

2023 Global Economic and Market Outlook

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Chair of Global Research

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J.P. Morgan Securities LLC

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Charts are taken from presentations from Global equities, economics, rates, FX, commodities, US fixed income, and EM research groups.

J.P.Morgan

Global economy is not at imminent risk of sliding into recession, but US economy will likely tip into a mild recession later next year...

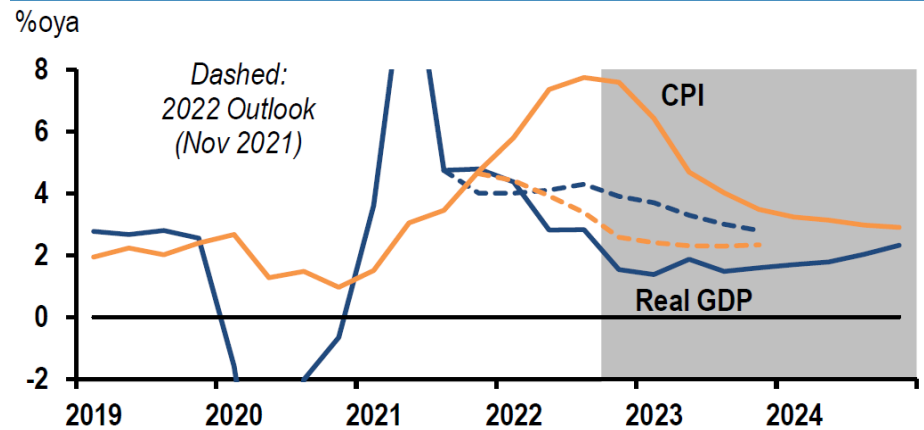
Global real GDP

% change annualized

	2021		2022		2023		2024
	4Q/4Q	1H	2H	1H	2H	1H	
Global (2.6)	4.7	1.1	2.0	1.7	1.4	2.2	
DM (1.4)	4.9	1.0	1.0	0.7	0.4	0.4	
US (1.5)	5.7	-1.1	2.0	0.9	0.0	0.0	
Euro area (1.3)	4.7	2.9	-0.3	0.2	0.7	0.6	
Japan (0.8)	0.5	2.4	1.1	1.6	0.3	0.3	
UK (1.0)	8.9	1.9	-1.4	-0.4	0.4	0.0	
EM (4.5)	4.4	1.3	3.6	3.1	3.0	4.9	
EM ex China (3.4)	5.1	2.9	1.9	2.0	1.9	2.4	
China (5.5)	3.6	-0.6	5.7	4.4	4.2	7.5	
India (6.0)	4.6	7.2	4.1	4.6	4.2	4.3	
EMAX (3.0)	4.6	3.4	2.2	2.7	2.2	2.7	
Korea (2.7)	4.5	2.8	1.2	1.5	1.0	1.8	
EMEA EM (2.5)	7.1	-1.8	0.6	1.6	1.2	2.0	
CEE (3.3)	8.4	5.3	1.6	1.2	2.6	2.6	
Russia (1.5)	5.2	-11.9	-0.8	0.7	2.0	2.0	
Turkey (3.8)	8.9	5.6	1.0	4.3	-2.6	0.8	
South Africa (1.3)	2.2	2.0	1.2	0.7	0.2	1.0	
Latam (1.9)	3.8	4.0	1.1	0.0	0.7	1.1	
Mexico (2.2)	2.0	4.2	2.6	1.1	0.8	1.0	
Brazil (1.5)	1.8	4.8	0.7	-0.9	0.8	1.6	

Source: J.P. Morgan Global Economics. Pre-pandemic potential in parentheses.

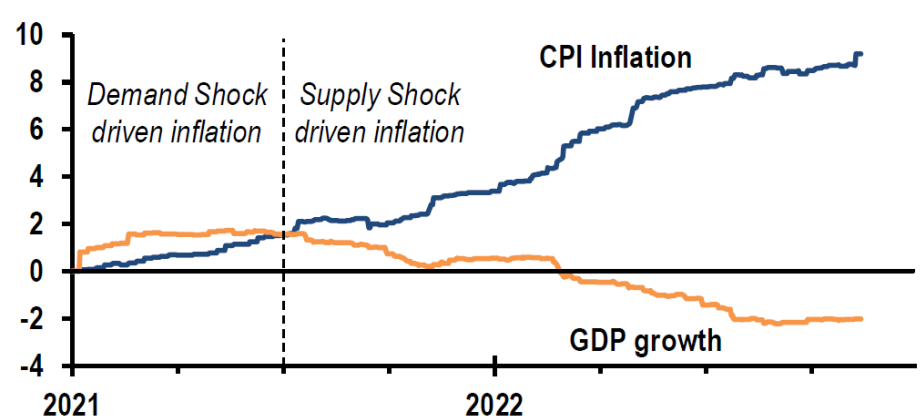
Real GDP and CPI, global



Source: J.P. Morgan Global Economics

Rolling revisions to global outlook

%pt; cum. revision to yr-ahead outlook; Forecast Revision Index (FRI)



Source: J.P. Morgan Global Economics

...and a genuine soft landing will be difficult to engineer

BROAD DAMAGE ALREADY DONE (20%)

Imminent recession as US and Europe break together with a peak in Fed policy rates below 5%, followed by a quick turn towards easing as global growth contracts and central banks see deteriorating labor markets and fading supply shocks pushing inflation lower.

SLIP-SLIDING AWAY (BASELINE 32%)

Near-term recession avoided, but mild US recession by late 2023 on weight of 500bp of Fed tightening and fading purchasing power relief to households by mid-2023. Rest of the world grows at a sub-par but positive pace, with the Fed to ease in 2024 as US unemployment rate to rise to 5%, pushing US core inflation below 3%.

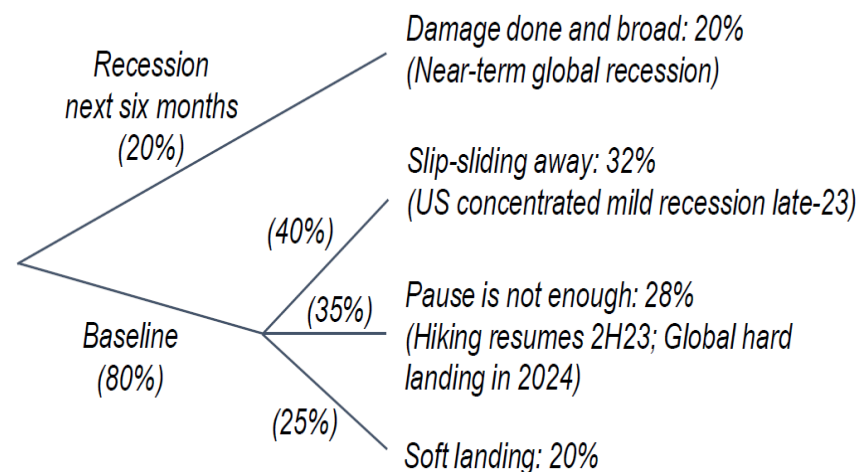
A PAUSE IS NOT ENOUGH (28%)

Central bank pause after 1Q23, but restrictive stance does not bring inflation back into comfort zone. A new round of synchronized tightening takes hold in late-2023, with policy rates rising materially further, generating an outright and fairly deep global recession in 2024.

SOFT LANDING (20%)

A recession is avoided and the softening in growth this year and next—combined with a further fading of transitory forces—could be sufficient to push inflation towards 2% without a sharp deterioration in labor markets with normalization of policy rates beginning in late 2023.

Global outlook scenarios

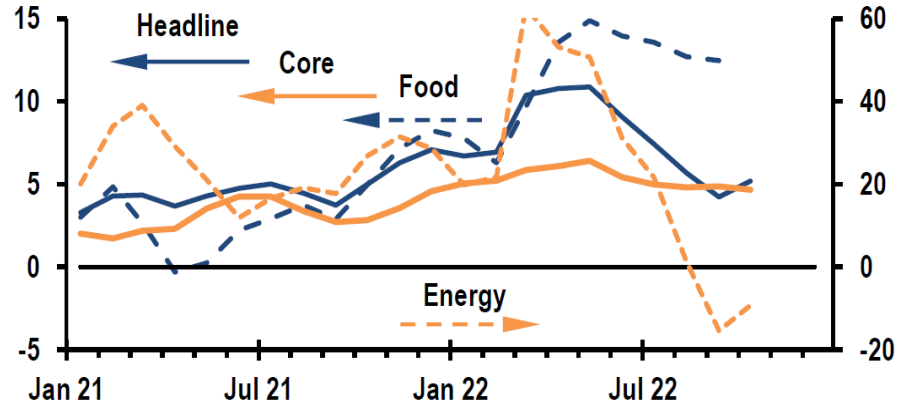


Source: J.P. Morgan Global Economics

Inflation drop is substantial but not sufficient

Consumer price inflation

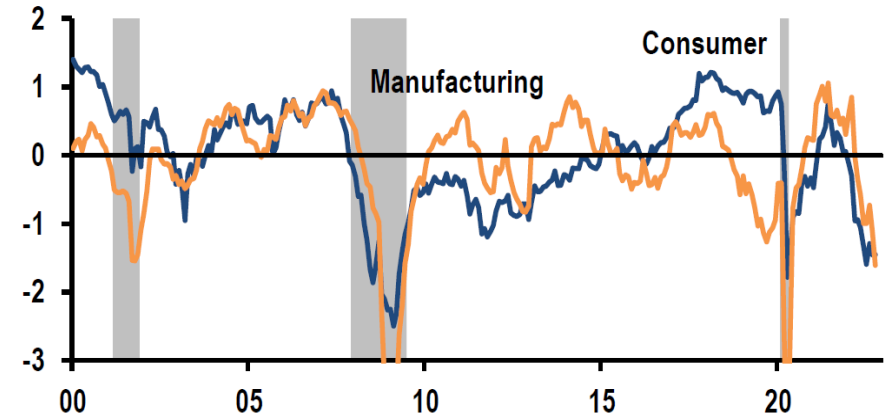
%3m, saar; both scales



Source: National sources, J.P. Morgan

Sentiment, global

Std. dev from avg 2010-19



Source: National sources, J.P. Morgan

Global CPI

% change ar

	2017-19	2020	2021	1H22	2H22	1H23	2H23
Headline	2.3	1.1	4.8	9.7	5.9	3.6	3.4
Energy	4.3	-6.6	24.5	39.1	3.1	2.6	2.5
Food	2.9	2.5	3.6	11.0	10.1	5.0	4.5
Core	2.0	1.3	3.2	5.7	4.8	3.3	3.0
Goods	0.6	0.8	4.5	5.6	3.4	0.8	1.0
Services	2.2	1.1	2.4	4.4	5.7	4.8	4.2

Source: National sources, J.P. Morgan. Note: Includes Turkey.

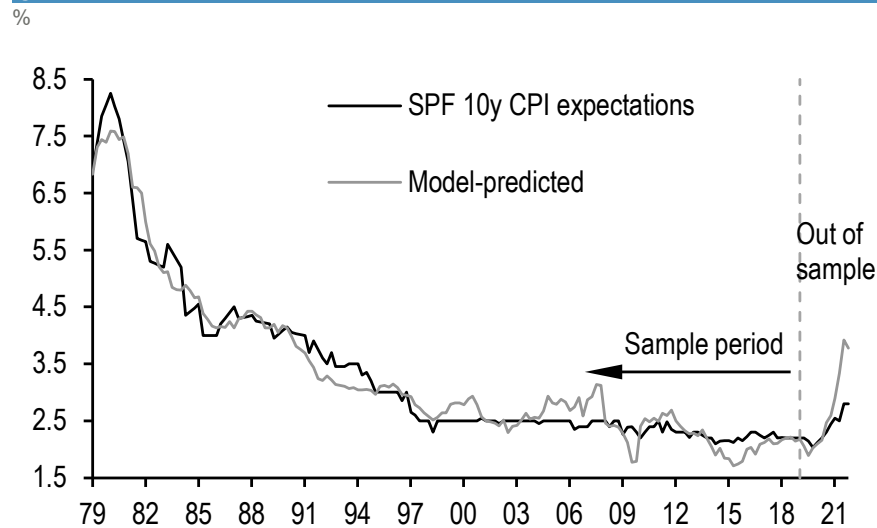
US inflation downshift underway with long term inflation expectations surprisingly insensitive to realized CPI inflation, while displaying a high sensitivity to broad commodity prices

Select categories of core CPI inflation

Category	Sep 2022 (%oya)	Sep 2023 forecast (%oya)	Share of core (%)
Core Goods	6.6	-2	27.4
New vehicles	9.4	-3	5.2
Used cars and trucks	7.2	-9	5.2
Other core goods	5.6	0.5	17
Core Services	6.7	5.4	72.6
Shelter	6.6	7.5	41.6
Health insurance	28.2	-39	1
Airline fares	42.9	0	0.8
Other core services	5	4.1	29.3
Core CPI	6.6	3.4	100
<i>Memo: Headline CPI</i>	8.2	3.2	--

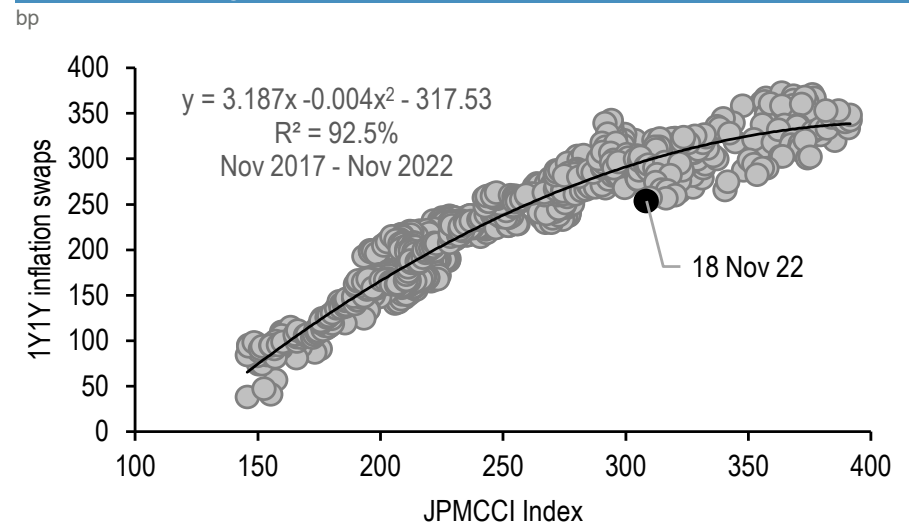
Source: BLS, J.P. Morgan

10-year CPI expectations from SPF regressed on 2- and 10-year realized CPI inflation



Source: Philadelphia Fed, J.P. Morgan

1Yx1Y inflation swaps regressed on JPMCCI and JPMCCI^2 over the last 5 years



Source: J.P. Morgan

US economic outlook: Bad moon rising and rent inflation should remain firm in the near term but core goods inflation should continue to fall but not return to its pre-COVID trend

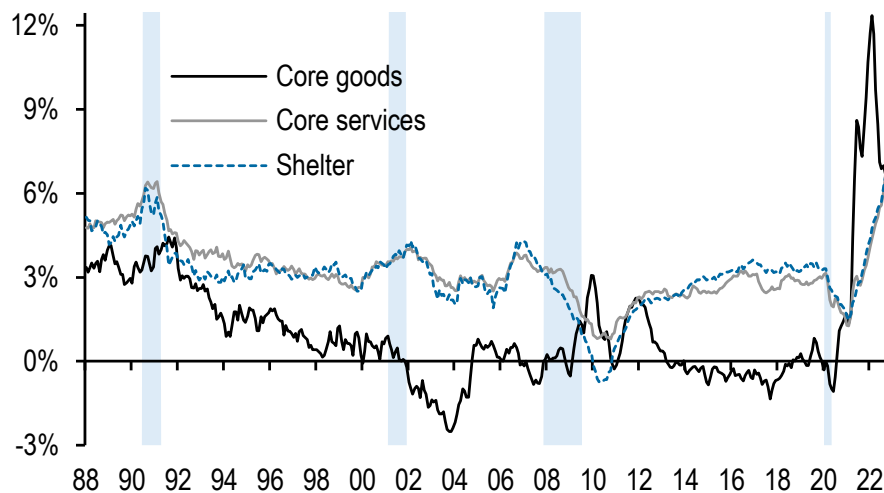
US economic forecasts

	3Q22	Forecasts							
		4Q22	1Q23	2Q23	3Q23	4Q23	2022 %q4/q4	2023 %q4/q4	2024 %q4/q4
Real GDP (%q/q, saar)	2.6	1.5	1.0	0.8	0.5	-0.5	0.5	0.4	1.0
Real consumer spending (%q/q, saar)	1.4	3.2	2.0	1.8	1.3	0.2	2.0	1.4	1.6
Core PCE prices (%q/q, saar)	4.5	4.0	3.1	3.1	2.8	2.2	4.7	2.8	2.1
Unemployment rate (% , qtr avg)	3.6	3.6	3.7	3.8	4.0	4.3			
Fed funds target (% , eop, top of range)	3.25	4.50	5.00	5.00	5.00	5.00			

