BofA SECURITIES

The Global Thinker

Around the world in 5 questions

Is global growth less synchronized?

As the dust of the pandemic settles, we expect a mild global slowdown with less synchronized growth and inflation dynamics. We expect the US to continue to lead growth and dictate the pace of interest rate moves globally. Japan is the big growth and inflation surprise, with implications for global rates. China is suffering a confidence shock and the government needs to come up with a comprehensive plan to stabilize expectations. Europe's recovery will remain anemic. The global growth composition does not look favorable for EM, but Brazil, Mexico and India will likely keep outperforming, while ASEAN is being impacted by China. Inflation risks are to the upside and central banks will keep rates high for longer, while China will continue fighting deflation.

Why is the US economy so resilient?

The resilience of the US economy can be explained by essentially two factors: a fasterthan-expected recovery in business investment and strong private consumption, fueled by a solid household balance and a tight labor market. Fiscal impulse was higher than expected. Households and corporates refinanced mortgages and debt when rates were low. Real estate prices are high due to lock-in effects. Risks are mostly related to high for longer policies and excessively loose fiscal policy pressuring on interest rates.

What is different about Europe?

Europe is underperforming the US and inflation remains persistent. The underperformance is both structural and cyclical. The energy shock hit Europe harder than the US. The size and composition of the fiscal response to the shocks explains the consumption boom in the US relative to Europe, while the strength of investment in the US is absent in Europe. Europe is more exposed to China's slowdown than the US. Sentiment is weak and excess savings remain high driven by precautionary motives.

Can we see geopolitics in the data?

Geopolitical alliances are changing the way countries trade and capital flows. China exports are shifting away from the West. Mexico is gaining share in US imports. Reshoring and nearshoring are manifesting in the manufacturing boom in the US and Mexico. US FDI is shifting out of China into ASEAN and LatAm. Next year we have elections in countries that represent 63% of world GDP, including the US, Mexico, India, and Taiwan. With polarization on the rise, we expect an increase in policy uncertainty.

What are the limits of fiscal policy?

Fiscal policy deteriorated across countries post pandemic and the increase in interest rates is threatening debt sustainability absent sizable fiscal consolidation. Fiscal policy is losing power to fight the next recession. Higher US real rates spillover into global rates and fiscal policy is one of the factors driving a higher r*. Fiscal policy might end up conditioning the conduct of monetary policy. Fiscal dominance is not around the corner but is not light years away either.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

Bof A Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Refer to important disclosures on page 26 to 28. 12606356

Timestamp: 28 September 2023 06:26AM EDT

28 September 2023 Corrected

Economics Global

Claudio Irigoyen Global Economist **BofAS** +1 646 855 1734 claudio.irigoyen@bofa.com

Contents

	Around the world in 5 questions	3						
	Is global growth less synchronized?	3						
	Growth dynamics: Americas lead the way	3						
	China needs to address its imbalances	4						
	Rest of the world also shows uneven growth dynamics	5						
	With inflation moving lower central banks are turning	6						
	Why is the US economy so resilient?	9						
	Nothing can stop this investment feeling	9						
	Healthy consumer fundamentals	9						
	Households, corporates, banks and the govt: the goods, the bad and the ugly	11						
	Fiscal policy also played a role	11						
	What can go wrong?	12						
What is so different about Europe?								
	A tale of two shocks	14						
	The composition of fiscal support conditioned the speed of recovery	14						
	Employment adjusted through the intensive margin in Europe	15						
	A few other factors: investment, China, and the private sector balance sheet	15						
	Inflation is more persistent in Europe, but financial conditions are tighter	16						
	Can we see geopolitics in the data?	16						
	Reshoring is a reality boosted by US Congress	18						
	Mexico has a lifetime opportunity	19						
	A wave of presidential elections in a highly polarized world	20						
	What are the limits of fiscal policy?	22						
	A new regime?	22						
	Fiscal policy in the US as an example of Congress paralysis	23						
	A look at the recent repricing of interest rates and r*	24						
	Is a fiscal dominance scenario too farfetched?	25						



Around the world in 5 questions

In this new series, we focus on the hot topics regarding the global economy, taking a look at some of the most frequently asked questions from clients. The world economy is going through significant structural changes after many years of smooth globalization dynamics, which were altered by the irruption of two huge global shocks: the pandemic and the Russia-Ukraine conflict. In this first report, we take a tour around the world in 5 questions.

Is global growth less synchronized?

The pandemic was a global shock and, not surprisingly, the sharp drop and rebound in economic activity, as well as the post-pandemic inflation spike was broad-based across regions. All countries moved somewhat in tandem. However, as the dust settles, we are starting to see somewhat heterogeneous dynamics, both in terms of growth and inflation (see Exhibit 1).

The different growth dynamics are not independent of the global shocks referred above. Countries differed in the way they reacted to the shock, both in the size and composition of monetary and fiscal support. In addition, not all countries were impacted in the same magnitude by the global shocks. A clear example is the differential impact of the energy shock in Europe vs the US.

This heterogenous response is extending to the stance of central banks in developed and emerging economies. Some are in the camp of one more hike and hold for longer, while others have already started the easing cycle.

Growth dynamics: Americas lead the way

Relative to our year ahead growth forecast back in November, most economies surprised to the upside, except for China. We revised upward the growth forecast for the US, Japan, Mexico, Brazil and Türkiye. On inflation, surprises were more limited, as the disinflation trend has been broad based-across countries. The biggest upward revisions are in EEMEA. China is again the exception as the country is flirting with deflation (see Exhibit 2 and Exhibit 3).

Among our biggest upward revisions to growth forecasts, the US stands out. We no longer expect a recession but a soft landing, with the economy growing below trend and bottoming in mid-24. The resilience of consumption, driven by strong household balance sheets and the strength of investment helped by supportive legislation, explains the outperformance of 1H23 and our change of call. Fiscal impulse also played a relevant role. Relative to the Euro Area or China, consumer and business confidence is much stronger, which also helps understand consumption and investment dynamics.

Exhibit 1: Global growth less synchronized than inflation

Global forecasts for main countries and regions

	GDP growth			CPI inflation				
	2022	2023F	2024F	2025F	2022	2023F	2024F	2025F
Global	3.6	3.0	2.8	3.0	8.3	6.5	6.3	4.0
US	2.1	2.1	1.1	1.3	8.0	4.2	3.2	2.2
Euro area	3.4	0.5	0.5	1.3	8.4	5.7	2.7	1.5
Japan	1.0	2.1	1.2	1.2	2.5	3.1	2.7	1.6
China	3.0	5.1	4.8	4.8	2.0	0.4	1.8	2.1
Developed Markets	2.6	1.4	0.9	1.3	7.4	4.8	2.9	1.9
Emerging Markets	4.3	4.1	4.2	4.1	8.1	6.2	6.0	4.4
Emerging Asia	4.2	5.1	4.9	4.7	3.6	2.2	2.5	2.7
Emerging EMEA	5.6	1.9	3.2	3.2	25.3	22.8	21.7	12.3
Latin America	3.7	1.9	1.7	2.2	7.7	4.9	4.1	3.6

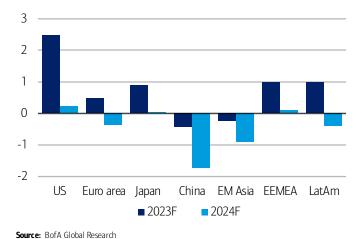
Source: BofA Global Research



Exhibit 2: Growth forecast revisions vs year ahead forecasts

2023 and 2024 growth forecasts vs 2023 YA

Note: YA forecasts from November 2022.



-1.0-2.0

4.0

3.0 20

■ 2023F Source: BofA Global Research Note: YA forecasts from November 2022.

Euro

area

lapan

China

2024F

US

Exhibit 3: Inflation forecasts revisions vs year ahead forecasts

2023 and 2024 growth forecasts vs 2023 YA

BofA GLOBAL RESEARCH

EM Asia EEMEA LatAm

11.7

6.8

The US optimism extended to the rest of the USMCA (United States-Mexico-Canada

Agreement) block, and we raised our growth forecast for Mexico and Canada. We now expect Mexico to grow 3.2% and 1.4%, and Canada 1.6% and 0.6% this year and next year, respectively. We are more optimistic than consensus on Mexico. The combination of a resilient US story which translate into strong remittances, nearshoring flows, and higher public investment ahead of the elections explains our view. On Canada, we are moving towards a soft-landing narrative, but we expect the slowdown to be more pronounced than in the US, given the structure of the mortgage market and high household indebtedness.

