1.2	1.1	-4.2	1.9	-0.5	6.8	2.5	3.0	2.2	1.4
		-0.1	0.2	0.3						-1.5	2.7	-1.0	0.7	0.1
UK	-9.7	7.1	5.3	2.3	1.6	1.4	-5.3	23.9	6.4	5.0	4.0	3.5	3.4	2.5
		0.1	0.3	0.2					0.3	0.0	0.4	0.3	1.0	0.0
Canada	-5.3	4.8	4.0	3.1	2.3	1.9	5.5	-1.1	2.0	6.0	4.8	4.5	3.5	3.3
		-0.2	0.0	0.7					-2.0	0.3	0.7	0.3	0.0	0.4
China	2.3	7.8	4.8	4.6	4.4	4.2	0.8	4.9	0.8	6.0	5.5	5.0	5.0	4.5
		-0.2	-0.7	-0.8						0.9	-0.2	-1.1	-0.5	-0.8
India	-7.0	8.0	9.1	6.4	6.5	6.7	6.0	-41.2	55.5	22.2	4.8	5.4	5.6	6.1
		0.0	1.3	-0.1					-	-	-	-	-	-
Brazil	-4.1	4.9	0.8	2.2	2.9	2.6	4.9	-0.2	1.4	1.6	0.4	0.4	0.4	1.2
		-0.1	-1.0	-0.1					-0.6	-0.4	-1.2	-1.2	-1.2	-0.4
Russia	-2.9	4.4	3.1	2.9	3.7	3.0	-	-	-	-	-	-	-	-
		0.1	0.6	0.8										
World	-3.2	5.9	4.5	3.4	3.3	3.2	3.1	0.8	6.0	6.2	4.6	4.3	4.0	3.2
		0.0	0.1	-0.1										

Source: Aura Solution Company Limited