Source: J.P. Morgan forecasts

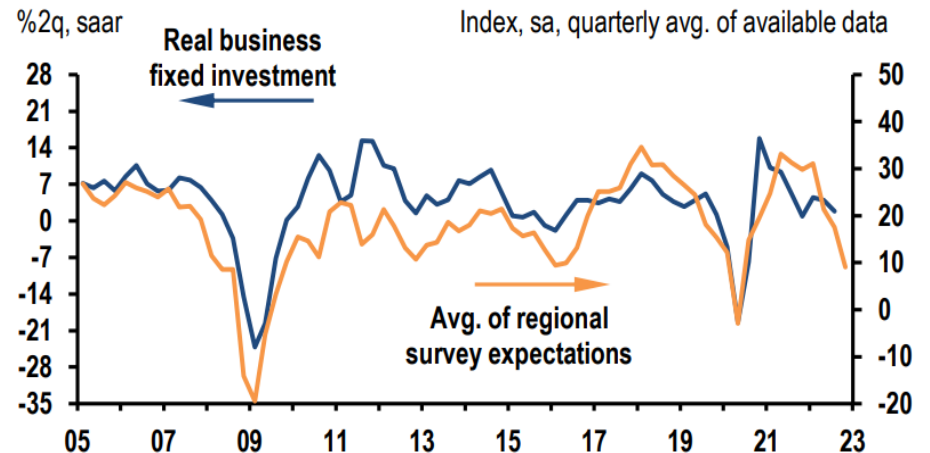
Core goods CPI inflation versus core services and shelter CPI inflation

Blue bars represent recession periods; % oya



Source: BLS, J.P. Morgan

Capex and business survey capex expectations



5 Source: BEA, various Fed branches, J.P. Morgan

Euro area facing a mild energy-related recession this winter with dim prospects for a convincing rebound

Euro area forecasts

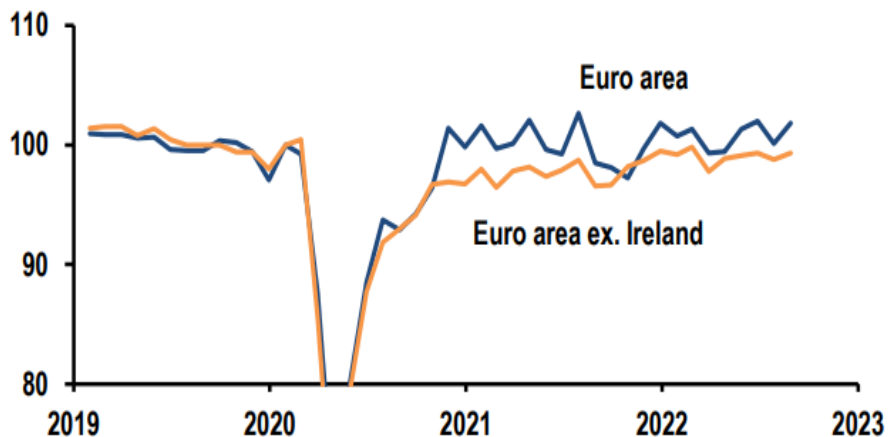
%oya, except where stated, annuals are %oya except year-end for deposit and U-rate

	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	2021	2022	2023
GDP (%q/q ar)	9.3	2.1	2.4	3.3	0.8	-1.3	-1.0	1.5	1.0	0.5	5.3	3.3	0.2
U-rate (%)	7.5	7.1	6.8	6.6	6.7	6.8	7.0	7.1	7.1	7.2	7.1	6.8	7.2
Inflation													
Headline	2.8	4.6	6.1	8.0	9.3	10.5	8.9	7.2	5.3	2.9	2.6	8.5	6.1
Core	1.4	2.4	2.7	3.7	4.4	5.0	4.8	4.4	3.7	2.8	1.5	3.9	3.9
ECB depo. Rate	-0.50	-0.50	-0.50	-0.50	0.75	2.00	2.50	2.50	2.50	2.50	-0.50	2.00	2.50

Source: Eurostat, J.P. Morgan

Euro area manufacturing production

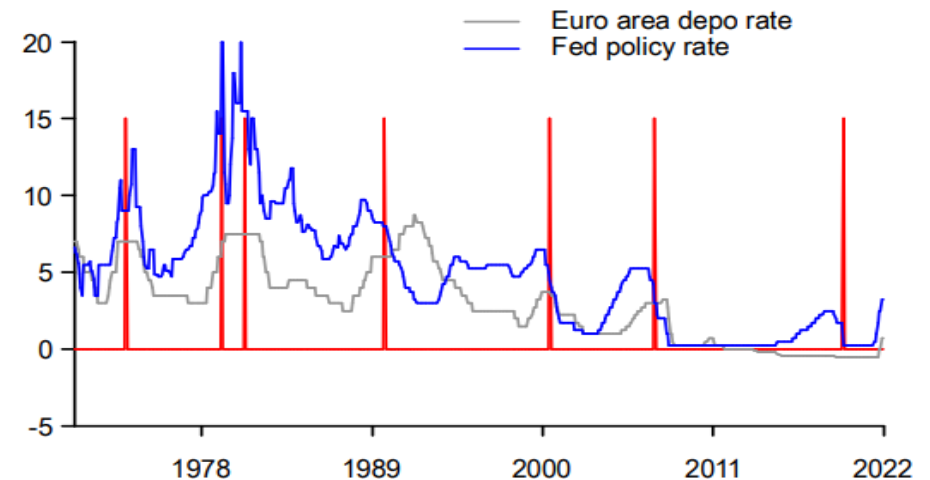
Index jan 2020 = 100



Source: J.P. Morgan

The ECB has tended to start hikes later than the Fed and continue hiking (or pause) even after the Fed has paused ...

Euro area and Fed policy rates; % (red lines represent US recession start dates)

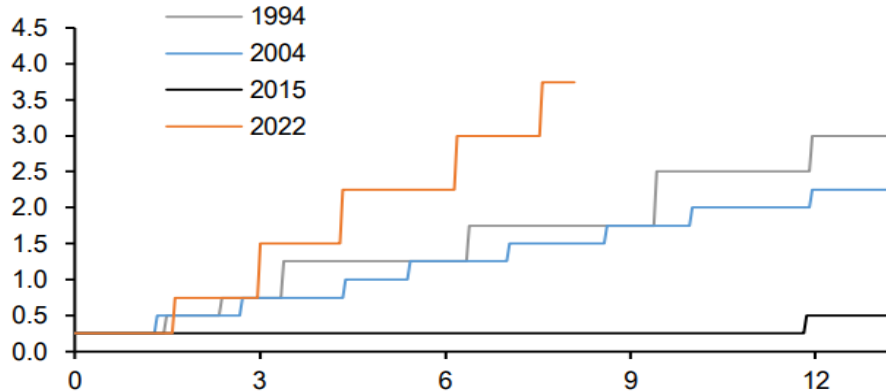


Source: J.P. Morgan; Pre 1999 data for the ECB represents the Bundesbank.

The Fed tightening cycle set to draw to a close early in 2023...paving the way for lower yields and a steeper curve

The Fed has raised rates at the fastest pace in more than three decades...

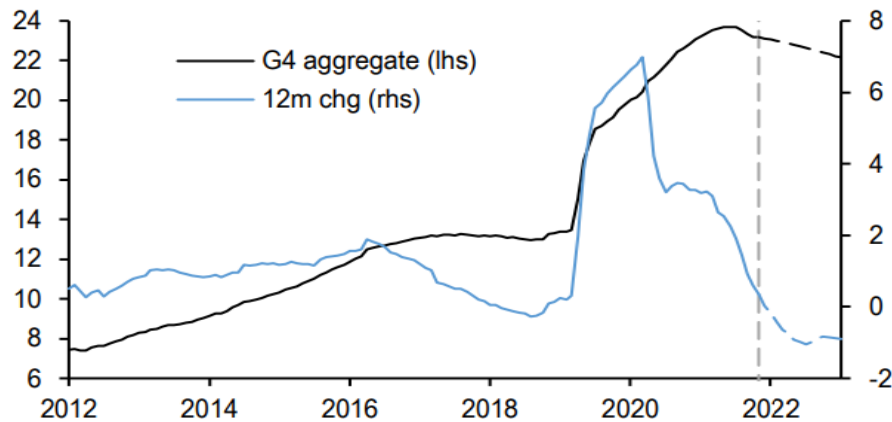
Change in Fed funds rate in 12 months after first rate hike in 1994, 2004, 2015 and 2022* cycles; bp



* Dates used: 2/4/94, 6/30/04, 12/16/15, 3/16/22
Source: J.P. Morgan

In contrast to the prior QT episode, we expect the aggregate G4 central bank balance sheet to shrink in 2023

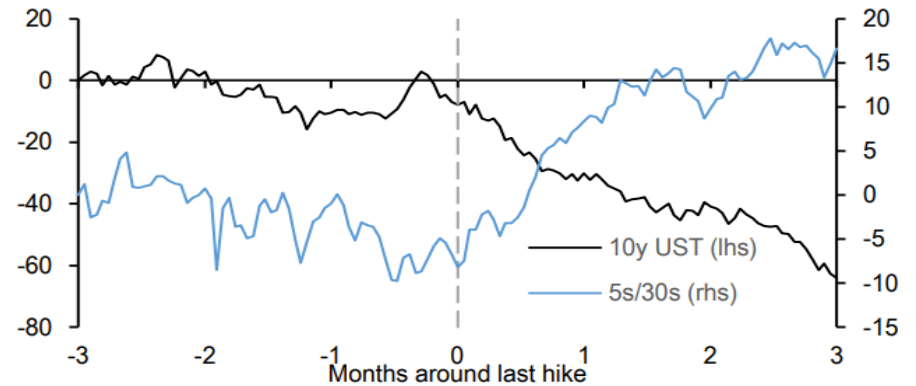
Aggregate G4 balance sheet size (lhs) versus 12-month changes (rhs) with J.P. Morgan forecasts through YE23; \$bn both scales



Source: Federal Reserve, BoE, ECB, BoJ, J.P. Morgan

Yields tend to reverse lower and the long end tends to steepen once the Fed goes on hold...

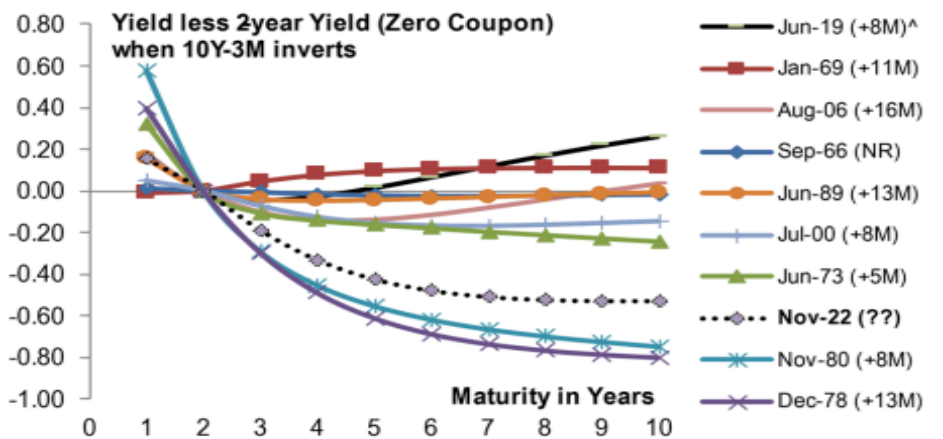
Cumulative change in 10-year Treasury yields (lhs) and 5s/30s Treasury curve (rhs) in the months around the last hike in a Fed tightening cycle*; bp on both axes



* Dates used: 2/1/95, 5/16/00, 6/29/06, 12/20/18
Source: J.P. Morgan

Yield curve most inverted except Dec'78 and Nov'80

2-year yield is subtracted to make the yield curves comparable over time

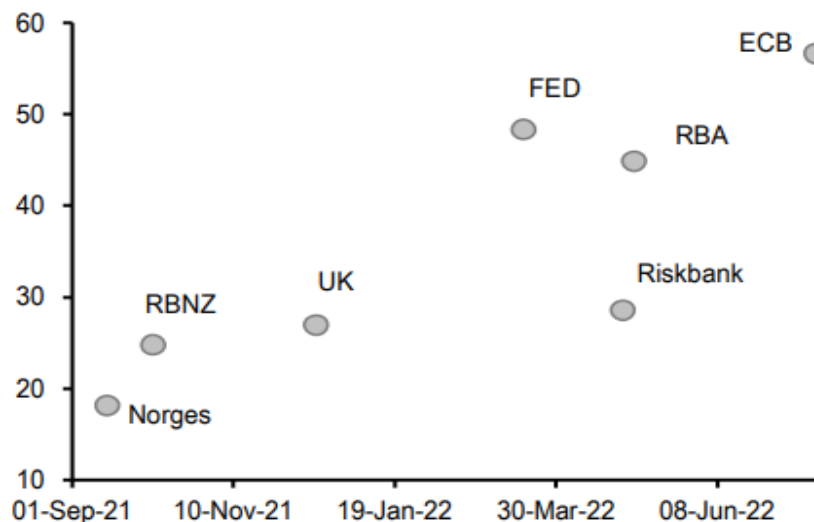


Source: J.P. Morgan Equity Macro Research

Most DM Central Banks expected to complete the tightening cycle by 1Q23

DM central banks that have started earlier their tightening cycle were able to keep a more modest average pace

Average monthly pace of tightening for DM central banks since their inception



Source: J.P. Morgan

We believe that between 15% and 30% of our expected cumulative hikes still need to be delivered, with most of CBs expected to complete the journey by 1Q23

JPM expectation for addition tightening in this cycle by DM central banks

	Cumulative hikes	Terminal in policy rate and additional hikes (JPM)			Market peak in OIS rate in next 36M		
	Total (bp)	Terminal rate (%)	Total (bp)	% of tightening left	Time of peak	Peak rate %	Peak time
US	375	4.50-4.75%	75	17%	Jan-23	5.17%	Jun-23
Euro area*	200	2.25%	75	27%	Feb-23	3.12%	Oct-23
Japan	0	-0.10%	0	-	-	0.30%	Nov-25
UK	290	4.25%	125	30%	Feb-23	4.64%	Nov-23
Australia	275	3.35%	50	15%	Nov-23	4.16%	Nov-23
New Zealand	325	4.75%	125	28%	Nov-22	5.36%	Aug-24
Sweden	175	2.50%	75	30%	Feb-23	3.18%	Oct-23
Norway	250	3.00%	50	17%	Mar-23	3.70%	Jan-23

Source: J.P. Morgan

Increase in Real Short-Term Rate by Mar'23 Likely to be the Highest in over 40 years

Real Short-Term Rate = Fed Policy Rate - Core CPI Inflation.

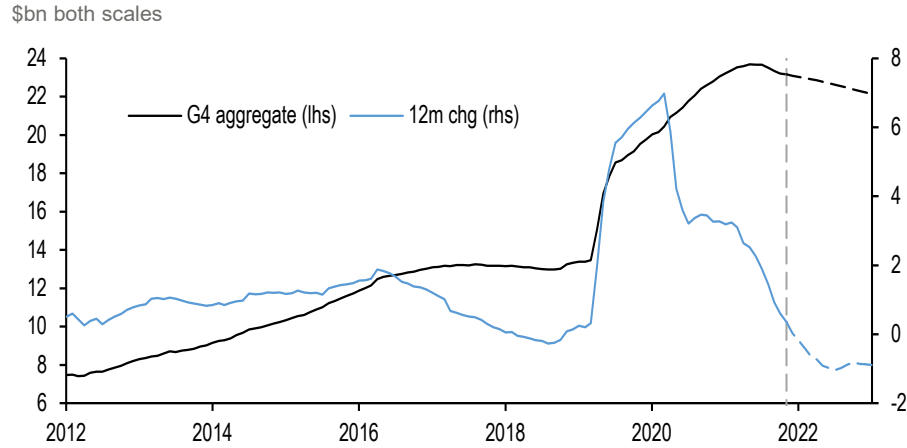
Policy rate is target Fed Funds Rate from 1971 and NY Fed Discount Rate prior to 1971

	# of Hiking Cycles	Avg Real Rate (Policy Rate-Core Inf) at:			Change in Real Rate	
		Hike Start	Last Hike	First Cut	Last Hike - First Hike	First Cut - First Hike
Rising Inflation (1965-1981)	15	2.0	4.0	4.1	2.0	2.2
Falling Inflation (1983-1993)	7	3.8	4.5	4.6	0.7	0.8
Stable Inflation (1994-2020)	5	0.8	2.7	2.7	1.8	1.8
Mar'2022 Hike		-5.9	0.0 [^]	??	5.9 [^]	

Source: J.P. Morgan Equity Macro Research

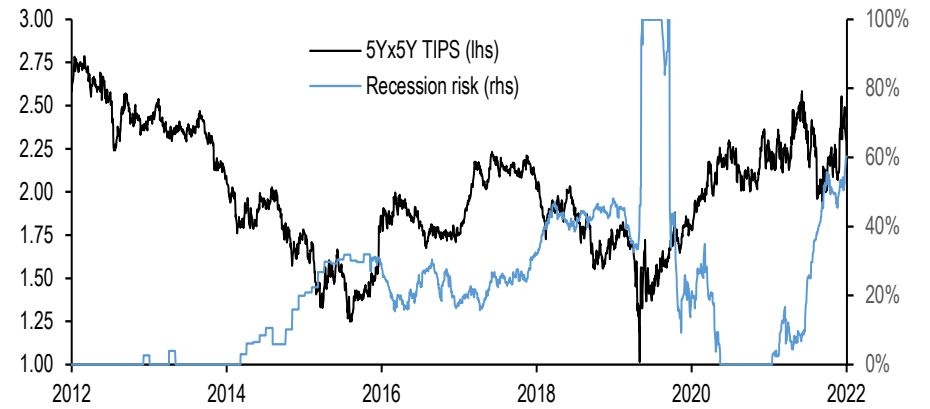
DM central banks QT is more synchronized and inflation expectations are better anchored than in previous cycles...