BofA GLOBAL RESEARCH

A soft landing in the US is not a risk-free proposition

The baseline scenario of a soft landing in the US is not a risk-free proposition. Risks associated with a sharper slowdown are relevant, in particular if a persistent inflation dynamic forces the Fed to hike beyond our expectations or hold rates for longer. Longer than expected lags in the transmission of monetary policy can easily trigger a recession that could take longer to materialize but could be deeper than expected.

Excessively loose fiscal policy is also a relevant risk. The higher risk premium that the market is asking to finance the US deficit, could trigger a sharper slowdown as high-forlonger rates start impacting the rollover of corporate debt, investment, and consumption. In addition, the auto strike and the government shutdown represent some temporary risks to our growth forecast.

On the inflation side, higher wages on the back of a resilient labor market and robust consumption dynamics, as well as risks associated with energy and food prices are always a source of concern for inflation dynamics.

China needs to address its imbalances

On the other side of the spectrum, we started the year with a strong out-of-consensus call on China reopening. We argued that China would remove the zero-COVID policy after the 20th Communist Party Congress and before the end of 2022. The reopening indeed took place then. However, after a brief rebound in 1Q23, consumption dynamics disappointed relative to expectations in 2Q23 and we downgraded growth forecasts for China twice from 6.5% in the peak to 5.1% now for 2023 and 4.8% for 2024 on the back of a weaker than expected 2Q and a lack of forceful policy response.

Chinese authorities acknowledged that weak domestic demand is a primary concern but insisted that the current downturn is a temporary trough. They pledged stronger "counter-cyclical" adjustment, in line with the raft of previously announced piecemeal



Exhibit 4: Property market recovery disrupted as home sales decline Monthly home sales and monthly GFA sold (% yoy)

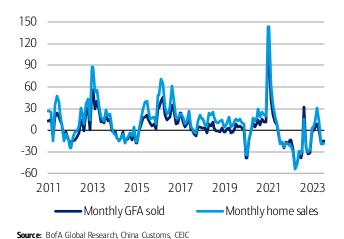
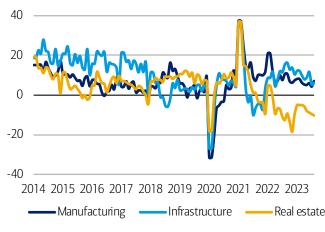


Exhibit 5: Investment decelerated on property slowdown Real estate FAI growth weakened further in April-July (% yoy)



Source: BofA Global Research, CEIC, NBS

BofA GLOBAL RESEARCH

measures but stopped short of announcing an aggressive stimulus package or hinting at any timeline for a potential one.

BofA GLOBAL RESEARCH

Since then, authorities announced a string of policy measures, including monetary easing as well as regulation adjustment with the goal of stabilizing property prices and eventually consumption. Authorities seem concerned about moral hazard issues. At the end, the recipe to stabilize property prices looks similar to the one that created the imbalances in the first place (see Exhibit 4 and Exhibit 5).

A more aggressive plan is needed to stabilize expectations

China is facing a significant challenge in public confidence, which can be seen in both consumer and business metrics, coupled with an aging population and record high youth unemployment. The imbalances in the property market need to be addressed and people's worries about a further correction in real estate prices keep them accumulating precautionary savings.

The authorities need to come up with a more aggressive plan that combines stimulus and stabilizes real estate prices and addresses the LGFV (local government financing vehicle) issue to restore confidence. However, the growth model based on investment in real estate is done, and China needs to find a new model that can be sustained over time. For that, the much-needed investment in infrastructure can replace the low marginal productivity real estate model. This needs to be complemented with reforms to ease factor mobility and a retirement age reform.

We believe China can avoid Japanification if policymakers roll out effective measures resolutely to boost confidence and reverse the growth downtrend. Over the medium to long term, China will need to adopt a multipronged approach and transit to a new growth model. A protracted delay in policy actions could risk knocking the country off its potential growth path. Falling into long-term stagnation at China's current income level would be an even drearier scenario than what Japan experienced (see Can China avoid Japanification?).

Rest of the world also shows uneven growth dynamics

The growth story in Europe is one of very sluggish recovery, although the main drivers change depending on the countries. Different from the US, the Euro Area and UK were hit more heavily by the energy shock.

For the Euro Area, we just downgraded our growth forecasts. We remain below consensus as we think it underestimates the long-lasting effects from the COVID and energy shocks. We now expect 0.5% for 2023 and 2024 (-10bp and -20bp, respectively).



Exhibit 6: Consumption has not fully recovered yet

BoJ consumption activity index (2019 average=100, real, SA, 3mma)

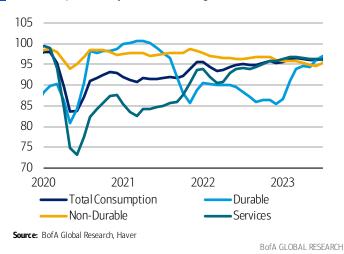
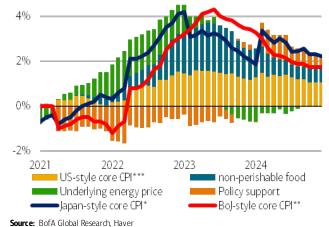


Exhibit 7: We expect BoJ-style core above 3% through CY23

Factors driving changes in Japan-style core inflation



RofA GLOBAL RESEARCH

Despite the Euro Area exporting increasingly more to the US than to China, the slowdown in Asia is affecting Germany's industrial production and putting downward pressure on growth dynamics. As stated above, consumer confidence remains somewhat depressed, which is consistent with the accumulation of excess savings due to precautionary motives, in sharp contrast with the depletion of savings observed in the US.

The UK is a special case, where the combination of several supply shocks (energy, supply chains, workforce sickness) and the aftermath of Brexit are still playing a role. Inflation has become entrenched, and we expect the stagflationary story to remain in place for longer. For UK, we raised slightly our 2023 growth forecast to 0.6% on the back of a stronger than expected 2Q23 print and stronger path for real wages. However, we expect a deceleration to 0.3% into 2024 on the back of tight monetary policy.

Japan is another interesting decoupling story (see Exhibit 6 and Exhibit 7). For the first time in many years, deflationary expectations are gone, and nominal variables are behaving more normally. The economy surprised also to the upside and inflation expectations are somewhat anchored at positive levels such that the BoJ (Bank of Japan) is inclined to continue normalizing monetary policy. We now expect it to start earlier and we brought forward our new baseline forecast for NIRP (negative interest rate policy) + YCC (yield curve control) removal to the January '24 MPM (see Could the BoJ end NIRP in 2023?).

Geopolitics will likely play in Japan's favor too. The weak yen restored competitiveness, as seen by the record exports of 2Q23. The challenge is still the recovery in real wages and eventually consumption to more sustainable levels.

Usually, global growth driven by the US instead of China is not great news for EM. However, LatAm countries outperformed expectations in 1H23, in particular Mexico and Brazil. Mexico is a clear beneficiary of the US resilience and the nearshoring inflows. Brazil is more a positive terms of trade shock for the agricultural sector. We have seen some growth surprises also in EEMEA, such is the case of Türkiye, which is moving towards some policy normalization. For Asia ex-China, which naturally depends too much on China, we expect the underperformance to continue.

With inflation moving lower central banks are turning

Inflation dynamics are more similar than growth dynamics across countries (Exhibit 8), with the obvious exceptions of China and Japan, where inflation surprised to the downside and to the upside, respectively.



Most of the disinflation observed across countries was driven by goods and started with the stabilization in energy prices. Service inflation is gradually moving lower, but proved to be much stickier, ranging between 4% and 6%. Dynamics don't differ much if we focus on headline or core inflation. The focus on stripping out measures of inflation to exclude "uncomfortably volatile items" seems to be overdone. After all, what matters is to contain inflation expectations, which very much depend on what people expect headline inflation to be.

We expect inflation to be somewhat more persistent in Europe and EM than in the US. For the Euro Area, this statement is true only for the very short run. Disinflation in core measures is catching up fast with the US and we expect inflation in the Euro Area to move below the US in 1Q24. For the UK and some EM countries, inflation will remain more persistent EM and UK.

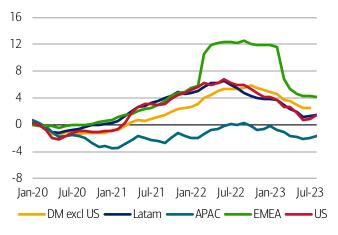
We recently changed our inflation forecast for the Euro Area. We now expect the headline rate at 5.7% and 2.7% in 2023 and 2024, respectively (+20bp each) on the back of a rise in oil prices, partly compensated by a decrease in food prices. We kept core inflation forecasts unchanged. We are roughly at consensus for 2023 and 2024 but differ for 2025, where we think inflation (both core and headline) will land below the 2% inflation target.

Although both cycles are intrinsically different, interestingly our calls for the ECB (European Central Bank) and the Fed do not differ much regarding the beginning of the easing cycle, though they differ on the terminal rate. We expect the ECB to remain on hold until June and to start cutting rates very gradually. We expect the Fed to hike in November and then start cutting in June at a pace of 25bp per quarter. In both cases, the risk is for an additional hike and high for longer.

For the UK, after the surprise hold, we expect the BoE (Bank of England) to stick at 5.25% through 2024, before 4 cuts of 25bp in 2025. Fewer hikes now substitute for fewer cuts later. While Swiss National Bank (SNB) paused this week, both Riksbank and Norges hiked 25bp. We think SNB and Riksbank are likely done, and we expect Norges to deliver a final hike in December. In addition, Norges will likely cut less aggressively than Riksbank next year, as Norway presents a more resilient economic outlook.

Central banks in EM started the hiking cycle almost a year before the Fed and the ECB and now they are leading the way in the easing cycle (see Exhibit 9). Interestingly, EM central banks didn't have the credibility to just assume the inflation shock was transitory

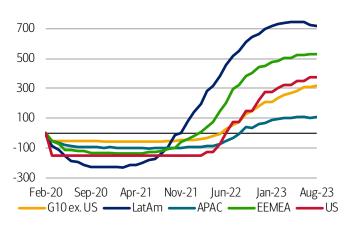
Exhibit 8: Inflation spiked across the globeCumulative inflation since 2020, regional average (%)



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 9: LatAm has hiked more than any other region Cumulative hikes since January 2020, regional average (bp)



Source: BofA Global Research, Bloomberg



and hope inflation expectations would remain well-behaved. This was the approach of the Fed and the ECB, which led them to delay the hiking cycle unnecessarily.

With Brazil and Chile leading the way, we now also have more countries about to start the easing cycle. The case of Poland is somewhat different as economic theory cannot be used to justify cutting rates with 10% inflation. However, in general, markets are probably pricing still very aggressive easing cycles in EM relative to the US. It is not easy for EM central banks to cut rates aggressively when the US is still hiking rates and the market is repricing into higher neutral rates for the US.

Risks to inflation somewhat contained but not zero

With oil prices making new highs and approaching \$100bbl driven by tighter supply-side conditions (see Exhibit 10), we think inflation risks are to the upside, which coupled with volatile food prices driven by El Nino, could spoil disinflationary dynamics, in particular in EM countries and Europe, where energy and/or food has a higher incidence in consumption baskets and/or production costs. As we discuss in the US section, an acceleration of nominal wages is still a risk for the US with a labor market that remains somewhat tight and that will not enjoy the bonus at the margin of the increase in labor force participation.

Against these upside risks, some analysts argue that China is now starting to export deflation to the rest of the world. At most, what China can do is export goods deflation, but not overall inflation since that is determined by the monetary policy implemented by each country. As long as central banks have independent monetary policy, they can set medium-term inflation at any level they target. Therefore, the goods deflation exported by China will translate into overall deflation or lower inflation for other countries only if central banks accommodate to that shock. If instead central banks do not accommodate to lower import prices, they will set monetary policy to generate an offsetting increase in the price of non-tradables. At the maximum, this "export of goods deflation" can affect the relative price of goods vs services. In other words, saying that China is exporting goods deflation is as true as saying that China is exporting services inflation.

Some analysts argue that, given the transitory nature of the shocks that drove the increase in inflation, coupled with the fact that long-term inflation expectations remained anchored, central banks in developed economies could have spared hiking interest rates. The argument goes that central banks like the Fed and the ECB overhiked. In a nutshell, causality was reversed. However, inflation expectations are endogenous variables that react to the way monetary policy is being conducted. It is

Exhibit 10: Commodity prices are off their peaks, but oil prices have been rising Oil, copper, and grains prices (USD)





because central banks hiked interest rates that long-term inflation expectations remain anchored. It is debatable if the Fed or the ECB over-hiked, but the stability of long-term inflation expectations is not a sufficient statistic to conclude that that was the case.

Why is the US economy so resilient?

The resilience of the US economy can be explained by essentially two factors: a faster-than-expected recovery in business investment and strong private consumption, fueled by a solid household balance and a tight labor market. Households and corporates refinanced mortgages and debt when rates were low. Real estate prices are high due to lock-in effects. Fiscal impulse was stronger than expected although its impact gets somewhat comingled in the investment and consumption dynamics.

Risks are mostly related to high-for-longer policies and excessively loose fiscal policy pressuring on real interest rates, with the consequent effect on household and corporate balance sheets, investment, and private consumption.

Nothing can stop this investment feeling

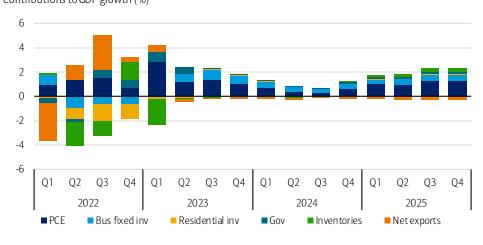
Starting with investment, we are clearly seeing the impact of reshoring activity in the manufacturing sector, where non-residential investment keeps surprising to the upside, as the 2Q GDP numbers confirmed (see Exhibit 11). Despite accounting for less than one-fifth of total non-residential structures investment, growth in manufacturing structures investment has accounted for most of the growth in structures investment over the last three quarters. Two key pieces of legislation are helping to boost investment: the CHIPS and Science Act and the Inflation Reduction Act (IRA). As the tailwinds of CHIPS moderates, projects related to IRA should pick up the slack.

Meanwhile, the Infrastructure, Investment and Jobs act (IIJA) has contributed to a surge in government Investment this year. The bill will continue to provide support throughout our forecast horizon, though at a diminishing growth rate. There have also been recent changes to fiscal policy that we consider to be contractionary, including the end of student loan forbearance, expiration of the expanded Child Tax Credit in January, and the end of the pandemic increase to SNAP benefits in March. At the margin, these are negatives for consumer spending. However, we think the balance of fiscal policy remains favorable for growth in the near-term.

Healthy consumer fundamentals

Consumption remains solid, although we see some gradual deceleration consistent with our soft-landing call. Several elements explain the strong consumption patterns.

Exhibit 11: Interest rate sensitive sectors may have bottomed Contributions to GDP growth (%)

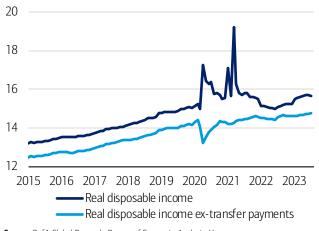


Source: BofA Global Research, Bureau of Economic Analysis, Haver



Exhibit 12: Consumers are seeing real income growth

Real household income (USD tn, 2012 chained)

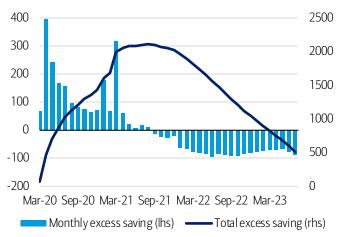


Source: BofA Global Research, Bureau of Economic Analysis, Haver

BofA GLOBAL RESEARCH

Exhibit 13: Excess savings are shrinking, but remain

Total stock and flow of excess savings (USD bn)



Source: BofA Global Research, Bureau of Economic Analysis, Haver

BofA GLOBAL RESEARCH

Mind the flows: strong real disposable income and excess savings

Real disposable income growth remains positive on the back of a strong labor market and a recovery in real wages, despite some natural slowdown that we expect to continue in the coming quarters (see Exhibit 12).

Mind the stocks: strong balance sheet for households

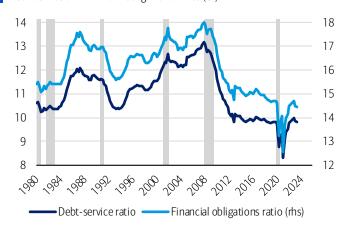
In addition, household balance sheets are much stronger than pre-pandemic (see Exhibit 14 and Exhibit 15). Households' net worth is at least 30% higher than pre-pandemic. Easy monetary policy triggered a massive rally in financial assets. Fiscal transfers translated into excess savings for the private sector that are still a relevant source of consumption finance. Even though it is difficult to estimate excess savings since it depends on assumptions about savings rates in the new steady state, we think about 20% of excess savings remain unused. This is conservative as we are assuming no changes in pre- and post-pandemic savings rates (Exhibit 13).