Aggregate G4 balance sheet size (lhs) versus 12-month changes (rhs) with J.P. Morgan forecasts through YE23



Source: Federal Reserve, BoE, ECB, BoJ, J.P. Morgan

5Yx5Y TIPS breakevens (lhs, %) versus 12-month ahead recession probability (rhs, %)

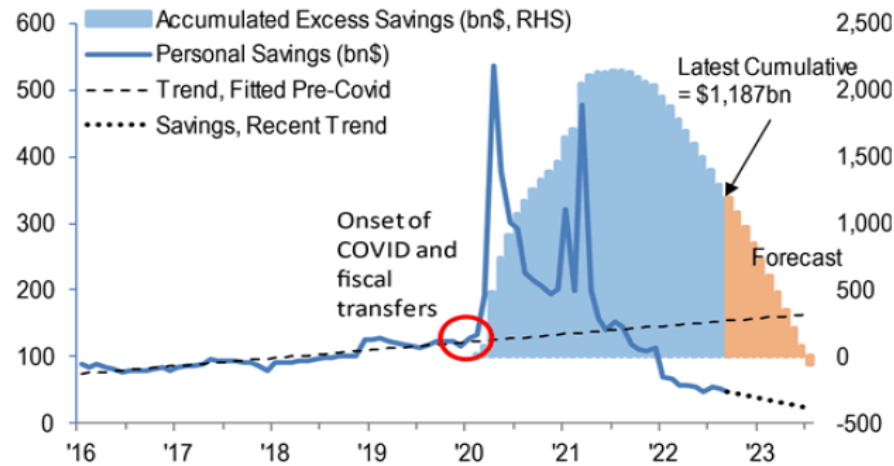


Source: J.P. Morgan

Household excess savings likely to be used up by 2H23 but household fundamentals appear more favorable than corporates

Household "Excess" Savings Likely Gone by Mid-2023

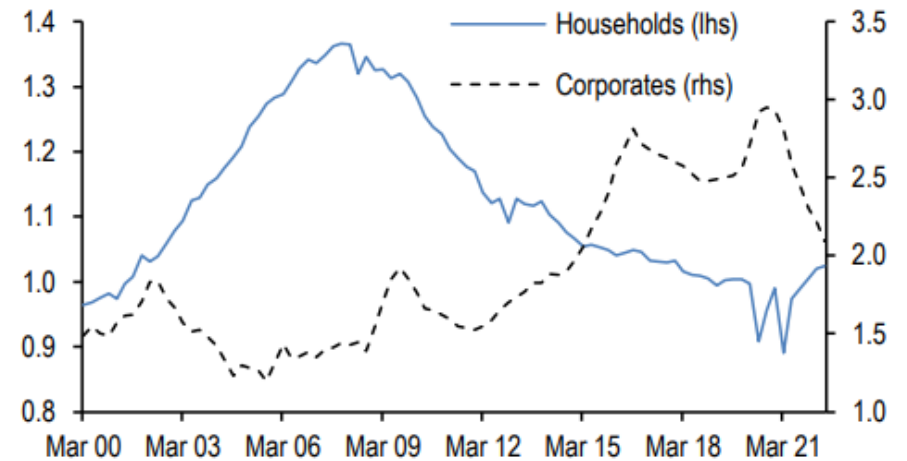
Savings recent trend assumes a decline at the 2022 rate



Source: J.P. Morgan Equity Macro Research

Household fundamentals appear more favorable than corporates

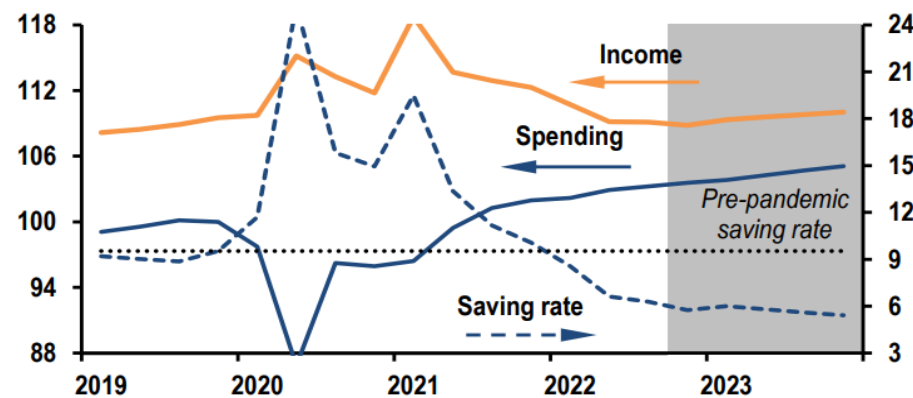
Debt to income (lhs) and debt to EBIDTA (rhs) %



Source: J.P. Morgan, Federal Reserve

Household income, spending, and saving, G-4

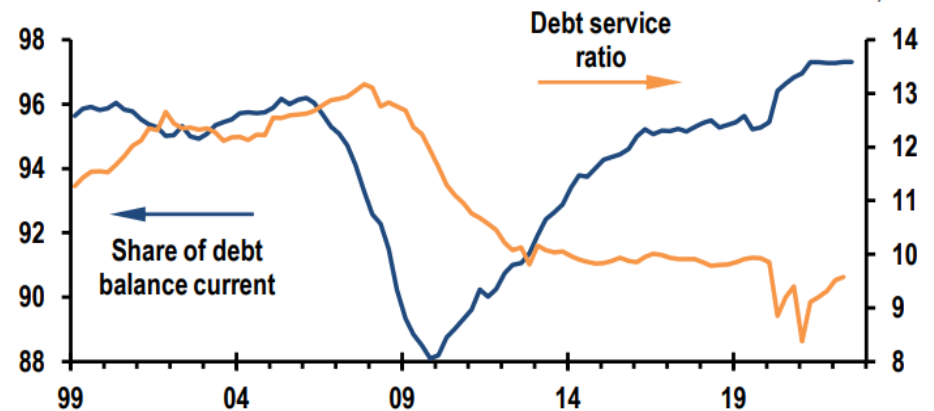
Index, 4Q19 = (100 spending, 109.5 income) = 9.5% saving rate % of income



Source: J.P. Morgan Global Economics

Select household debt measures

% of total balance % , sa



Source: New York Fed, Federal Reserve Board, J.P. Morgan

2022 fund outflows have been sizeable across fixed income asset classes, with active and passive funds witnessing a sharp divergence

Fund flows by asset class

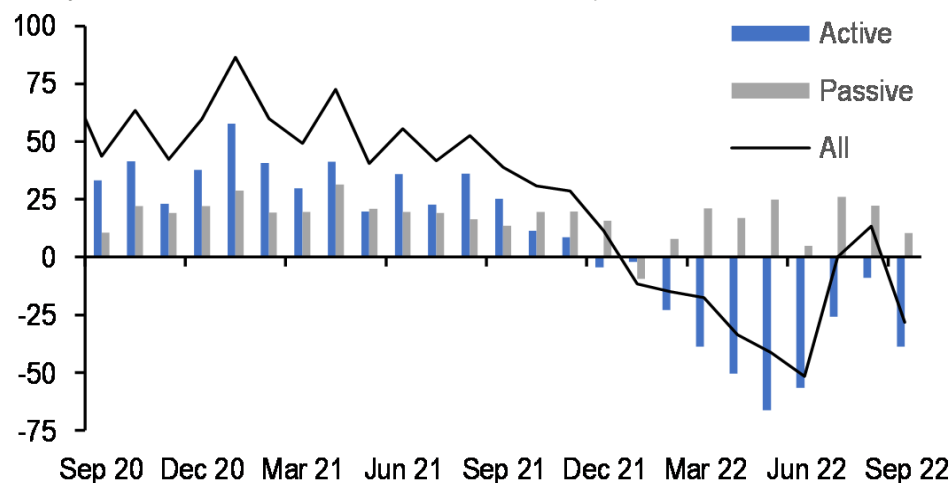
Asset Class	Fund Flow (\$mm)	WoW	Trend	4-week avg (\$mm)	YTD (\$mm)	YTD (% of AUM)	ETF (\$mm)	Mutual Fund (\$mm)	ETF Trend
IG	+993	+4,906		-489	-160,150	-3.92%	+1,930	-937	
HY	-345	+246		+1,010	-47,867	-9.85%	-410	+65	
Lev Loans	-350	+54		-445	-3,268	-2.36%	+25	-376	
Munis	+798	+1,918		+413	-96,867	-8.61%	+1,315	-517	
Money Markets	+48,631	+13,520		+21,290	+34,020	0.60%	-	-	
Equities	-10,001	+6,078		-1,109	+144,842	0.91%	-930	-9,070	

*Note: IG = Corp + Agg + Total Return

Source: J.P. Morgan, EPFR as of 9 December 2022

Active and passive bond funds have witnessed a stark divergence in flows over the course of this year

Monthly net flows into domestic US bond funds, active versus passive; \$bn



Source: EPFR

Annual EM dedicated fund flows

USD billion

	2018	2019	2020	2021	YTD
EM Total	35.1	55.5	26.5	153.3	-86.0
EM Bonds	18.7	67.1	23.3	52.5	-87.4
<i>Fund Type</i>					
Retail	-10.2	43.2	11.5	34.4	-79.2
Strategic*	28.9	23.9	11.8	18.1	-8.2
<i>Currency Exposure</i>					
Hard	9.2	55.5	22.8	31.2	-43.7
Local	9.5	11.6	0.5	21.3	-43.8
o.w . EM ex - Cina*	0.2	5.3	-13.5	-2.6	-19.9
o.w . China	1.1	3.1	14.9	20.9	-22.3
EM Equity (retail funds)	16.4	-11.6	3.2	100.8	1.4

Source: J.P. Morgan, EPFR*Retail flows only

There hasn't been a US recession that didn't involve a large spread widening and equity drawdown but default rates expected to remain low

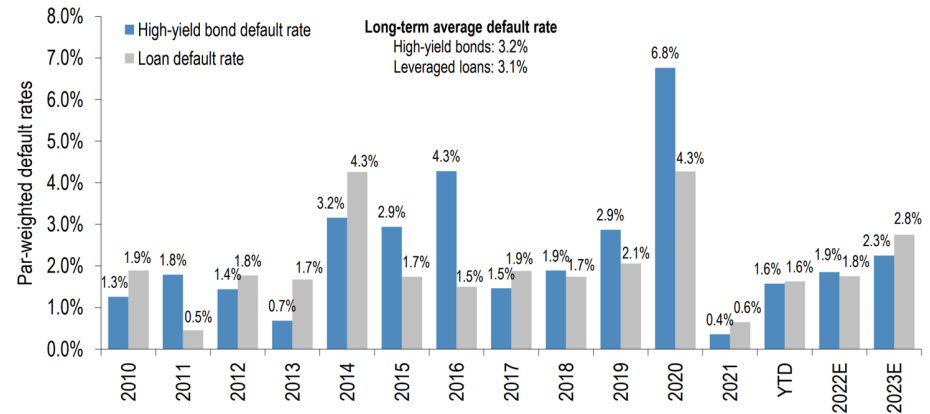
US cycles and US credit and equities

Key indicators over cycles since 1960

Mid-cycle Fed Hikes	US recession start	US recession end	Fed Funds Chg Prior (bp)	Peak Fed Funds to recession (months)	US Corp Spread Chg (bp)	US Corp Spread Peak (bp)	US Equity max drawdown (%)
	Apr-60	Feb-61	332	4	70	132	-28%
	Dec-69	Nov-70	540	4	187	276	-35%
	Nov-73	Mar-75	963	-8	220	331	-48%
	Jan-80	Jul-80	1296	-3	201	299	-17%
	Jul-81	Nov-82	1005	6	242	382	-27%
	Jul-90	Feb-91	326	14	85	236	-20%
1994-95	-	-	300	-	-	-	-9%
	Mar-01	Nov-01	175	9	113	266	-49%
	Dec-07	May-09	425	17	668	784	-57%
	Mar-20	Apr-20	225	13	268	398	-34%
Current			375	?	95	203	-25%

Source: J.P. Morgan, FRED database, Haver Analytics

We expect high-yield bond and leveraged loan default rates to remain modest at 2.25% (HY) and 2.75% - (LL) in 2023



Source: J.P. Morgan's High Yield & Leveraged Loan Strategy

US equity outlook: 2023 EPS growth to contract

2023 Equity Price Targets

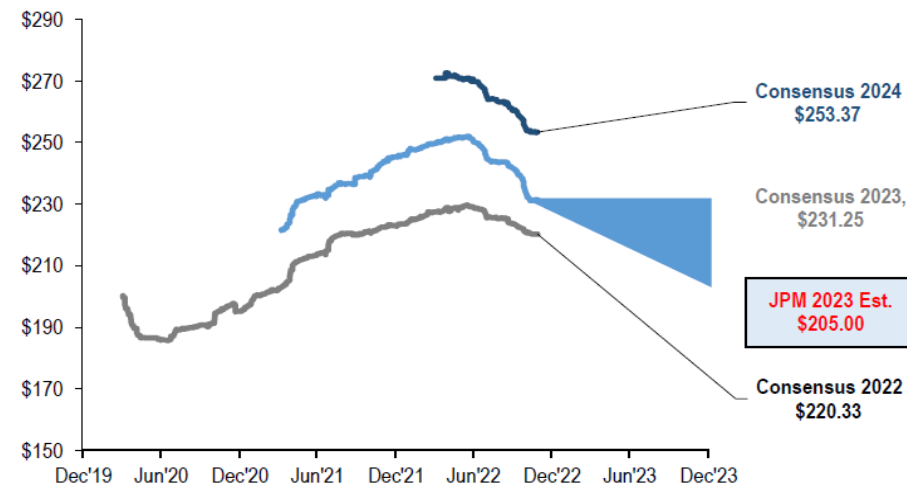
% upside as of Nov-28

	'23 PT	% Upside	'23 EPS	YoY Gth
US	\$4,200	6%	\$205	-9%
Eurozone	€ 256	6%	€ 17.80	10%
UK	£8,150	9%	£676	10%
JP	¥2,100	5%	¥149.0	-4%
EM	\$1,060	14%	\$82	-1%
China	HK\$66	17%	HK\$6.10	14%
Asia ex-JP	\$630	6%	\$46	5%
ASEAN	\$650	1%	\$40	5%
CEEMEA	\$220	13%	\$28	7%
LatAm	\$2,600	21%	-	-6%

Source: J.P. Morgan Equity Macro Research

JPM S&P 500 EPS Target vs. Consensus

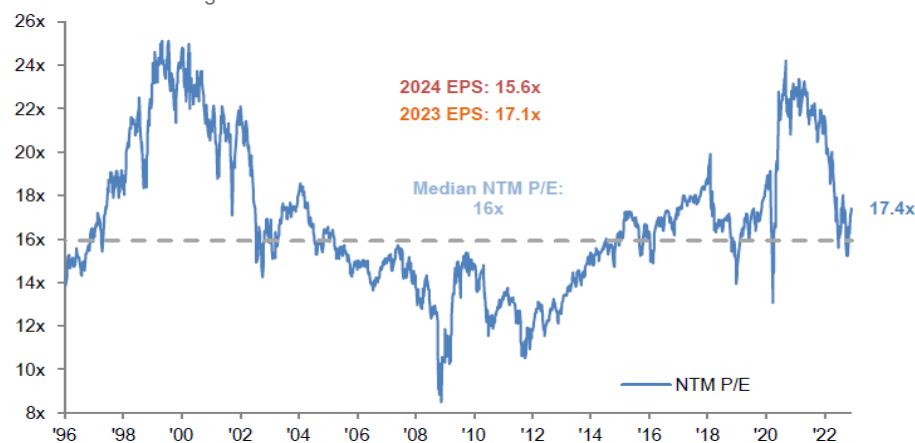
Earnings Per Share



Source: J.P. Morgan Equity Macro Research, Factset, I/B/E/S

S&P 500 NTM P/E Multiple Still Elevated vs. History

NTM Price to Earnings



Source: J.P. Morgan Equity Macro Research, Factset, I/B/E/S

Regime change points to secular forces and structural drivers of higher real yields over the longer term

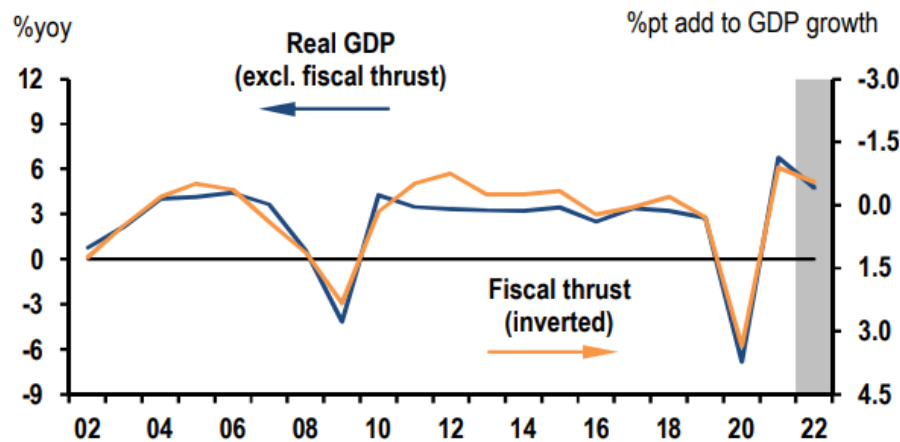
Level of real interest rates in 2030 relative to averages in other decades due to each factor