Mind the mortgage market: refinancing and lock-in effects

Last but not least, the structure of the mortgage market in the US played a crucial role in shielding household balance sheets. In a recent report (see <u>ls refinancing the kryptonite of monetary policy?</u>), we studied how the structure of the mortgage market –

Exhibit 14: Household finances remain solid

Debt service and financial obligations ratios (%)

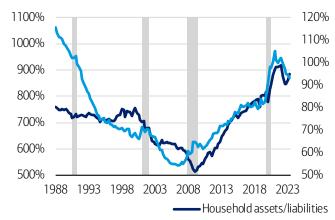


Source: BofA Global Research, Federal Reserve Board, Haver

BofA GLOBAL RESEARCH

Exhibit 15: Balance sheets remain stronger than pre-pandemic

Household total assets and liquid assets to liabilities ratios (%)



Source: BofA Global Research, Federal Reserve Board, Haver



in particular the proportion of ARMs (adjustable-rate mortgages) vs FRMs (fixed-rate mortgages) – affects monetary policy and consumption across countries (see Exhibit 16 and Exhibit 17).

The US mortgage market is the deepest in the world, with 85% of mortgages fixed-rate and maturities up to 30 years. Following a period of very low interest rates, households refinanced to lock-in low coupons and switched into FRM, which helped boost consumption. In addition, since mortgages are not portable in the US, refinancing coupled with rising demand for housing, driven by urban migration, explains the tight housing market and resilient prices. Both effects translated into stronger household balance sheets.

Notice that a corollary of the effects described above is that monetary policy is less effective in an economy where the mortgage market is dominated by FRM non-portable mortgages. We can see a sharp contrast with countries such as Australia, Sweden, and the UK, where the proportion of ARMs (adjustable-rate mortgages) is larger and higher interest rates affects the cash flow of households more swiftly.

Households, corporates, banks and the govt: the goods, the bad and the ugly

Households are hedged against interest rate risks to a great extent, while large corporates are able to refinance debt and manage rollover risk. Small and medium companies are more exposed since they have fewer instruments, while commercial real estate developers are too, due to structural slowdown in CRE (commercial real estate) demand post pandemic.

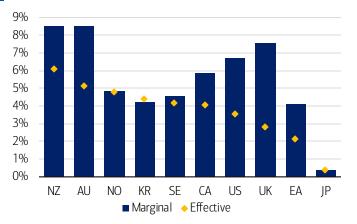
If households and corporate balance sheets are strong, where is the weakest link? Banks are certainly exposed to interest rate risk and do not benefit from the current dynamics of the term structure of interest rates, which increases funding costs and extorts losses on the duration exposure.

But the ugly balance sheet is in the hands of the public sector. The massive increase in public debt and the resilient fiscal deficit is pressuring real interest rates and crowding out private investment. As we elaborate later when we discuss the limits of fiscal policy, the current level of interest rates on debt dynamics is not sustainable, unless significant fiscal consolidation is implemented down the road.

Fiscal policy also played a role

Fiscal policy played a relevant role in explaining the outperformance of the US economy in 1H23 and was one of the factors behind the last upgrade in our growth forecast. In

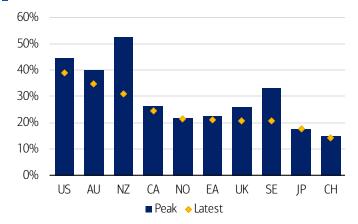




Source: BofA Global Research, Haver, National statistical agencies and central banks

BofA GLOBAL RESEARCH

Exhibit 17: House prices remain resilient despite rate hikes Home price growth, 2019-peak vs 2019-latest (%)



Source: BofA Global Research, Haver



addition to diminution of brinkmanship risks, recent fiscal policies continue to exceed our expectations in its effectiveness. The US headline fiscal deficit, adjusted for the effect of student loans, is projected to roughly double from last year and reach at least 7.5% of GDP this year, where 2.5pp correspond to interest service (which represent 15% of the total federal revenues) and 5pp correspond to primary deficit.

However, what matters for growth dynamics is not the primary deficit but the change in the adjusted primary deficit or the fiscal impulse. The primary deficit adjusted for the effect of student loans increased by 3pp vs 2022. However, not all of that is considered a fiscal impulse. Once adjusted by the effect of social security demographics, Fed remittances and lower revenues from capital gains, the estimated fiscal impulse is close to 1pp, which assuming a conservative multiplier, implies 0.5pp of additional average growth for 2023.

It is worth to mention that part of that fiscal impulse does not show up in the aggregate spending decomposition as government spending, but it gets commingled with private consumption and non-residential investment figures. As we elaborated when we discussed private investment dynamics, the different pieces of legislation granting subsidies and tax credits to stimulate investment in the manufacturing sector are part of the fiscal impulse that is "hidden in the data".

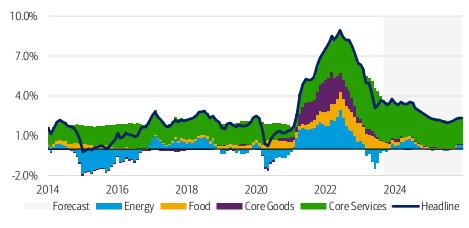
What can go wrong?

As discussed, we now expect a soft landing, with the economy growing a few quarters below potential, but avoiding a technical recession with high probability. We expect the labor market to gradually slow with payrolls averaging 60k in 2024 (see Exhibit 19 and Exhibit 20) and the unemployment rate moving gradually to 4.3%. We expect inflation to continue getting close to the 2% target (Exhibit 18) in 2025 and the Fed to hike 25bp in November, and then start the cutting cycle in June 2024 at a pace of 25bp per quarter.

Despite the labor market softening gradually, it remains pretty tight and nominal wage growth stabilized but at relatively high levels. The increase in labor force participation (LFP) post pandemic explains why nominal wages didn't grow faster, but LFP is unlikely to keep increasing from here. If consumption and investment remain strong in the coming quarters, wage dynamics could become non-linear and put pressure on profit margins and prices.

Risks associated with a sharper slowdown are relevant. With corporates and households temporarily insulated against higher interest rates, the main risk is a combination of a tightening of financial conditions due to excessively loose fiscal policy that puts

Exhibit 18: We expect core inflation to slowly grind lower Contributions to headline CPI (%)

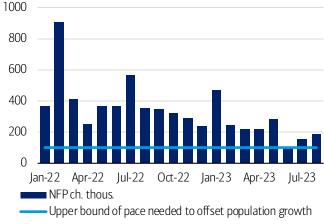


Source: BofA Global Research, BLS, Haver



Exhibit 19: NFP still more than offset population growth

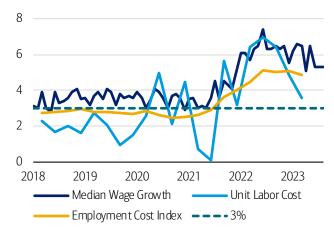
Non-farm payroll changes (thousands)



Source: BofA Global Research, Census Bureau, Bureau of Labor Statistics, Haver

BofA GLOBAL RESEARCH

Exhibit 20: Labor cost growth moderated but remains high Measures of labor cost growth (% yoy)



Source: BofA Global Research, Census Bureau, Bureau of Labor Statistics, Haver

BofA GLOBAL RESEARCH

pressure on real interest rates and a Fed that needs to keep interest rates high for longer, impacting consumption and investment.

Longer than expected lags in the transmission of monetary policy can easily trigger a recession that could take longer to materialize but could be deeper than expected. Corporates and households will need to start rolling over debt at higher interest rates and banks start migrating from facing interest rate risk to experiencing credit risk.

In addition, the auto strike and the government shutdown represent some temporary risks to our growth forecast.

What is so different about Europe?

The post-pandemic recovery in Europe has been far from stellar, especially when compared to the US. As we elaborate below, the type of shocks that impacted both economies and the different policy responses explain the divergence in performance.

Economic activity in the Euro Area and the UK underperformed the US and inflation proved to be persistent. We expect US outperformance to continue. We forecast 2.1% and 1.1% growth in the US for 2023 and 2024, and 0.5% for this year and next year in the Euro Area, while for the UK we forecast at 0.6% and 0.3% for 2023 and 2024.

Consumer and business confidence remains at depressed levels, closer to the levels observed for China than for the US. The different dynamics of consumer confidence are correlated with the dynamics of excess savings, as discussed below. Very little use of them in Europe in sharp contrast with the US.

To understand the difference between the US and Europe, we need to start with the nature of the shocks that hit both economies as well as their responses in terms of fiscal and monetary policy. The energy shock impacted more heavily in Europe than in the US and it shaped the way fiscal support was implemented.

As discussed before, the monetary and fiscal stimulus, coupled with the structure of the mortgage market and the depth of the corporate market, strengthen the balance sheet of the private sector much more in the US than in the Euro Area, which helps explain the more robust consumption dynamic of the US.

We can see the effect in the evolution of disposable income and consumption, which fell less in the US than in Europe and recovered earlier and stronger, first driven by an increase in the consumption of goods and then gradually migrating towards services (see Exhibit 21). In real terms, overall consumption in the US is 10% higher than prepandemic while close to flat for Euro Area. The comparison for goods consumption is



Exhibit 21: Consumption in Europe lags the US recovery

Real consumption (4Q2019=100)

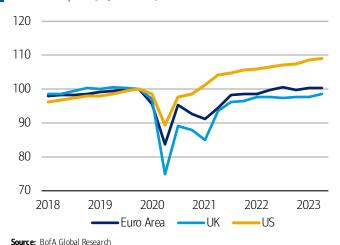
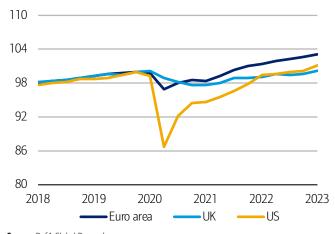


Exhibit 22: Employment adjusted through intensive margin

Employment level (4Q2019=100)



Source: BofA Global Research

BofA GLOBAL RESEARCH

even more striking: 20% higher than pre-pandemic levels in the US and just 5% higher in France, which was one of the most effective countries at supporting households during the pandemic and the energy shock.

BofA GLOBAL RESEARCH

In addition to the speed of the cyclical recovery, there is a more structural growth problem for Europe as whole, which can be traced back to the low rate of growth of total factor productivity (TFP). Even though the collapse in TFP is broad-based across countries, it has been more pronounced for Europe than the US.

A tale of two shocks

Both the US and Europe were hit hard by the pandemic, but Europe was also impacted more deeply by the energy shock associated with the Russia-Ukraine conflict as its economy, as a net importer of energy, is more sensitive to this kind of terms of trade shock. The energy shock and the uncertainty associated with it had a much bigger impact on both consumption and manufacturing output than in the US.

Moreover, the temporary energy shock displayed some hysteresis, that is, it had a more permanent effect than the pandemic as it changed the productive capacity of the economy. That alone is a big differentiating factor as it affected Europe disproportionally and influenced the way fiscal support was executed to avoid a massive hit on households' purchasing power.

Different from the US, where the market moved to reprice into a higher r* on the back of stronger economic activity, implying higher potential output than previously thought. Even though the higher r* in the US can easily be driven by a reassessment of the fiscal policy outlook, it can be argued that the energy shock decreased the potential output of the Euro Area, implying a widening of the natural real interest rates spread between the US and Europe.

The composition of fiscal support conditioned the speed of recovery

The second element that explains the difference in the relative speed and strength of the recovery is not only the size of the fiscal support but also the way it was instrumented. In the US, it was done through direct fiscal transfers to lower-income tiers, independently of their employment status.

In Europe, fiscal support was implemented via job retention schemes (JRS), a set of instruments aimed at preserving jobs at firms that experienced temporary shocks to business activity, therefore reducing the friction costs of firing and hiring, and inducing labor hoarding in terms of headcount but adjusting working hours to the current level of



demand, while supporting the income of workers at close to pre-shock levels. The JRS were basically subsidies to workers jointly financed by the government and firms.

Comparing the size of the fiscal support between the US and Euro Area is a very complicated exercise. According to the European Commission¹ at face value, both the US and Europe put together a roughly similar size of fiscal support as a % of GDP, not all the support available was effectively used in Europe. The European approach was minimalist – to put a floor on aggregate income. The US one was rather maximalist – to speed up the post-reopening recovery. The best way to see the different impacts of both schemes is by observing the time series of disposable income for both Europe and the US (see Exhibit 22). The US fiscal strategy was more effective in boosting consumption at the reopening compared to the European strategy, where disposable income remains relatively depressed, unable to sustain a consumption boom.

The way consumers reacted to the shocks can also be seen in the way excess savings behaved in the US vs Europe. In the US, according to most estimates, consumers depleted approximately 80% of excess savings to finance consumption. In Europe, this was probably less than 10% clearly driven by precautionary motives.

This behavior of excess savings is consistent with the dynamics of consumer and business confidence. Households and corporates have been relatively more optimistic about the outlook in the US than in Europe, where households didn't smooth out consumption by depleting savings as they considered the shock more permanent due to the energy component than in the US. It is worth to note also that the distribution of those savings in the Euro Area are more concentrated in the upper parts of the income distribution.

Employment adjusted through the intensive margin in Europe

Related to that, the labor markets in the US and Europe adjusted differently to the shocks. In the US, the adjustment came via a sharp jump in unemployment and a drop in labor force participation (LFP), while in Europe, it took place via a drop in worked hours rather than headcount, in line with the JRS schemes described above.

In the recovery, unemployment fell more rapidly in the US, with employment growing to record levels, in part explained by an increase in LFP, in particular for young cohorts as well as women that returned to the labor force for part-time work.

This adjustment probably impacted the way the two economies recovered. In the US, a more flexible labor market allowed a faster reallocation of resources, in particular labor, from manufacturing into services as the economy reopened. In Europe, instead, relative wages widened in favor of the services sector, as the economy reopened to provide the market signal to reallocate labor due to the less flexible labor structure.

A few other factors: investment, China, and the private sector balance sheet

Beyond the difference in consumption dynamics, a few other factors explain the underperformance of Europe relative to the US.

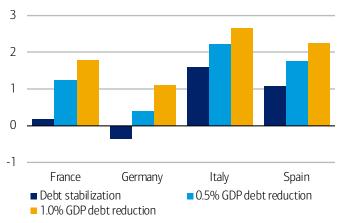
As already discussed, due to a combination of reshoring activity and the incentives provided by the CHIPS and IRA Act, the US is going through a real investment boom. The outperformance of 1H23 is largely explained by strong non-residential investment, with 2Q23 growing at 7% qoq saar. In contrast, in the Euro Area, investment is growing at an anemic average rate of 0.5% qoq saar. Related to that, relative fiscal policy is more expansionary in the US than in the Euro Area, where debt rules in fact prescribes a big fiscal tightening (see Exhibit 23).

¹ Licchetta, Mirko, Giovanni Mattozzi, Rafal Raciborski, and Rupert Willis. *Economic adjustment in the Euro area & the United States during the COVID-19 Crisis*. Publications Office of the European Union, 2022.



Exhibit 23: Debt rule prescribes big fiscal tightening

Prescribed adjustments in primary balance vs 2022 (% of GDP)

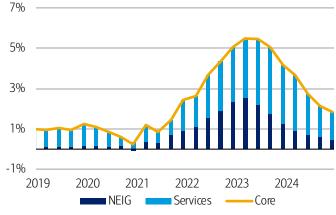


Source: BofA Global Research, Bruegel data, European Commission, Government of France, IMF **Note:** Debt stabilization/0.5%/1.0% GDP debt reduction are computed as the primary balances consistent with a yearly decline in the debt ratio by at least 0.0%/0.5%/1.0% GDP between 2029 and 2060 for countries with a debt ratio above 60% in 2029.

BofA GLOBAL RESEARCH

Exhibit 24: We expect EA Core inflation at 2% by end-2024

Euro Area core inflation, observed and BofA forecasts (%)



Source: BofA Global Research, ECB

BofA GLOBAL RESEARCH

An additional element is the exposure of the Euro Area to China relative to the US. Even though the Euro Area exports more to the West than to China, it depends more on China exports than the US. Admittedly, the underperformance of Europe is mostly explained by domestic reasons, but going forward a slowdown in China will be, *ceteris paribus*, more detrimental to Euro Area in relative terms.

Inflation is more persistent in Europe, but financial conditions are tighter

Inflation is moving in the right direction across most countries and the Euro Area is not the exception. The inflation outlook is less favorable for the UK, but even in that case the BoE opted to pause.

When compared to the US, Euro Area inflation proved to be more persistent, once again due to the nature of the shocks that hit the economy. Even though there is considerable debate on the relative size of supply shocks and demand stimulus to explain inflation dynamics across countries, a comparison of headline and core inflation shows higher cumulative inflation in the US than in Europe. However, the size of the energy shock that came a few months after the reopening was much higher in Europe than in the US, which explains the persistence of core inflation as the shock gets transmitted into the economy.

We expect the Euro Area to catch up with the disinflation experienced in the US. However, inflation spikes should not be ruled out in both the US and Europe, given the volatility of oil and food prices (see Exhibit 24).

In terms of relative monetary policy, we don't expect the Fed or the ECB to cut until 2H24. Nevertheless, given the relative resilience of the US economy and the downside risks more biased towards Euro Area, the ECB could end up cutting rates at a faster pace. In the UK, where inflation is even more persistent, we don't expect any cuts until well into 2025.