	1980s	1990s	2000s	2010s	Comparable 10yT real yield
<i>Demographics**</i>	Comparable	Higher	Higher	Higher	5.42%
<i>Climate investment**</i>	Higher	Higher	Higher	Higher	> 5.42% (5.75%)
<i>Sector composition</i>	Lower	Lower	Lower	Lower	< 0.10% (-0.25%)
<i>Economic growth**</i>	Lower	Lower	Lower	Lower	< 0.10% (-0.25%)
<i>Inequality</i>	Lower	Lower	Lower	Comparable	0.10%
<i>EM reserves**</i>	Lower	Lower	Lower	Comparable	0.10%
<i>Fiscal debt**</i>	Higher	Higher	Higher	Higher	> 5.42% (5.75%)
<i>Corporate profits</i>	Lower	Lower	Comparable	Higher	1.94%
<i>Deglobalization**</i>	Lower	Comparable	Higher	Higher	3.34%
<i>Macro volatility</i>	Comparable	Higher	Higher	Higher	5.42%
<i>Financial repression**</i>	Lower	Lower	Lower	Comparable	0.10%
Overall				Equal weight	2.5%
				Non-equal weight	2.7%

Source: J.P. Morgan

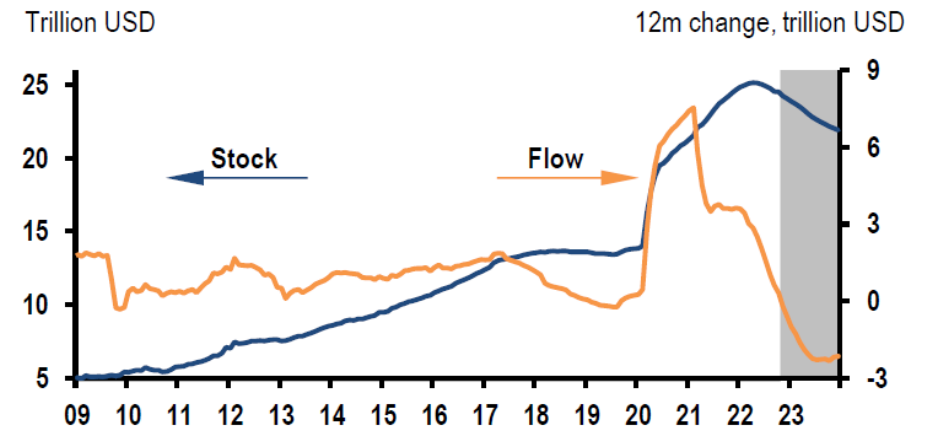
Lesson learned from the 2008 Global Financial Crisis was to go bigger and bolder on both monetary and fiscal stimulus

Global fiscal policy and GDP



Source: J.P. Morgan Global Economics

DM central bank balance sheet



Source: J.P. Morgan Global Economics

Central bank policy rates

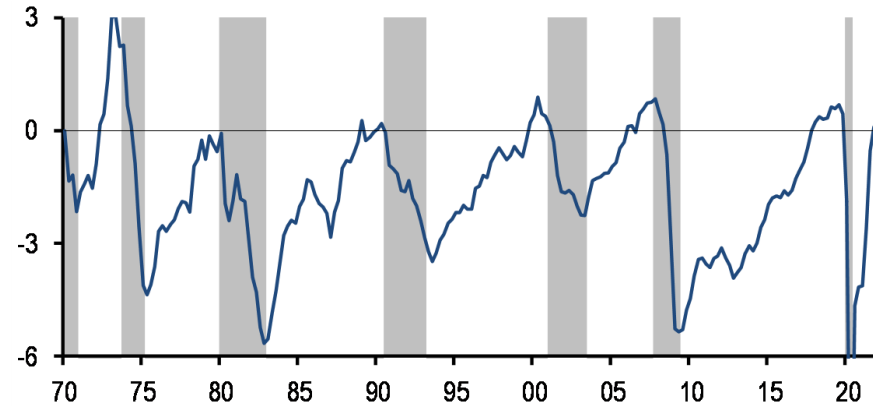


Source: J.P. Morgan Global Economics

Pandemic marks the end of a 40-year period of *Great Moderation*, as bolder and bigger monetary stimulus is closing the output gap much more rapidly than in past crises

During the *Great Moderation*, DM economies took 4-8 years to get back to full capacity following a recession

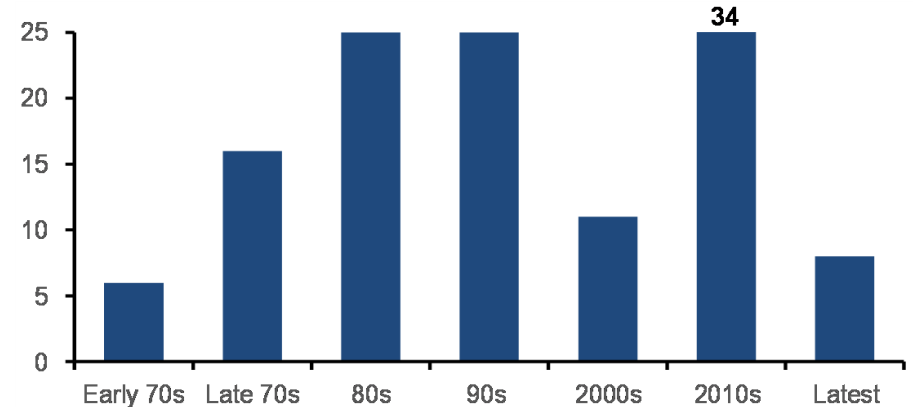
Developed economy output gap, % of potential



Source: J.P. Morgan Global Economics

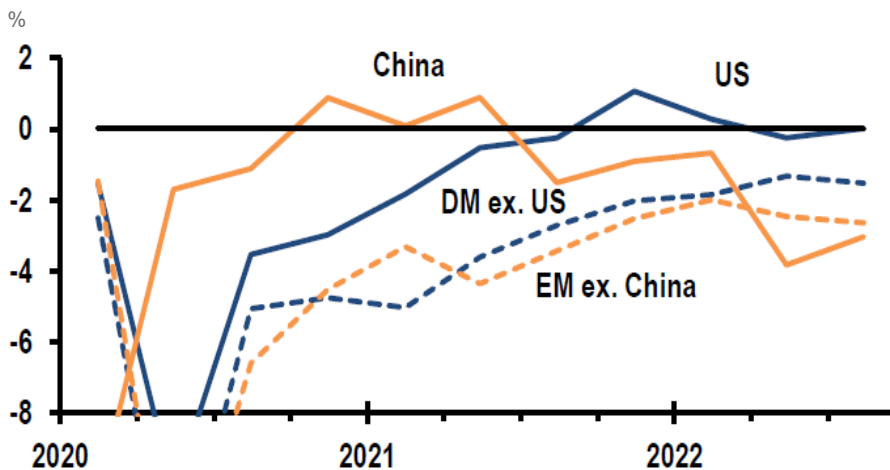
Quarters needed to close output gap

Quarters from previous cyclical trough



Source: J.P. Morgan Global Economics

Real GDP Deviation from pre-pandemic potential path

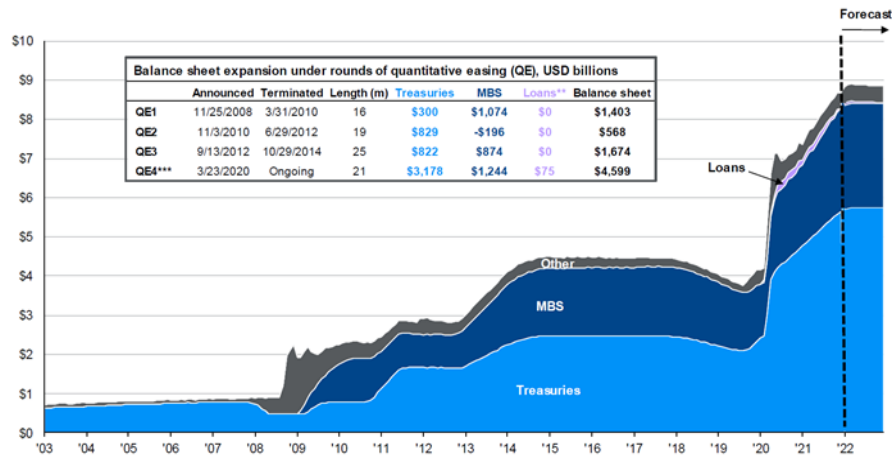


Source: J.P. Morgan Global Economics

Goodbye to negative yields: Fiscal debt to drive higher real yields over the long term

Federal Reserve balance sheet

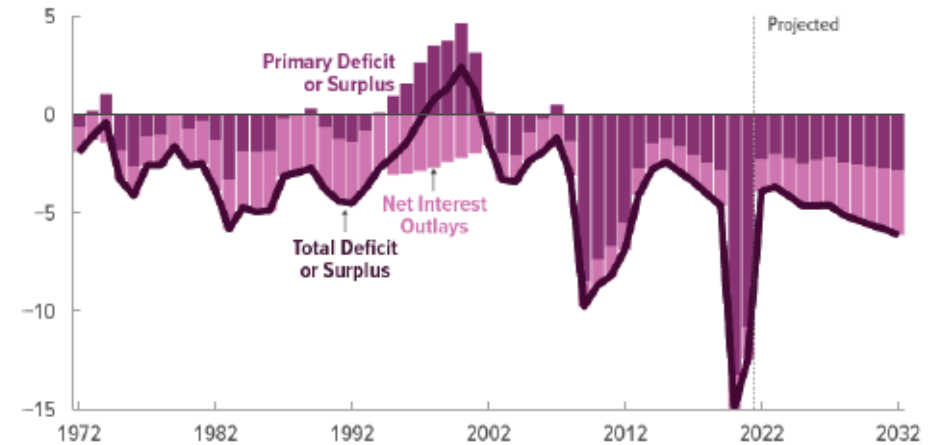
USD trillions



Source: FactSet, Federal Reserve, J.P. Morgan Investment Bank, J.P. Morgan Asset Management

Fiscal debt reaches historic highs with net interest outlays to double over next decade

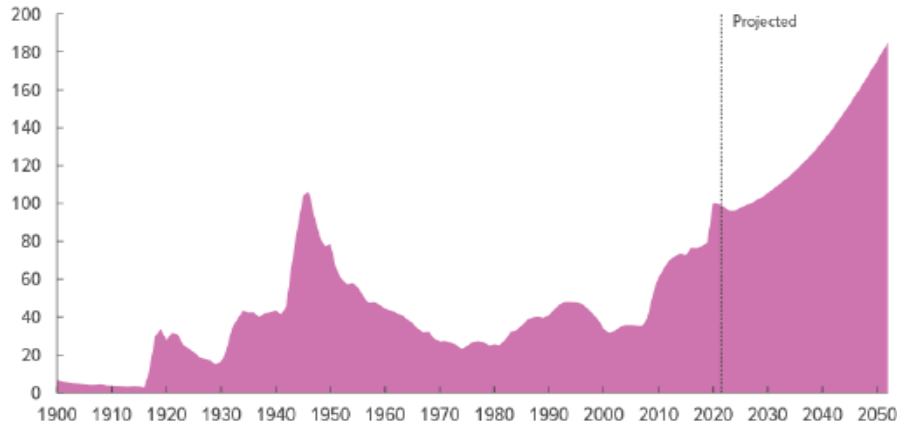
% of US GDP



Source: Congressional Budget Office

US federal debt to reach 110% of GDP over the next decade and 185% of GDP by 2052

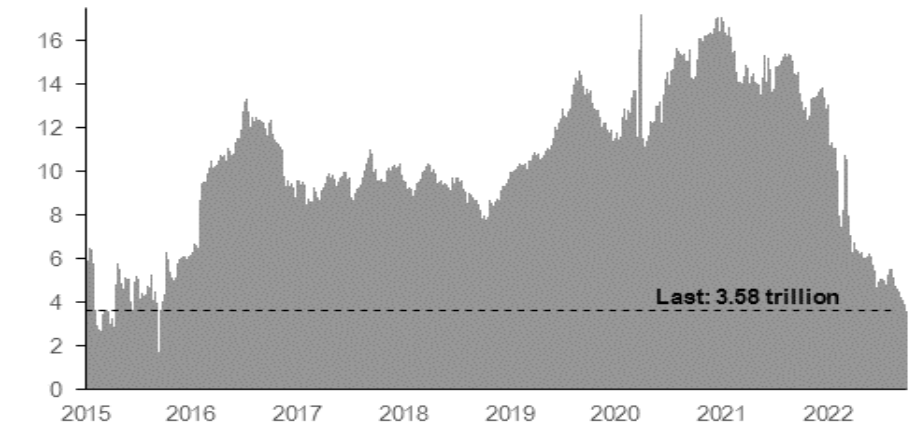
% of GDP



Source: Congressional Budget Office

Stock of negative-yielding debt has fallen to just \$3.6trn from peak of \$17.2trn

% of GDP

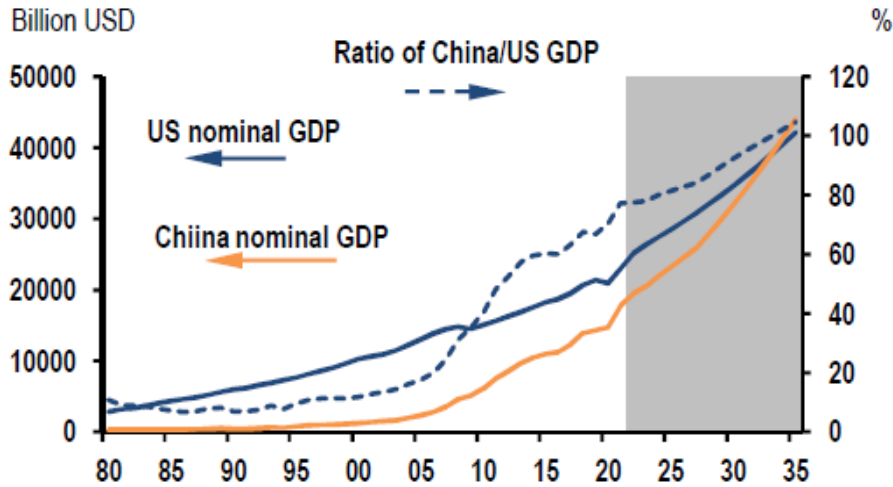


Source: J.P. Morgan

J.P. Morgan

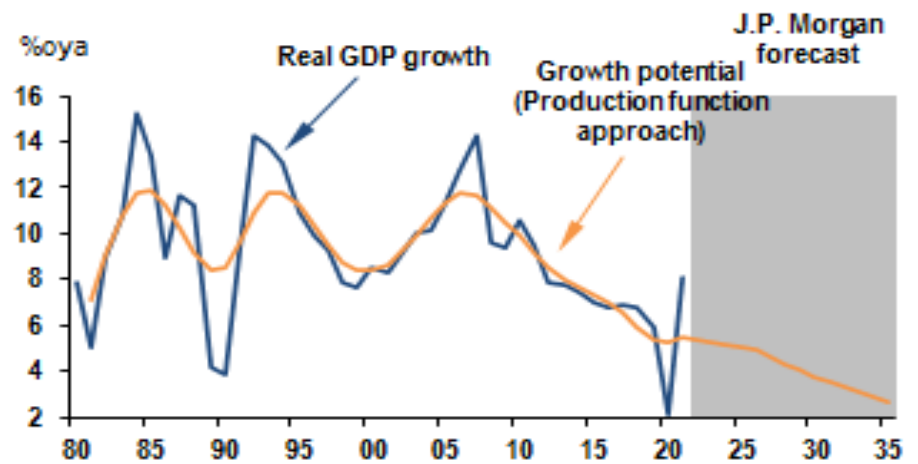
China's economy facing a secular growth slowdown