Can we see geopolitics in the data?

The short answer is yes, indeed. Let's elaborate. Geopolitical tensions are already affecting trade and financial flows as well as asset prices. Protectionism is on the rise, and we see it in the increasing number of trade restrictions imposed. Even though a bipolar equilibrium might not materialize, the "peso problem" type of uncertainty associated with this outcome is already shaping investment decisions.



The increasing geopolitical fault lines between two major blocs have major implications for the macro and investment outlook of both developed and emerging economies. The tensions between the blocs could induce many countries to take sides in several areas, which would certainly have first-order economic and asset pricing implications.

The simple fact that geopolitical uncertainty is higher – and, with that, policy uncertainty – is also enough information for companies and investors to accelerate the pace of diversification of cross-border capital allocation. The recent flow of supply chain relocation responds more to risk-management motives than cost advantages.

In such a scenario, countries will be impacted along many dimensions, from trade to foreign investment flows, therefore affecting economic growth and ultimately debt sustainability. The new geopolitical equilibrium will potentially alter the risk of economic crises for some vulnerable countries and the external support if they experience one.

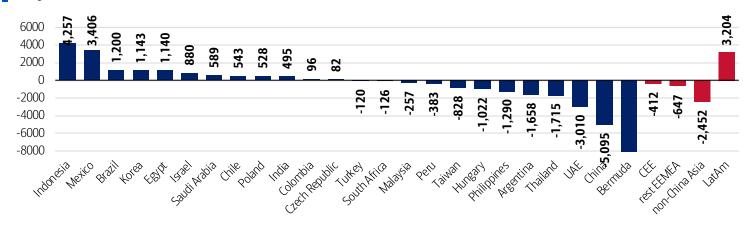
However, many countries do not accept this bipolar construct and have strong incentives to remain neutral and even challenge this bipolar order. Neutrality is easier for bigger EM countries, which have buffers to absorb a major geopolitical shock. For smaller countries, neutrality is a risky proposition, as they might receive less FDI (foreign direct investment) flows from both poles.

We estimate that about one-third of the world economy is not aligned with either China or the US. Mostly these are emerging (and frontier) markets. They depend economically and financially on both sides and want to keep their options open. While China is gaining importance in investment and trade in other EM, we find that, in contrast to widespread perception, in aggregate the "West", defined as NATO plus Mayor Non-NATO Allies, is more important for almost all EMs. An outcome where countries might be forced to choose sides would be a major financial risk for EM.

Geoeconomic fragmentation and de-globalization are clearly negative for trade and growth across the world, as they create dead-weight losses when companies move their operations overseas, based not on cost considerations but on risk-management motives. At the same time, fragmentation implies a relocation of supply chains that can benefit some EM countries more than others.

The relative winners will attract a higher share of global FDI, but whether those countries will end up better off in absolute terms will depend on the elasticity of substitution of investment goods across countries. For a sufficiently high elasticity of substitution, host countries will attract enough FDI to more than counterbalance the

Exhibit 25: Since President Trump was elected, US investment has clearly shifted out of China into ASEAN and LatAm Change in FDI outflows from USA, 2017-2021 (USD millions)



Source: BofA Global Research, Haver

 $\textbf{Note} \hbox{: } 2021 \hbox{ vs } 2017 \hbox{ change in USDmn. Includes reinvestment of retained profits in FDI.}$



drop in external demand associated with lower global growth as a consequence of geoeconomic fragmentation.

Meanwhile, it is becoming clear that US FDI has started diversifying away from China. Since 2017, FDI into China has fallen the most (see Exhibit 25 and Exhibit 28). In contrast, investment into LatAm has picked up a lot, mostly Mexico but also Brazil. Indonesia has also gained significantly, and so have tech-focused markets such as Israel and Korea.

As has been documented extensively, FDI is becoming more responsive to geopolitical factors and EM countries are more vulnerable to FDI relocation than developed economies, as countries trade and invest more with those that are politically aligned (Exhibit 26). Moreover, the greater the geopolitical distance between host and source countries, the greater the vulnerability to friend-shoring, in particular for vertical FDI (horizontal FDI might actually benefit from trade barriers).

China is certainly economically exposed to a more fragmented world. Its strategy and ability to deliver strong economic growth is not only a function of its reforms and how it can disperse its domestic resources efficiently, but also of access to foreign markets and technology transfer that drives productivity critical to growth. This challenge is emphasized by the fact that China's growth composition is heavily reliant on investment (close to 45% of GDP), while household consumption is just under 40% of GDP.

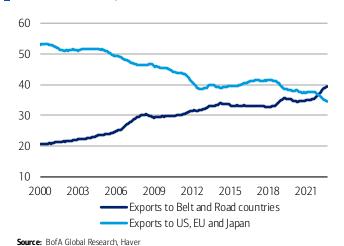
Reshoring is a reality boosted by US Congress

The investment boom in the manufacturing sector is a first-order factor explaining the resilience of the US economy. As recent data show for 1H23, fixed non-residential investment is growing at a very strong pace. Construction spending in the manufacturing sector almost tripled in the last 3 years. We can also see it in employment generation in the manufacturing sector with job openings close to record levels (see Exhibit 27). According to The Reshoring Initiative, 1.6 million jobs were created due to reshoring and FDI since 2010 and nearly 800k of those were created in the last 4 years. About 50% of those jobs come from China and 60% from Asia in general.

Reshoring and the spike in structures investment was certainly boosted by 3 key pieces of legislation: the CHIPS Act focused on the semi-conductor sector; the Inflation Reduction Act (IRA); and the Infrastructure Investment and Jobs Act (IIJA). All of them aimed at spurring investment in the manufacturing sector.

Indeed, data in construction spending shows exponential rises in the computer,





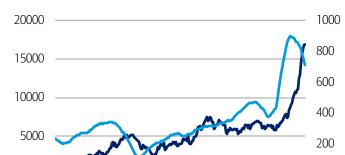
BofA GLOBAL RESEARCH

Exhibit 27: US manufacturing skyrocketed

2003

2006

Source: BofA Global Research, Haver



2009 2012 2015 2018

Construction spending (USD mn) job openings (thousands, 12mma)

US construction spending, manufacturingJob openings, manufacturing (rhs)

BofA GLOBAL RESEARCH

0



electronic, and electrical manufacturing industry. The increase in spending started before the CHIPS act in August 2022, likely due to the ongoing supply shortage of semiconductors. But the increase accelerated after the CHIPS bill became law. According to industry groups, the law has led to more than \$200bn in investments in semiconductor production.

Mexico has a lifetime opportunity

The ongoing US-China trade and tech war has created a lifetime opportunity for Mexico: the relocation of productive resources from Asia to North America, commonly known as nearshoring. The US imposed trade tariffs on China in the first half of 2018 and since then China has lost more than four percentage points of its share of US imports (see Exhibit 28). This is a large market and Mexico stands to gain.

When the Central Bank of Mexico (Banxico) recently surveyed firms in Mexico on the potential for near/reshoring, it ranked the ongoing trade conflict between China and the US as the main (observed) factor behind the arrival of new businesses to Mexico. This is an important push factor for nearshoring. Although some market share was won initially by Taiwan and Vietnam, and some other countries, probably to circumvent tariffs, we are now entering a new phase where we believe movements will be more in response to what is perceived as a structural change in the US-China relationship.

Consequently, the gain in Mexico's share of the US market has accelerated (see Exhibit 28). We may be going through the reversal of the "China shock" in North America.

Structural challenges remain for Mexico to take full advantage of nearshoring. Mexico needs to invest more in infrastructure, energy, education, and the rule of law to reap the full benefits of nearshoring. Mexico will hold presidential elections in 2024, coinciding with those in the US. The new president will take office in October 2024. A new administration could embrace nearshoring more fully and invest more in the process. For now, firms are increasing investment in machinery exponentially but more on the government side is probably needed (see Exhibit 29).

Mexico and China compete for the US market, and the USMCA puts Mexico clearly on one side of the current geopolitical changes. Mexico imports inputs and intermediate goods from China as part of the production process to deliver to the US, but it exports very little to China and that is unlikely to change anytime soon, in our view. The current administration has tried to maintain relations with China, but for Mexico most of the flows in the balance of payment will continue to be massively centered on the US. More

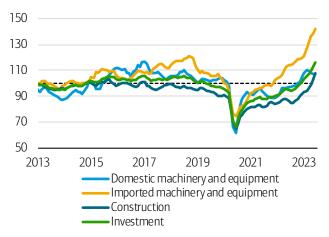
Exhibit 28: China's loss has been Mexico's gain in US imports Share in US total imports, 12mma (%)



Source: BofA Global Research, Haver, US Census Bureau

BofA GLOBAL RESEARCH

Exhibit 29: Investment in machinery evidences nearshoring Investment by categories (SA, 3mma, Jan-2018=100)



Source: BofA Global Research, INEGI



than 80% of Mexican exports go to the US; the vast majority of FDI into Mexico is from the US; and the largest flow on the current account is now remittances, mostly from the US.