China's catch-up with the US



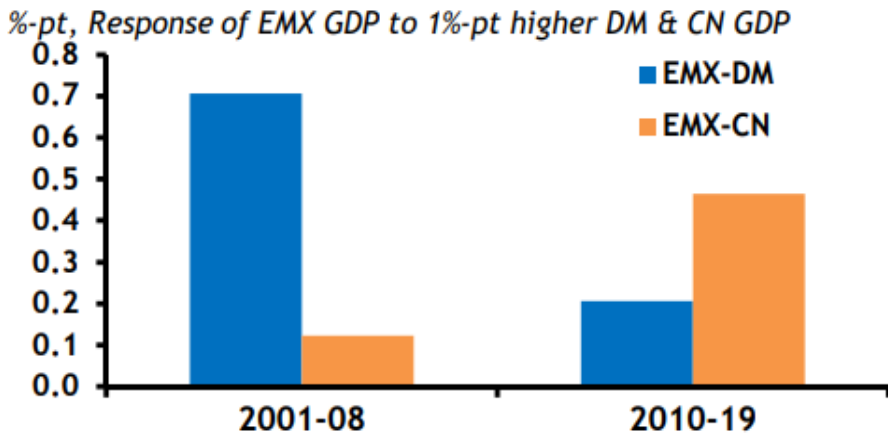
Source: J.P. Morgan

China's growth slowdown



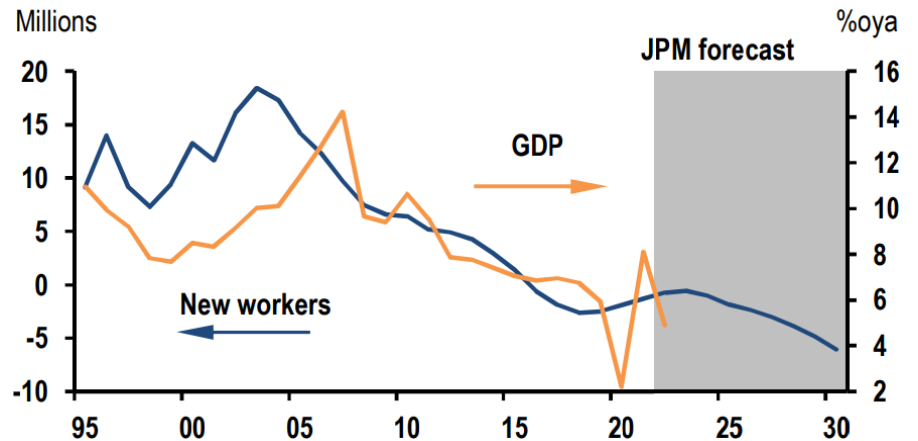
Source: NBS, J.P. Morgan estimates

EMX GDP sensitivity to China has increased



Source: J.P. Morgan estimates

China's demographics and growth

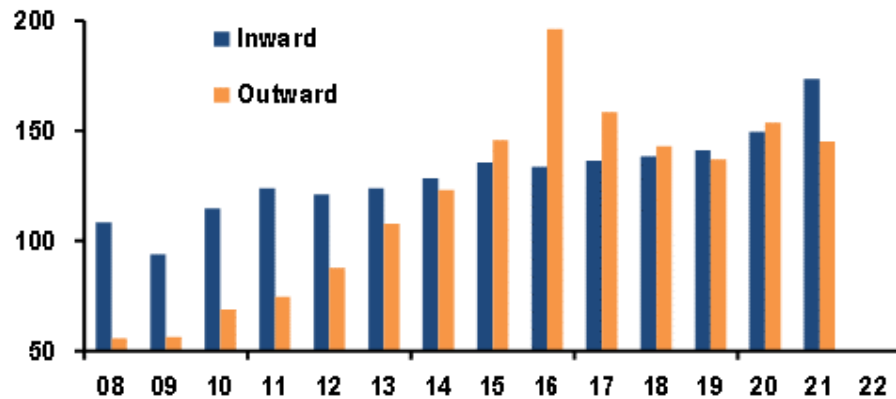


Source: Haver, J.P. Morgan

Deglobalization is not yet reality and China still dominates the global supply chain and FDI inflows...

China's foreign investment

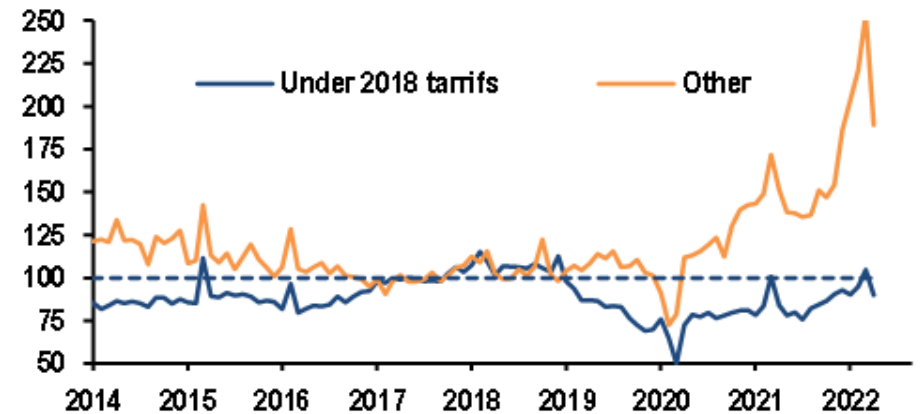
USD bn



Source: CEIC, J.P. Morgan

US imports from China

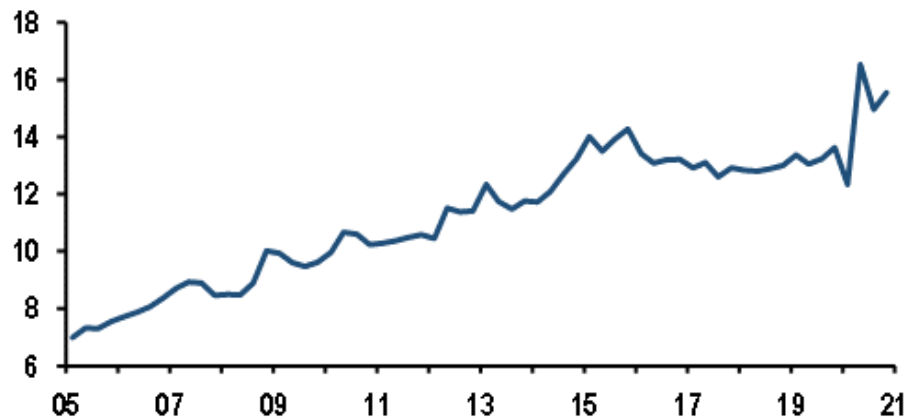
Indexed based on nominal value, 2017=100, sa



Source: Census Bureau, J.P. Morgan

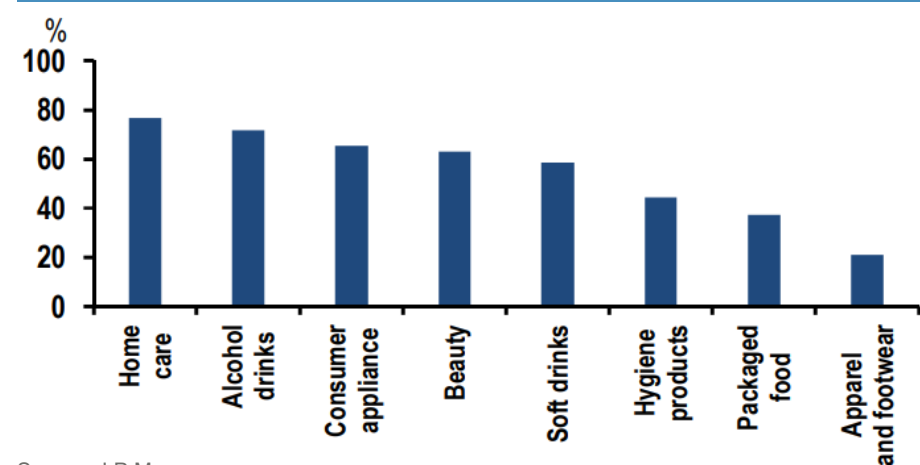
China's share of global exports

%, sa



Source: WTO, J.P. Morgan

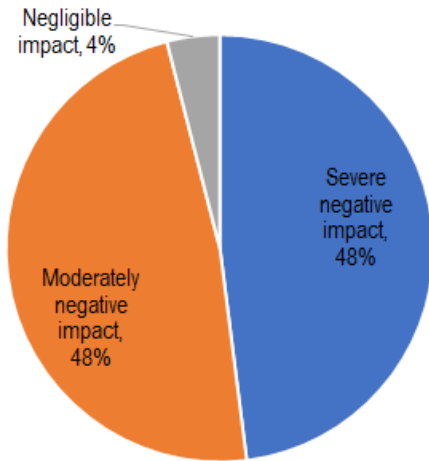
From Made-in-China to Made-for-China



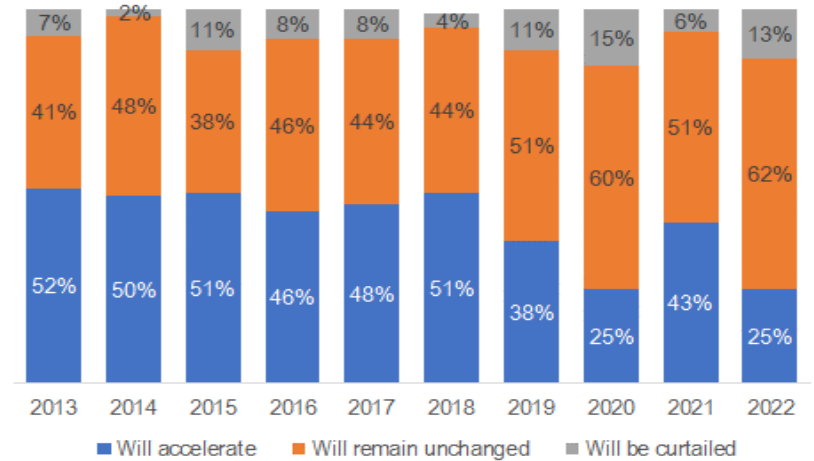
Source: J.P. Morgan

...but sharp deterioration in US business sentiment toward China

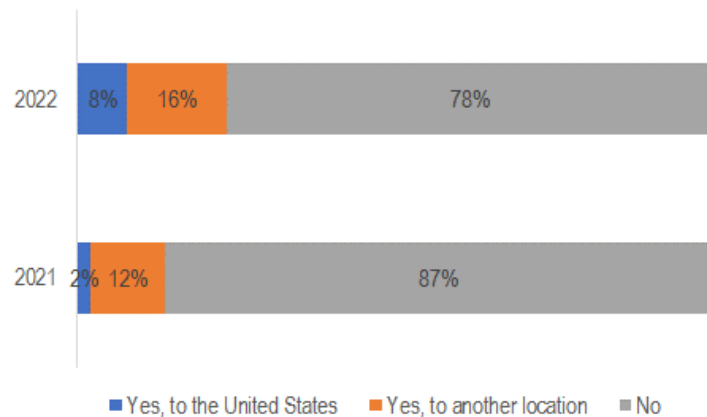
What impact have China's COVID control measures had on your company's existing China business?



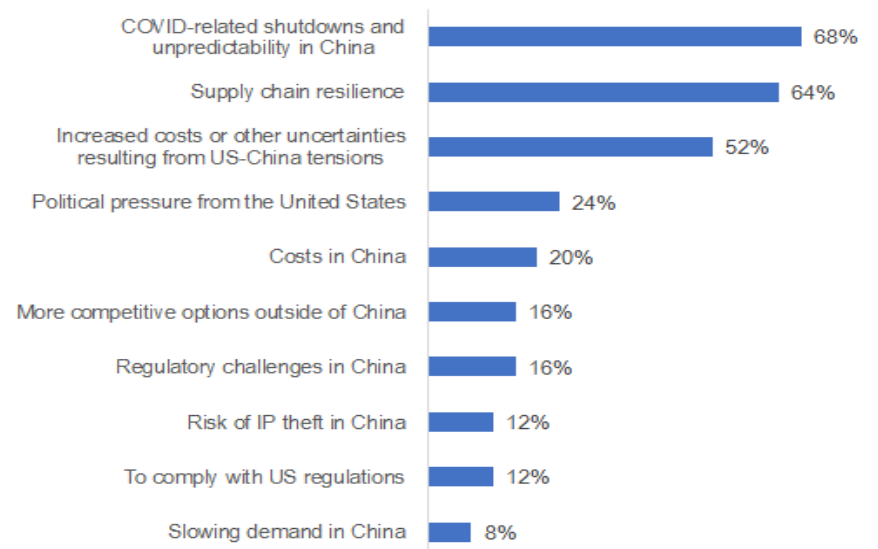
Resource commitment for next 12 months



Has your company moved any segments of its supply chain out of China in the past 12 months?

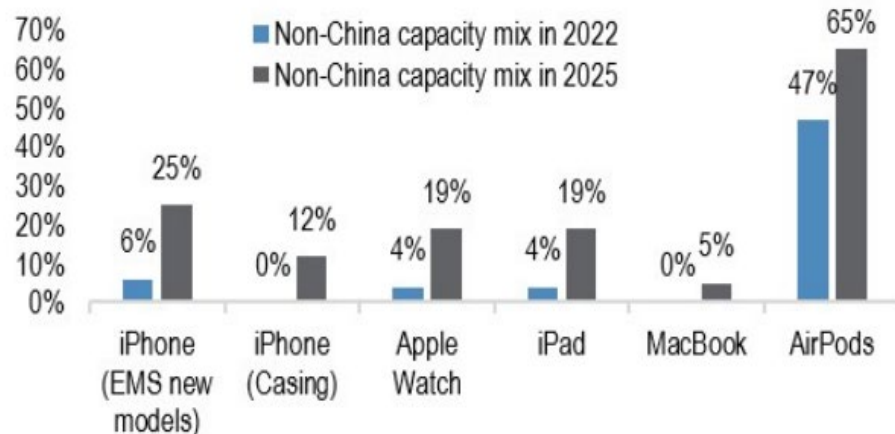


What were the reasons for moving supply chains to another location?



Made in China 2025 at risk with 25% of Apple products to be manufactured outside of China by 2025 but some critical products supply chains remain very concentrated

Apple products' geographic allocation (22E vs 25E)



Source: Refinitiv Eikon Datastream, Bloomberg Finance L.P., J.P. Morgan.

Some critical products' supply chains remain very concentrated

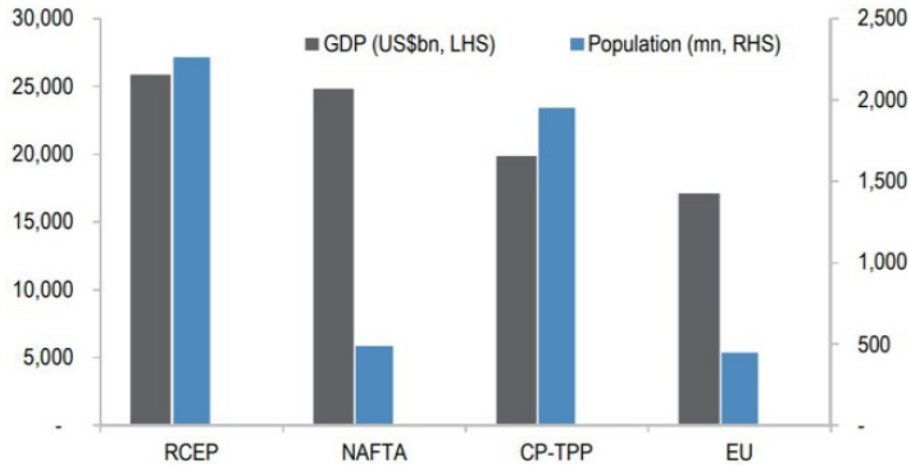
Semiconductor wafer fab capacity % of global

	US	CN	TW	KR	JP	EU	ROW
Analog	19	17	3	5	27	22	7
Logic, <10nm	0	0	92	8	0	0	0
Logic, 10-22nm	43	3	28	5	0	12	9
Logic, 28-45nm	6	19	47	6	5	4	13
Logic, >45nm	9	23	31	10	13	6	7
Memory	5	14	11	44	20	0	4
Total	13	16	20	19	17	9	7

Source: SIA

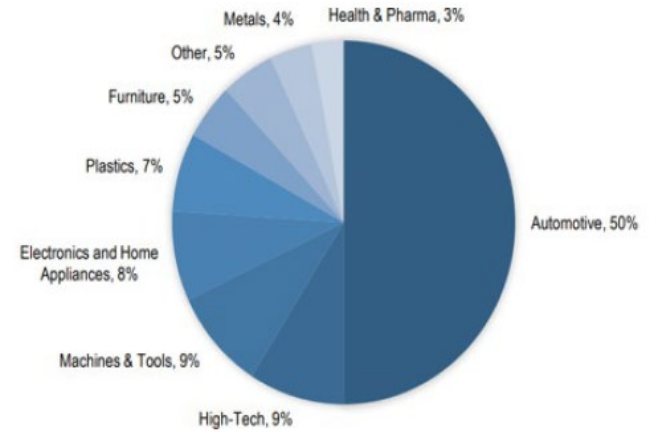
Mexico, ASEAN and India: Key beneficiaries of friend-shoring

Population and GDP size of largest FTAs globally



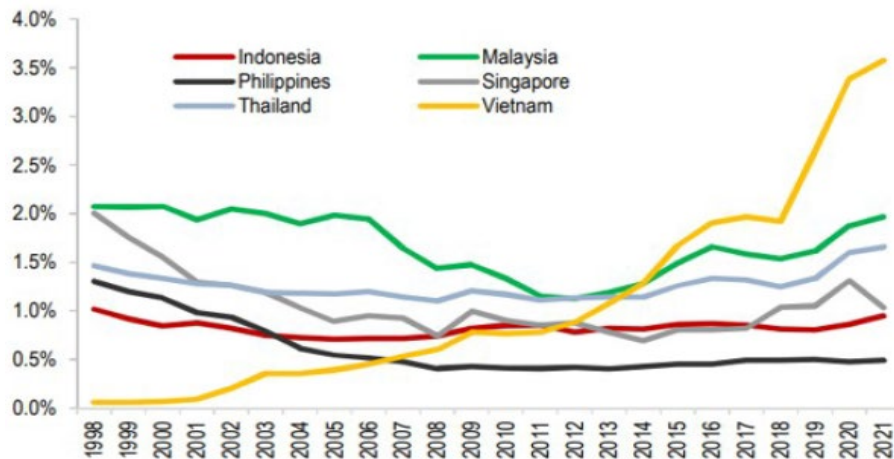
Source: CEIC Data, World Bank Data J.P. Morgan.