A wave of presidential elections in a highly polarized world

In the next 15 months, the world will experience presidential, midterm and parliamentary elections in a total of 36 countries that represent 63% of world GDP and 65% of the market cap of worldwide stock markets (see Exhibit 32 and Exhibit 32). Among the most impactful for the global geopolitical equilibrium are presidential elections in the US, India, Mexico, Russia and Taiwan, and parliamentary elections in the European Union (Exhibit 30).

Presidential elections are always a source of volatility, but the uncertainty associated with presidential elections has been in crescendo in the last decade. The reason is pretty clear: political polarization and populism are on the rise. The increase in income inequality and social demands for more protectionism, as well as the perceived inability of traditional centered politicians (either center-left or center right) to change the reality of people have induced a shift to the extremes in the political spectrum.

Centered politicians lost credibility and the median voter theorem is losing relevance. Instead of politicians moving to the center to gain the median voter, they move to the extremes to offer an attractive narrative that resonates with voters. Now voters are choosing to what extreme to move, displaying a bi-modal distribution of voting preferences.

This structural change has radical implications for the global geopolitical equilibrium. It also has first-order implications for the limits of fiscal policy and the incentives (or lack of) for fiscal consolidation.

A recent study by Baker et. al.² shows that economic uncertainty (see Exhibit 33) rises

Exhibit 30: A wave of elections in a highly polarized worldUpcoming elections across the world

Date	Country	Date	Country
1-Sep-23	Singapore	24-May	India
14-Oct-23	New Zealand	24-May	South Africa
15-Oct-23	Ecuador	5-May	Panama
15-Oct-23	Poland	19-May-24	DomRep
22-Oct-23	Switzerland	2-Jun	Mexico
22-Oct-23	Argentina	6/9 June-24	European Union
29-Oct-23	Colombia*	9-Jun	Belgium
19-Nov-23	Argentina	26-Jun-24	Indonesia
22-Nov-23	Netherlands	Autumn-24	Austria
10-Dec-23	Egypt	24-Oct	Tunisia
20-Dec-23	Chile**	6-Oct	Brazil*
13-Jan-24	Taiwan	27-Oct-24	Brazil*
4-Feb-24	El Salvador	27-Oct	Uruguay
14-Feb-24	Indonesia	27-Oct-24	Chile*
25-Feb-24	Senegal	5-Nov	USA
17-Mar-24	Russia	24-Dec	Ghana
31-Mar-24	Türkiye*	2024	Venezuela
Mar-24	Ukraine	No later than Jan 2025	UK
10-Apr-24	South Korea		

Source: BofA Global Research

 $\textbf{Note} : \ ^* \text{ indicates regional elections, } \ ^{**} \text{ indicates constitutional } \ \text{referendum}.$

BofA GLOBAL RESEARCH

_



² Baker, Scott R., Aniket Baksy, Nicholas Bloom, Steven J. Davis, and Jonathan A. Rodden. *Elections*, political polarization, and economic uncertainty. No. w27961. National Bureau of Economic Research, 2020.

Exhibit 31: Countries with elections reach 63% of world GDP... Cumulative share of world GDP (%)

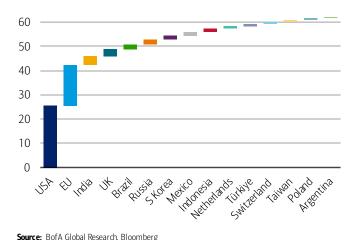
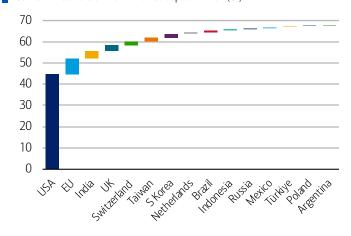


Exhibit 32: ... and 65% of world market cap Cumulative share of world market capitalization (%)



Source: BofA Global Research, Bloomberg

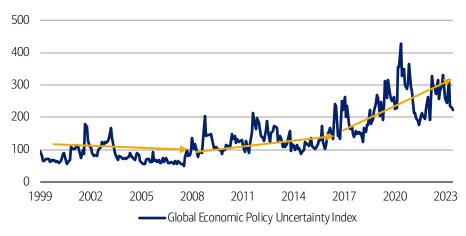
BofA GLOBAL RESEARCH

significantly in the months leading up to presidential elections and the increase is much higher for polarized elections and for countries with histories of polarized elections. This uncertainty is reflected in the volatility of asset prices as well as a slowdown in investment, as the option value of waiting to decide whether or not to invest based on the outcome of the election is higher.

BofA GLOBAL RESEARCH

Even though the political regime change started much earlier, since the Brexit referendum in 2016, we have plenty of evidence at a global level of the increase in polarization and populism as well as the impact on asset prices and investment decisions. The most recent example is Latin America, where in most countries we experienced a pink wave. However, the outcome of the recent elections in Chile, Colombia, Brazil, and Peru should not necessarily be interpreted as a change in voters' preferences, but rather a punishment vote to the incumbents that were running the country during the pandemic and the aftermath. Since centered politicians are no longer a valid option, the pendulum moved from extreme right to extreme left. Upcoming elections in Argentina could be a timely confirmation of this theory, where the radical right-wing candidate is leading the polls for presidential elections after 4 years of radical left-wing policies.

Exhibit 33: Increasing global policy uncertaintyGlobal Economic Policy Uncertainty Index



Source: BofA Global Research, Bloomberg



What are the limits of fiscal policy?

Fiscal policy has been key to helping the world economy recover swiftly from the pandemic. However, fiscal dynamics continue to worsen across most countries, even in cyclically adjusted terms. If we compare current fiscal deficits and debt levels as a % of GDP with the same figures in 2007 before the global financial crisis, we can see a massive cross-sectional deterioration (see Exhibit 35 and Exhibit 34). Fiscal policy is losing power to fight the next recession while at the same time exerting pressure towards higher real interest rates and crowding out private investment.

In a world of extremely low interest rates, governments faced no trade-offs, so they could get away with increasing debt-financed spending in bad times without the need to implement fiscal consolidation in good times.

This low interest rates regime led many economists to recommend continually increasing levels of debt as a socially efficient solution to lead with "insufficient demand in a liquidity trap environment" – also referred to as secular stagnation. The argument was based on the debt sustainability condition popularly known as (r-g), which states that if the real rate of interest (r) is lower than the rate of growth (g) of the economy, any increase in debt is sustainable,

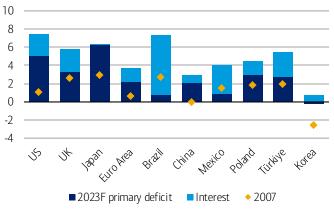
Central banks were partners in this strategy through different types of quantitative easing policy, effectively becoming buyers of last resort of different kinds of public and private debt that markets were not able to absorb without validating significantly higher interest rates or outright waves of default that would exacerbate the depth of the different crises. Central banks, in the end, monetized sizable fiscal deficits through financial repression by warehousing risk and altering equilibrium market risk premia.

A new regime?

Everything indicates we are entering a new regime. Deflation concerns were replaced by inflation, driven to a large extent by excessive monetary and fiscal stimulus, and central banks were forced to tighten monetary policy to bring inflation back to reasonable levels and avoid inflation expectations to de-anchor. In this new regime of higher real interest rates, expansionary fiscal policy in bad times is not a free option anymore, which requires proper fiscal consolidation in good times. In other words, (r-g) moved from negative to positive and the optimal policy prescriptions changed accordingly.

Avoiding fiscal consolidation when the economy is booming and rolling over debt at increasingly higher real rates is the first step towards fiscal dominance. We have seen it

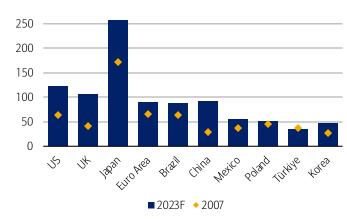
Exhibit 34: Government deficits are much larger than pre-GFC... Government deficits (% of GDP)



Source: BofA Global Research, IMF WEO, Haver

BofA GLOBAL RESEARCH

Exhibit 35: ... and government debt jumped accordingly Debt-to-GDP ratios (%)



Source: BofA Global Research, IMF WEO, Haver



in emerging economies uncountable times and many developed economies are increasingly similar to emerging economies in the type of problems they face.