Share of Nearshoring by Industry, % of total



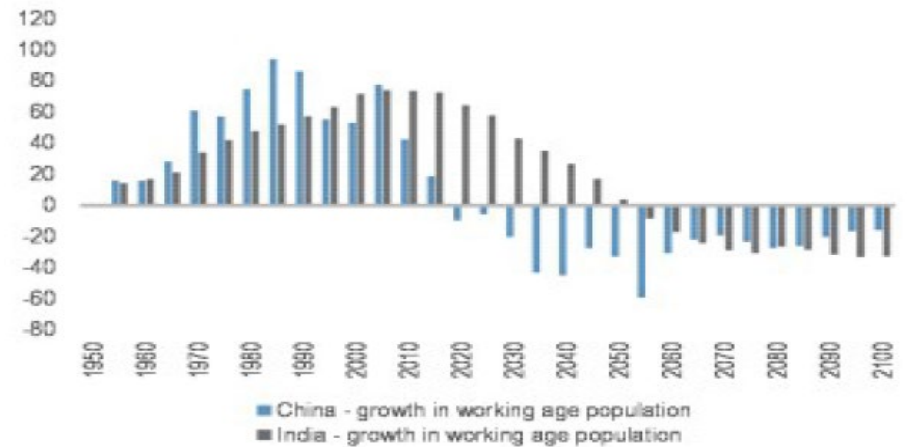
Source: CBRE as of 1Q22.

ASEAN countries' shares in the value of US imports (%)



Source: CEIC Data, J.P. Morgan.

India may benefit from a demographic advantage

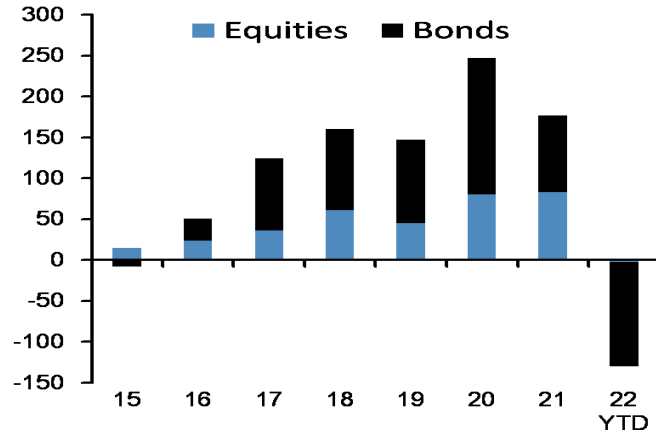


Source: J.P. Morgan, UN Population Division. * Working age – 15-65 years.

Foreign portfolio exposure to China is declining

Net purchases of onshore Chinese equities and bonds by foreign investors

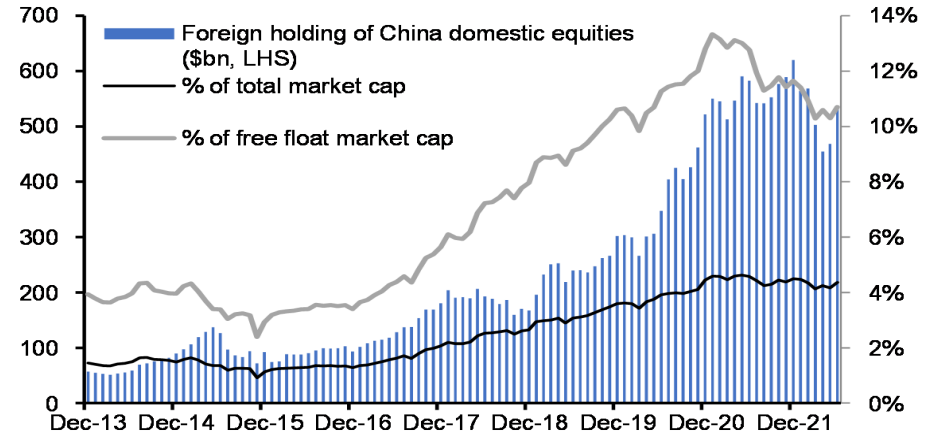
In \$bn



Source: SAFE, HKEX, CCDC, SHCH, J.P. Morgan.

Foreign holdings of Chinese domestic equities

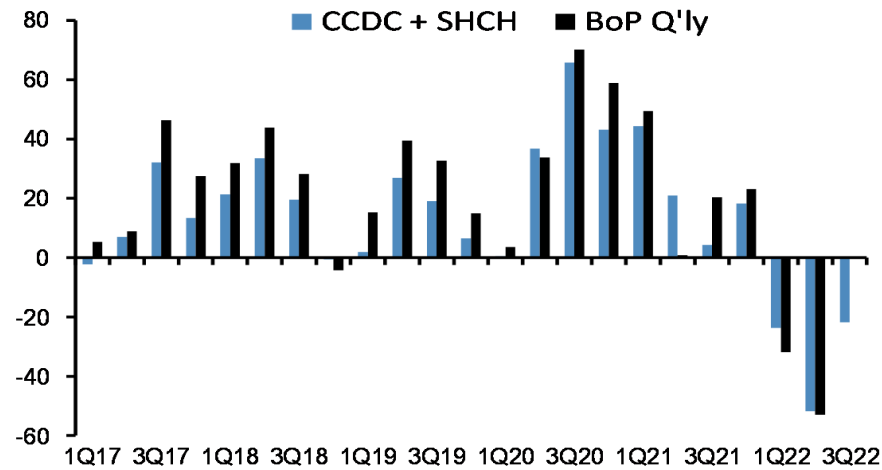
In \$bn and as % of total market cap and free float market cap.



Source: WIND, J.P. Morgan QDS

Net purchase of onshore Chinese bonds by foreign investors

In \$bn

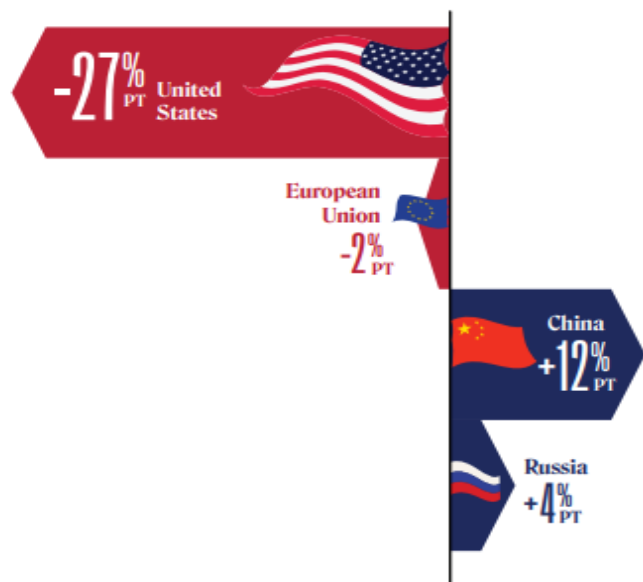


Source: SAFE, CCDC, SHCH, J.P. Morgan.

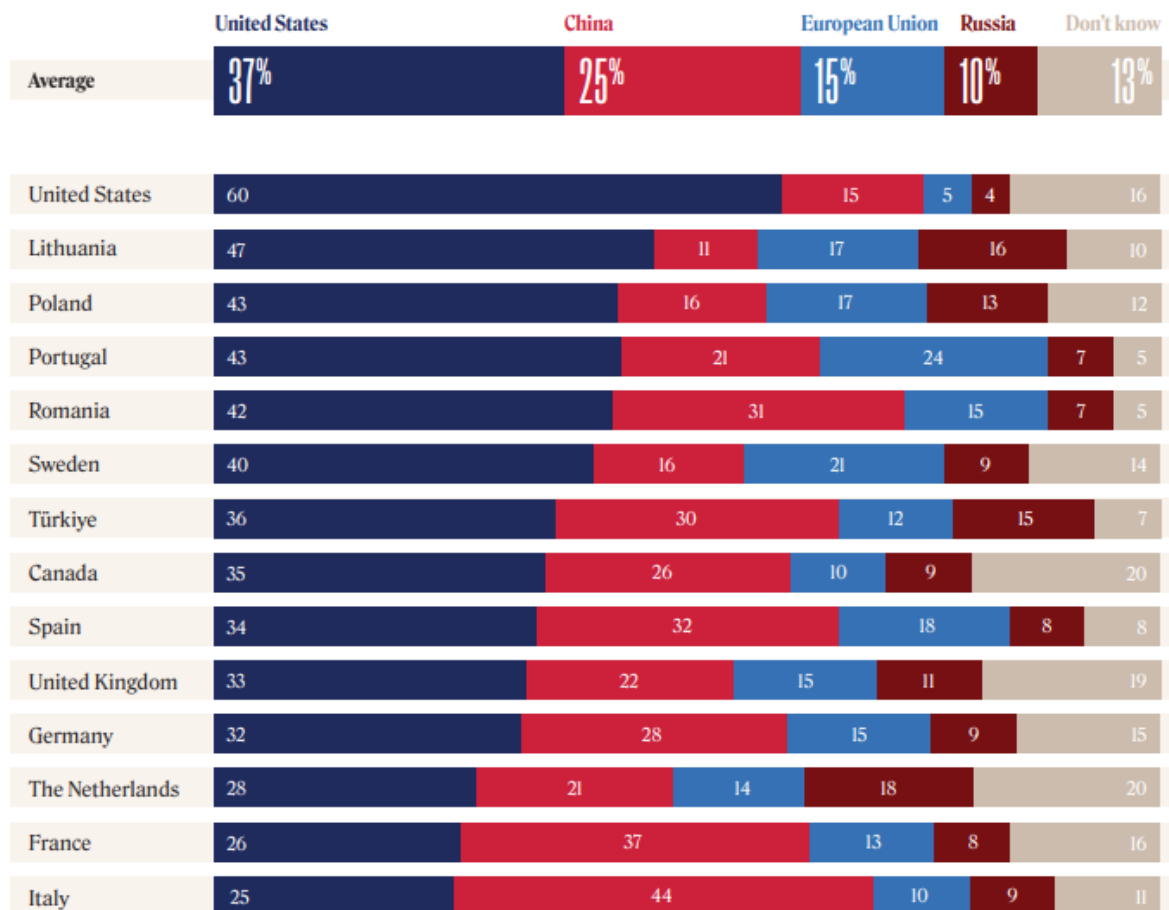
Europeans expect China to be more influential than the US on global affairs in 5 years

Current sentiment minus views 5 years from now

US' global influence is expected to drop significantly in the next five years, with 37% expecting the country to be the most influential then compared to 64% now. The EU's influence will remain relatively steady (from 17% to 15%) while China's influence will nearly double (from 13% to 25%).



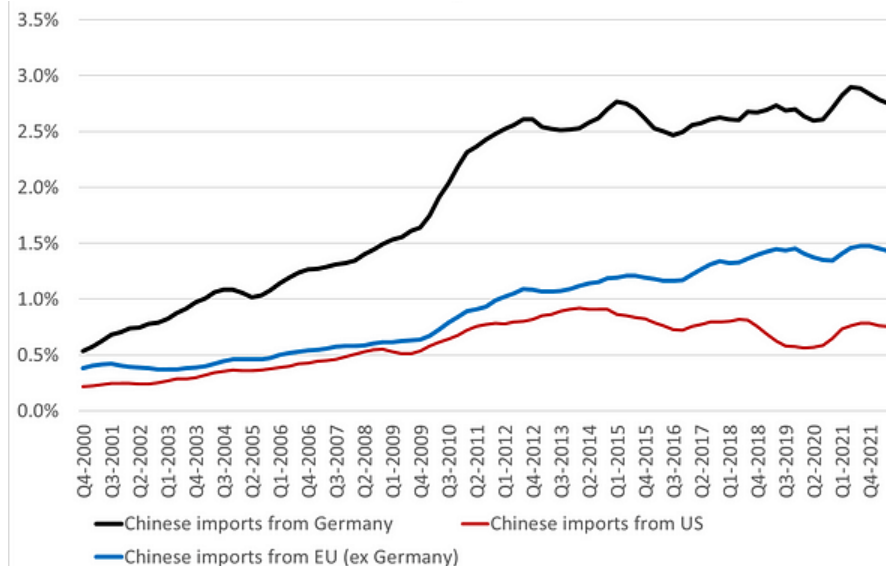
Which following actors will be most influential in global affairs in next five years?



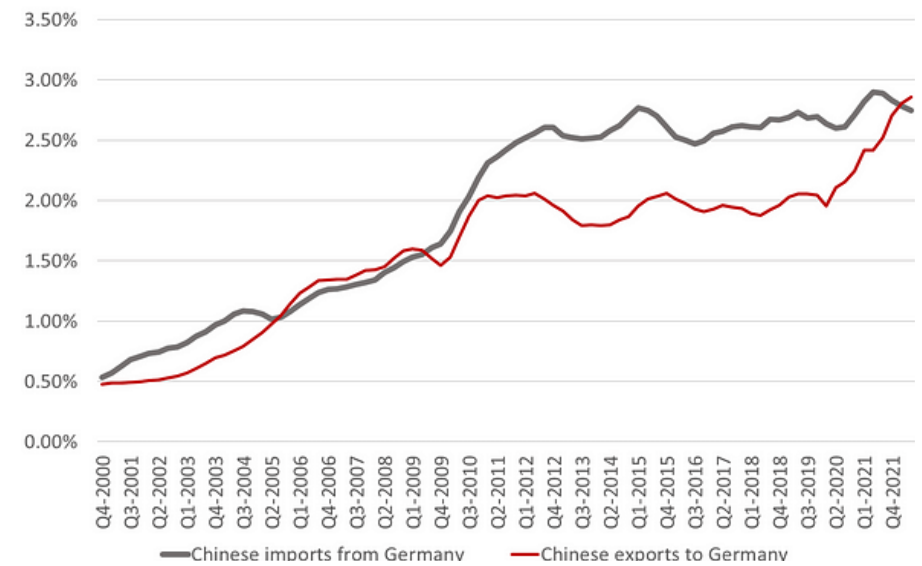
Source for all charts: Transatlantic Trends 2022, GMFUS

China is a vital market for German industrial exporters, but exports have been basically flat since mid-2012

Exports to China (measured by Chinese imports) vs the exporting country's GDP



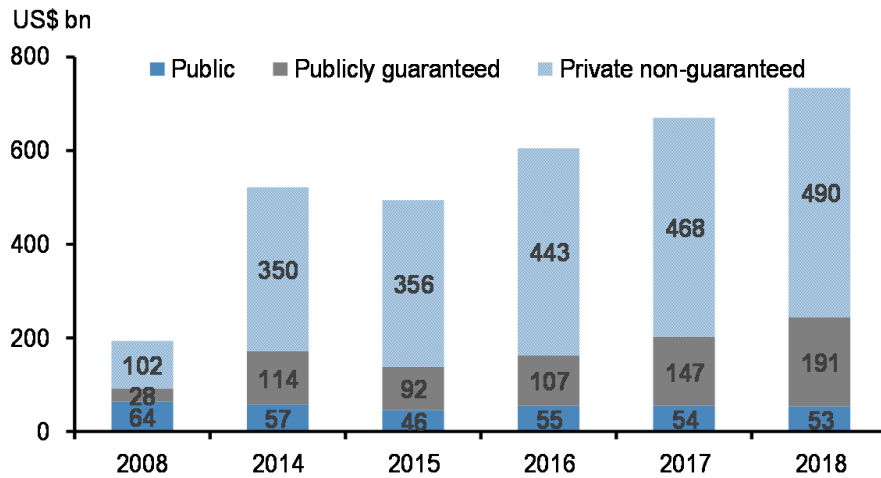
China's trade with Germany, Chinese trade data as a % of German GDP



Source for both charts: Adam Tooze Chartbook #168 (Brad Setser)

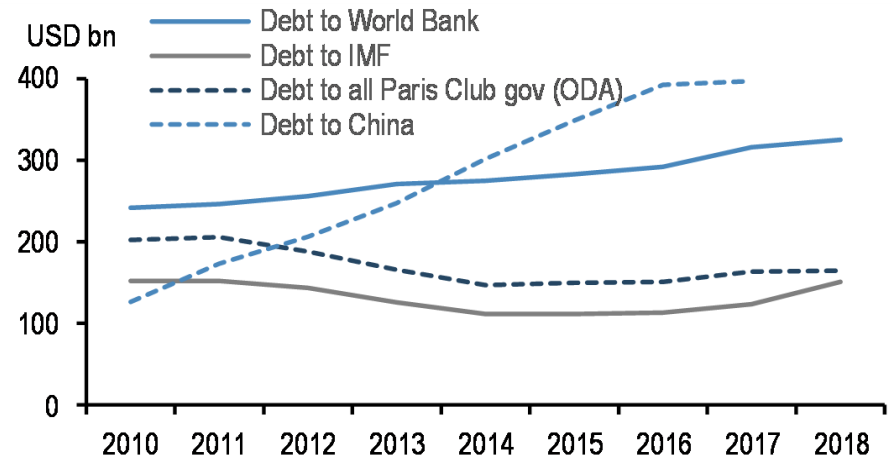
China's rise as an external creditor to become the largest lender to low-income EM countries

China's rise as an external creditor



Source: World Bank, J.P. Morgan

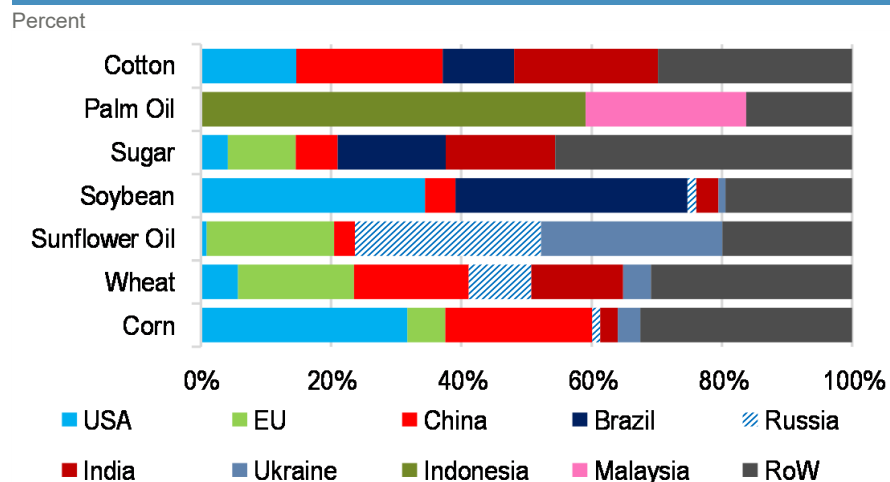
External public debt by developing countries



Source: World Bank, Paris Club, Research paper on China's Overseas Lending by Horn, Reinhart and Trebesch (2019), J.P. Morgan. Note: Data for debt to China available only to end 2017

China's commodity holdings have been on the rise since 2019

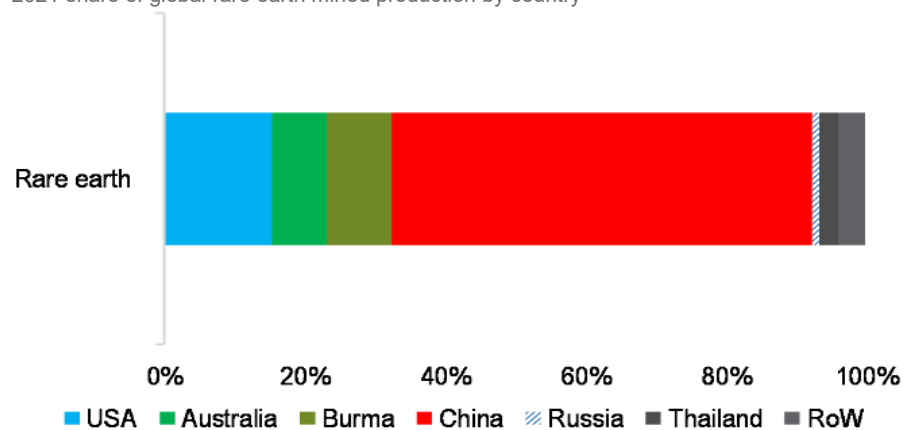
Share of global agricultural production by country



Source: USDA

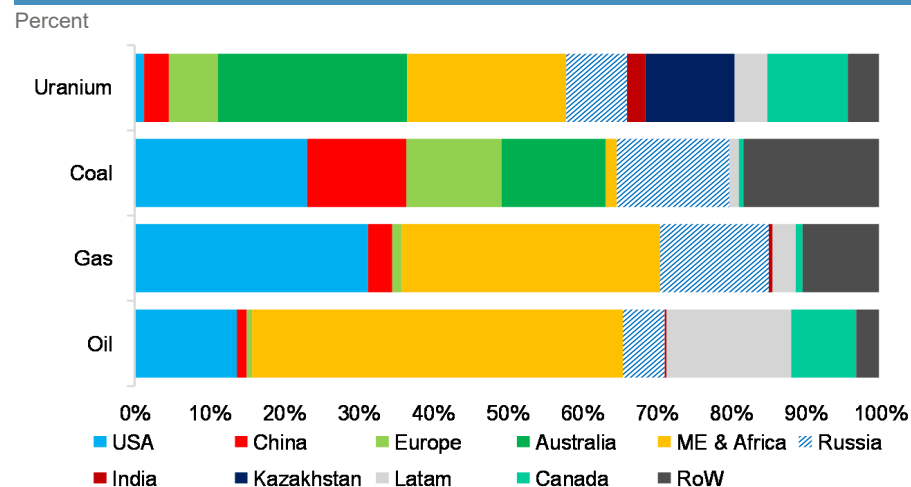
China has spent the last 30 years building a monopoly over the rare earth sector

2021 share of global rare earth mined production by country



Source: Bloomberg Finance L.P., PBoC, J.P. Morgan

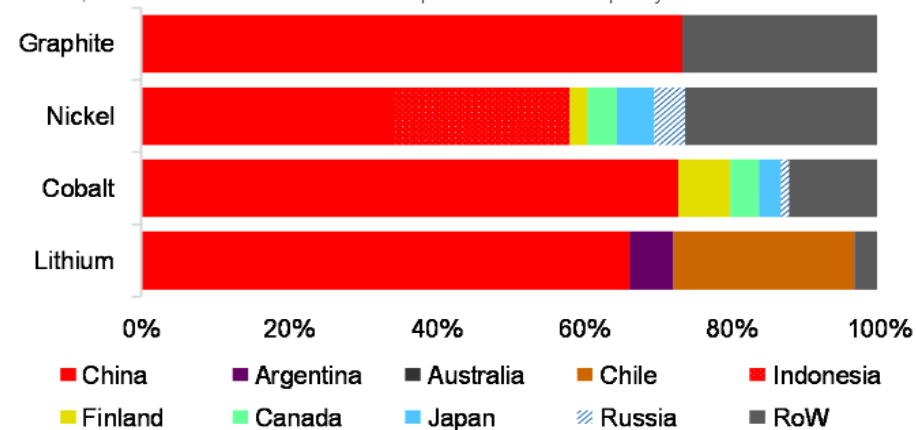
Share of global energy reserves by country



Source: BPSR, IAEA, EIA

Share of global refining of battery metals by country

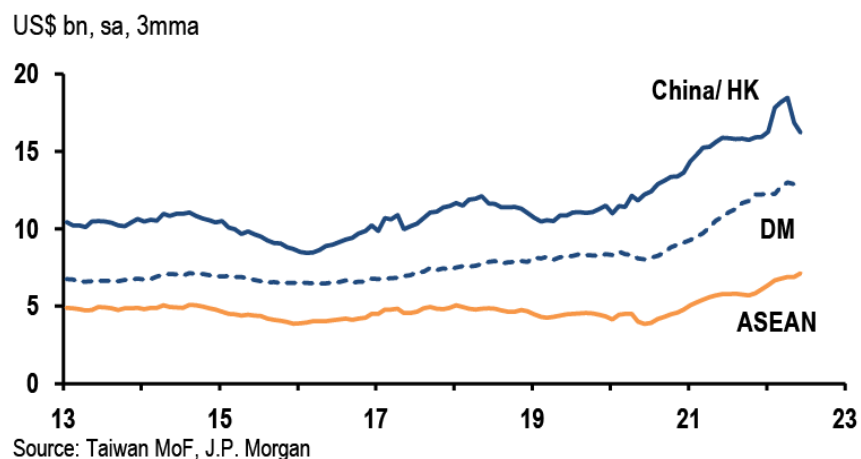
Percent; China controls 97% of Indonesian processed nickel capacity



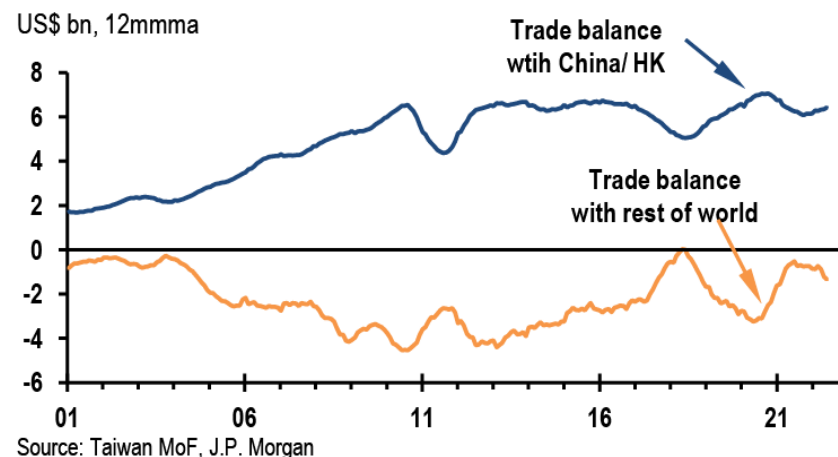
Source: Wood Mackenzie

Taiwan's economic dependence on China has grown, so has the potential for damage

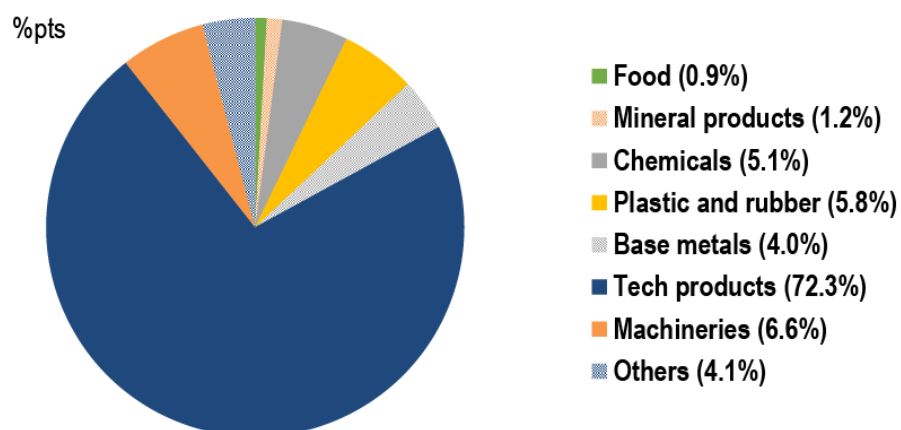
Taiwan export by major destinations



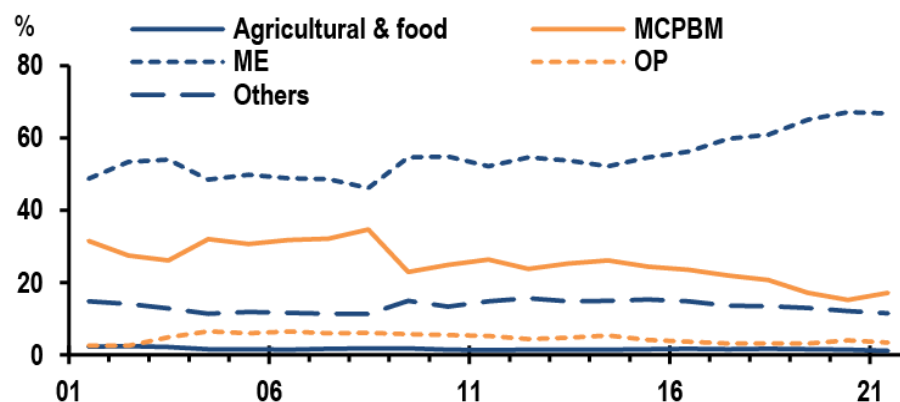
Taiwan trade balance breakdown



Breakdown of Taiwan exports to China / HK

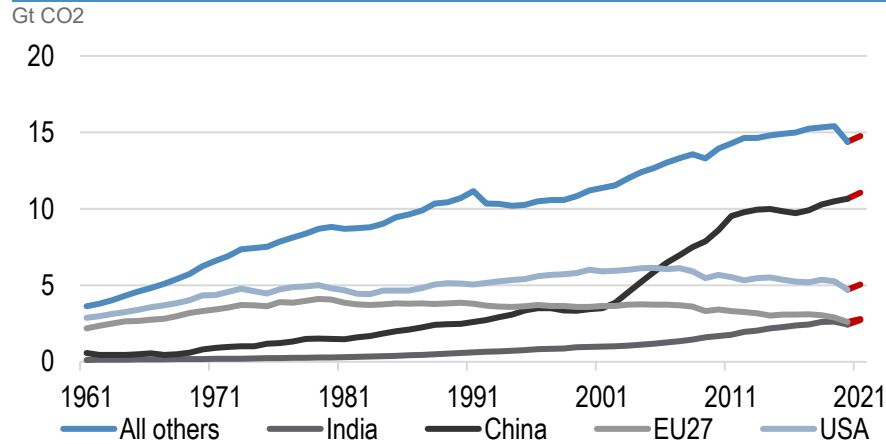


Breakdown of Taiwan's imports from mainland China



Acceleration of Net Zero pledges by countries and corporates has been accompanied by record volatility in energy markets with CO2 emissions yet to peak for many countries

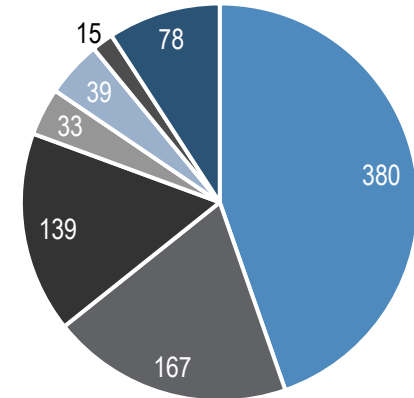
Annual Fossil CO2 Emissions and Latest 2021 Projections



Source: J.P. Morgan. Based on data from the Global Carbon Budget.
Note: 2021 data highlighted in red are projections.

Decarbonization targets are diversified, but Net Zero dominates

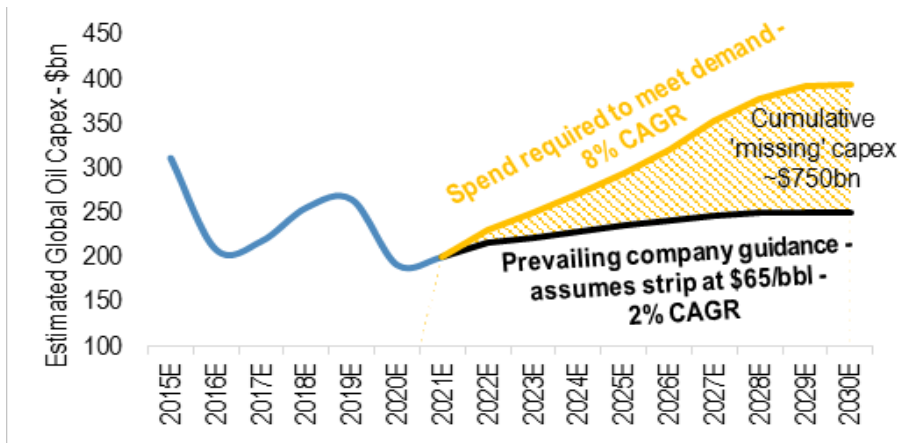
- Net Zero
- Carbon Neutrality
- Emissions reduction target
- Climate Neutrality
- Science-based Target
- Zero Emissions
- Other



Source: J.P. Morgan based on Net Zero Tracker

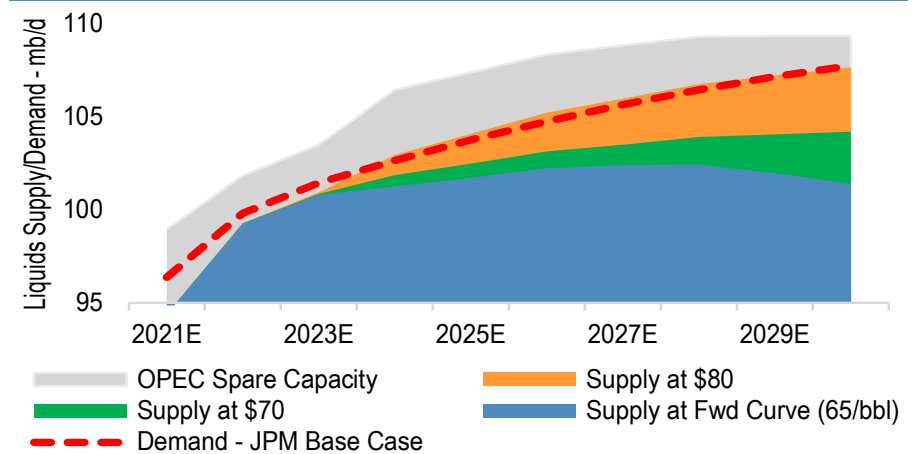
Growing demand recovery, inflation and sluggish investment growth suggest that global oil capex needs to rise by at least ~\$750bn to 2030 to meet demand

Global Oil Capex needs to rise by a cumulative \$750bn to 2030 to meet demand (35% above prevailing spend)...