The increasing levels of income inequality, as well as political polarization and the rise of populism across the whole political spectrum make the reduction of government spending extremely difficult, leaving higher taxes as the only way to equilibrate the budget with natural consequences over potential output.

Fiscal policy in the US as an example of Congress paralysis

The US headline fiscal deficit, adjusted for the effect of student loans, is projected to roughly double from last year and reach at least 7.5% of GDP this year, where 2.5pp correspond to interest service, which represent 15% of the total federal revenues. At current real interest rates, the interest service is projected to reach 25% of federal revenues in a few years.

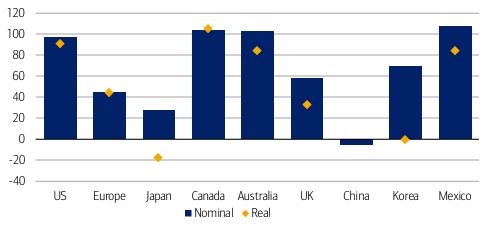
The current fiscal deficit is not necessarily representative of a significant fiscal impulse since idiosyncratic factors such as lower capital gains taxes and Fed remittances are responsible for a large decline in revenue. Still, the deficit is too high for this stage of the cycle. In other words, the US economy doesn't need the current level of primary deficit. Rather, the current environment is more consistent with implementing fiscal consolidation, in line with standard counter-cyclical fiscal policy.

Fiscal policy is arguably too loose in many countries for the current stage of their respective cycles, which coupled with tighter monetary policy helps explain higher real interest rates globally, from the US to Japan.

However, the combination of loose fiscal policy and tight monetary policy in the US relative to other countries is not surprisingly reflecting in higher real interest rates and a real appreciation of the dollar coupled with higher global imbalances (see Exhibit 36). Given the upcoming presidential elections and a divided Congress, it is very unlikely to observe any improvement in the primary deficit and more likely a deterioration in the headline deficit due to higher interest services.

Looking beyond the elections, it is difficult to be optimistic about the US Congress' ability (or even willingness) to reduce spending. Today, about two-thirds of the federal spending is mandatory and this fraction keeps growing every year due to a worsening of demographic trends. The most difficult thing to do in politics is to remove a temporary subsidy that people perceive as an acquired right.

Exhibit 36: The selloff in US rates has coincided with higher long-end rates across the world Changes in 10y yields of nominal and inflation-linked government bonds since 5/1/2023 (bp)



Source: BofA Global Research, Bloomberg



A look at the recent repricing of interest rates and r*

Rudi Dornbusch used to say that in economics, things take longer than expected to happen, and then they happen faster than expected. The recent repricing of global interest rates is a good example of that.

The repricing started in the US and took place across most of the curve, impacting significantly the 10y tenor in a bear steepening move. The repricing was mostly in real rates rather than expected inflation. It was probably a confluence of factors: the more resilient than expected US economy, the higher-than-expected US Treasury issuance (due to higher-than-expected deficit), the pace of QT announced by the Fed (now too much for the market to absorb given the higher Treasury needs) and the repricing of the YCC strategy of BoJ. The Fitch downgrade probably didn't help either, as it acted as a coordination device.

The international adjustment to the selloff in US rates took place through a combination of higher interest rates abroad and a stronger dollar against both developed and emerging currencies and curves (see Exhibit 37), which indicates that the repricing is a combination of higher interest rate consistent with more expansionary fiscal policy and also a stronger than expected economy.

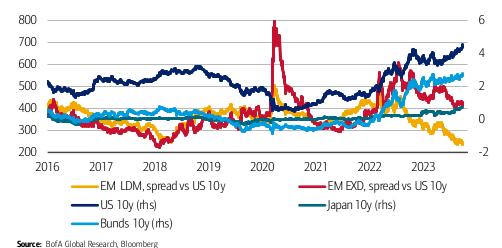
If we define r* as the real interest rate consistent with inflation at target and the economy at full employment, we can interpret the recent repricing as a move into a higher r* partially driven by looser than expected fiscal policy in combination with a stronger than expected economy.

The adjustment spillover into higher interest rates abroad is consistent with the global rebalancing of savings and investment. In this case, with the US reducing aggregate savings and increasing aggregate investment vis a vis the rest of the world. Global imbalances have been widening recently and currencies behaved as predicted by economic theory, with the dollar appreciating vs the renminbi and the yen while less so vs the Euro (see Exhibit 38 and Exhibit 39). How much of the repricing goes into the real exchange rate instead of interest rates abroad is given by the relative elasticities of savings and investment in the US relative to the rest of the world.

One interesting observation is that, even though EM rates sold off in sympathy with the US, EM spreads to the US tightened (see Exhibit 37).

Beyond fiscal policy, many other recent developments discussed will affect the evolution of r* across countries. Geopolitical uncertainty and global fragmentation will imply less

Exhibit 37: EM spreads compressed amid higher global rates Global yields (%), EM LDM and EXD spreads vs US (bp)



-1500

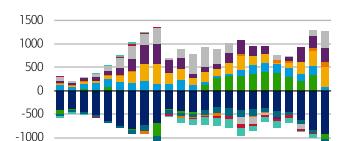
US

China

SSA

2000

Exhibit 38: Current accounts in widening mode (up or down)Current account balances (% of World GDP)



2009

2012

■ EM Asia

Japan

Source: BofA Global Research, IMFWEO Haver

2003

2006

■ Euro Area

FFMFA

LatAm

BofA GLOBAL RESEARCH

■ MEast and CAsia

2021

Exhibit 39: USD remains historically very strongReal Broad Effective Exchange Rate (Jan-2009=100)



Source: BofA Global Research, BIS, IMFWEO Haver

BofA GLOBAL RESEARCH

global trade, lower global growth, and lower capital mobility across countries as capital will have a bias to move "within geopolitically friendly blocks". This effect should imply a higher r* for current account deficit countries and lower r* for current account surplus countries, driving a wedge in r* between economic blocks. Most likely, this will imply a higher r* for the US.

2015

2018

UK

In this scenario, we should also expect r* for EM countries to gradually converge to r* in developed countries with the exception of the highly indebted countries. Demographics will also play a role in r*, although it can be argued that depending on the assumptions made, demographics can increase or decrease r*.

Is a fiscal dominance scenario too farfetched?

As we discussed before, from the asset pricing and asset allocation perspective, the most important question for the next 5 years is whether we are in a new high real interest rates regime, or we are going to eventually return to the pre-pandemic low real interest rates regime.

If we are in a new regime of higher interest rates, debt dynamics in the US will quickly embark on a very dangerous path absent a sizable fiscal consolidation, which is hard to foresee given the lack of political incentive of both parties to reduce spending and/or increase taxes in the coming years. With real interest rates on the rise, a case for fiscal dominance cannot be ruled out. Fiscal dominance occurs when monetary policy ends up being subordinated to fiscal policy, effectively adding an additional trade-off at best and constraint at worst on the conduct of monetary policy.

Next year we will see elections, with all the implications that might have for the conduct of monetary policy despite the independence of the Fed. In addition, elections will most likely be highly polarized. Even though this is not necessarily the baseline case yet, we can see a scenario next year where inflation remains about 3% or 3.5% and 10y real rates reach 3.5%.

In that scenario, would the Fed continue with the current pace of QT to tighten financial conditions or choose to slow the pace of QT or engineer some kind of financial repression to ease interest rate pressure on the fiscal accounts? This could be done without impacting the Fed's credibility and commitment to the 2% inflation target, if inflation is undershooting the target, but not with inflation above 3%. Again, this is not a baseline case, but a risk scenario to the conduct of monetary policy. Fiscal dominance is not around the corner, but it is not light years away either



Disclosures

Important Disclosures

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments. Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.

Individuals identified as economists do not function as research analysts under U.S. law and reports prepared by them are not research reports under applicable U.S. rules and regulations. Macroeconomic analysis is considered investment research for purposes of distribution in the U.K. under the rules of the Financial Conduct Authority. Refer to BofA Global Research policies relating to conflicts of interest.

"BofA Securities" includes BofA Securities, Inc. (*BofAS*) and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofA Śecurities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofAŚE (France): BofAŚE (Fr regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch (Hong Kong): Merrill (Hong Kong): Merr (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Mexico (Mexico): Merrill Lynch (Mexico): Mexico (Mexico): Mexico (Mexico): Mexico (Mexico): Mexico (Mexico): Mexico (Mexico): Mexi CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Árgentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill (Israel): Merrill Lynch (Israel): Merrill (Israel): Merrill (Israel): Merrill Lynch (Israel): Merrill (Israel): M Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in Iniqual investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/del

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your



jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments

effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