Source: J.P. Morgan estimates

LT \$80/bbl Brent (real) is the marginal price needed to drive a higher capex/volume response and balanced market in 2024+



Source: J.P. Morgan estimates; JPMe = Equities Supercycle supply scenario

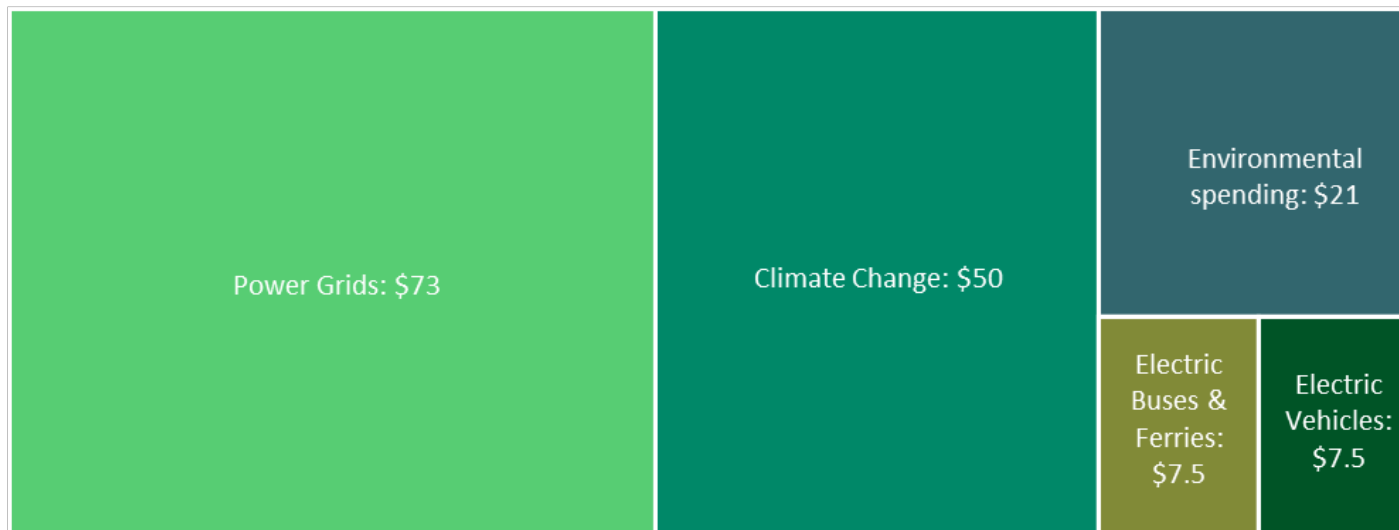
Passage of Inflation Reduction Act and Bipartisan Infrastructure Law point to a new focus on US industrial policy and energy security

Breakdown of the Infrastructure Reduction Act's (IRA) Climate-related spending in US \$billions



Source: J.P. Morgan Strategic Research, Committee for a Responsible Federal Budget, August 2022; planzero.io

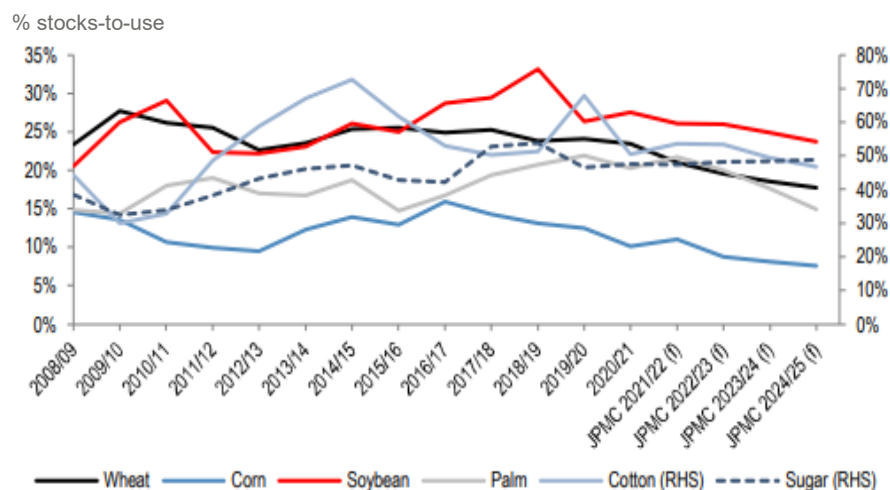
Breakdown of the Bipartisan Infrastructure Law's (BIL) Climate-related spending in US\$ billions



Source: J.P. Morgan Strategic Research, [The White House](#)

Upside for key commodity markets while declining agricultural inventory availability appears entrenched with food security at a breaking point

Trend of declining agricultural inventory availability appears entrenched across most markets over the medium term



Source: USDA, J.P. Morgan Commodities Research (STU for world-ex-China included for wheat and corn)

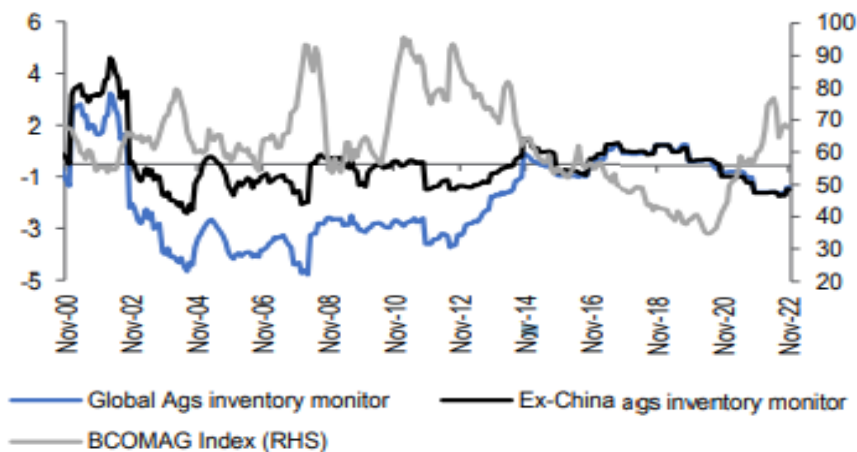
J.P. Morgan key commodity forecasts

	2023E	2024E
Energy		
WTI crude (US\$/bbl)	83	92
Brent Crude (US\$/bbl)	90	98
Precious Metals		
Gold (US\$/oz)	1,785	1,918
Silver (US\$/oz)	22.59	26.83
Base Metals		
Aluminum (US\$/metric ton)	2,388	2,900
Copper (US\$/metric ton)	7,900	9,125
Nickel (US\$/metric ton)	22,250	25,250
Zinc (US\$/metric ton)	3,025	3,388
PGMs		
Platinum (US\$/oz)	1,070	1,285
Palladium (US\$/oz)	1,738	1,513

Source: Bloomberg Finance L.P., J.P. Morgan Commodities Research. *Prices and forecasts as of 28 November 2022.

Our commodity inventory monitor continues to flag tightness across global and tradeable (ex-China) stocks

Z-scores of agri commodity inventories as days of use, RHS: Index

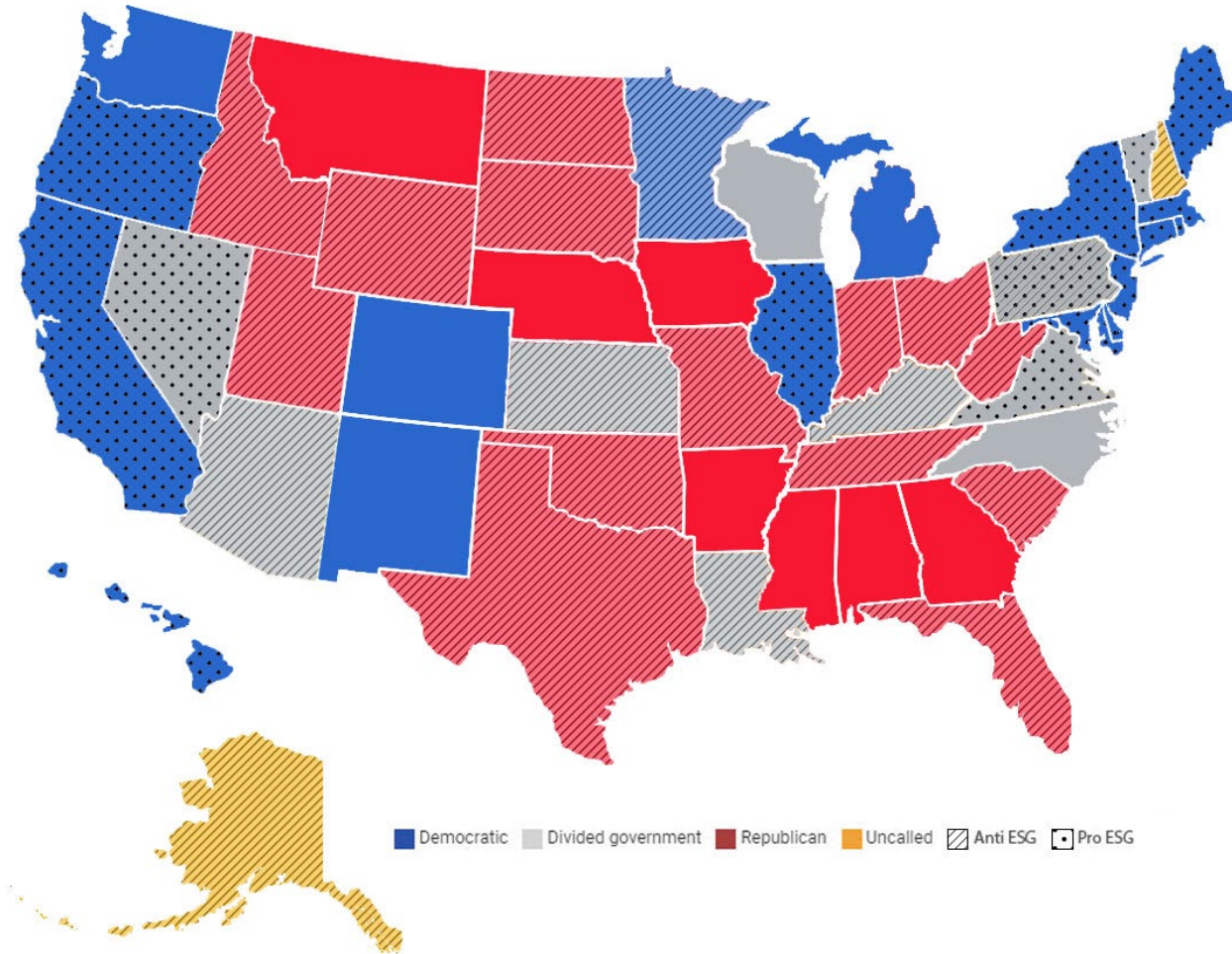


Source: USDA, Bloomberg Finance L.P., J.P. Morgan Commodities Research

“Bifurcated” approach to ESG at state-level as midterms yield four new Democrat Trifectas – MD, MA, MN and MI – but 20 states are actively pursuing anti-ESG policies

State government trifectas and pro/anti ESG legislation

Pro/Anti ESG categorization determined by majority of legislation proposed using Ropes & Gray data as of October 2022; Ballotpedia data on Trifectas as of November 21, 2022

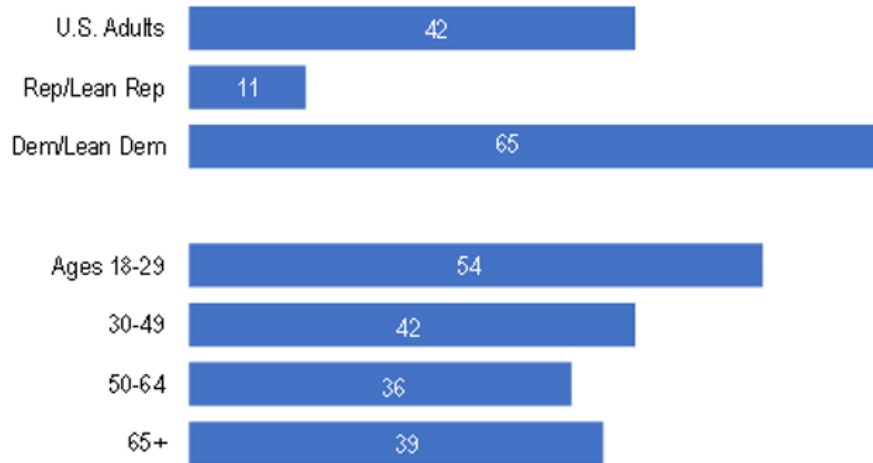


Source: J.P. Morgan Strategic Research, Ropes & Gray, Ballotpedia

Support for climate change as a top policy priority differs widely based on political ties and generational lines while US public pension plans generally support ESG resolutions

Democrats, younger Americans identify dealing with climate change as a top policy priority

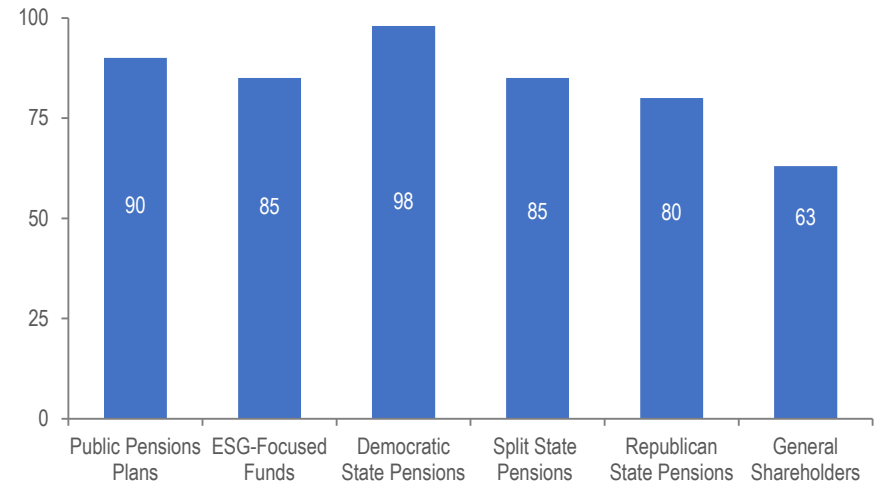
% who say 'dealing with climate change' should be a top priority for the president and Congress to address this year



Source: Pew Research Center, Survey of U.S. Adults conducted January 2022

Strong support for ESG votes from US Public Pension Plans in 2021 irrespective of political affiliation

% resolutions supported



Source: Morningstar

Growth and inflation outlook and forecasts

	Real GDP			Real GDP						Consumer prices			
	% over a year ago			% over previous period, saar						% over a year ago			
	2022	2023	2024	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	2Q22	4Q22	2Q23	4Q23
United States	2.0	1.0	0.4	-0.6	2.9	<u>1.5</u>	1.0	0.8	0.5	8.6	7.4 ↑	3.8 ↓	2.8 ↓
Canada	3.6	1.0	1.5	3.2	2.9	<u>1.0</u>	0.3	0.3	0.8	7.5	7.0	2.5	2.0
Latin America	3.6	0.7	1.2	3.9 ↑	<u>2.8</u>	0.4	-0.3	0.0 ↓	0.5	9.8 ↓	7.9 ↓	5.4 ↓	5.3
Argentina	5.1	-0.5	-2.0	4.2	<u>6.9</u>	-4.5	-1.0	-2.0	-2.0	61.8	94.0	111.3	111.6
Brazil	3.0	0.2	1.4	4.0	1.6	<u>-0.4</u>	-1.0	-0.6	0.8	11.9	6.0 ↓	3.0 ↓	5.0 ↓
Chile	2.7	-1.2	2.5	0.6	-4.6	<u>2.3</u>	-3.0	-2.0	0.5	11.5	12.8 ↑	8.1 ↑	5.0
Colombia	8.0	0.9	2.0	5.2	6.4	<u>-2.0</u>	-2.0	2.0	1.5	9.3	12.4	11.4	7.5
Ecuador	2.2	2.3	2.5	0.5	<u>2.5</u>	2.0	2.0	2.5	3.3	3.5	3.8 ↓	2.2 ↓	2.4 ↓
Mexico	3.1	1.8	1.0	4.7	<u>3.6</u>	<u>2.5</u>	1.0	1.0	0.5	7.8	8.1 ↓	6.6	5.4 ↑
Peru	2.5	2.3	2.5	2.2 ↑	4.8 ↑	3.5 ↑	2.3 ↓	1.8 ↓	1.0	3.6 ↓	7.9	5.5	3.8
Uruguay	5.2	1.9	2.0	4.3	<u>0.8</u>	1.5	2.5	2.0	1.0	9.3	8.4 ↓	6.8 ↓	6.4 ↓
Asia/Pacific	3.1 ↓	3.3	4.1	-1.6	<u>5.2</u> ↑	2.7	4.5	2.8	2.5 ↓	3.3	3.7	2.7	2.6
Japan	1.2 ↓	1.6	0.4	4.5 ↓	-0.8 ↑	<u>3.5</u>	2.0	1.2	0.5	2.4	3.7	2.9	2.7
Australia	3.6 ↓	2.5 ↓	2.5	3.5 ↓	2.6	<u>2.4</u>	2.5 ↓	2.6 ↓	1.8 ↓	6.1	7.6	5.6	3.5
New Zealand	2.2 ↑	2.0 ↓	2.1 ↓	7.0	<u>2.2</u> ↑	<u>1.7</u> ↓	1.8 ↓	0.5 ↓	2.3 ↓	7.3	7.2	5.6	3.4
EM Asia	3.5	3.7	5.1	-3.4	6.7	<u>2.5</u>	5.2	3.1	3.0	3.4	3.5	2.5	2.5
China	2.9	4.0	6.0	-7.3	9.0	<u>2.4</u>	5.9	3.0	3.0	2.2	2.4	1.7	1.9
India	6.9	5.0	5.0	6.5	2.0	<u>5.5</u>	5.4	5.3	5.1	7.3	6.6	5.0	5.5
Ex China/India	3.5	2.4	2.6	2.8	2.7	<u>1.5</u>	3.1	2.5	2.2	4.5	5.0	3.4	2.6
Hong Kong	-2.9	2.7	3.9	4.1	-10.0	<u>9.0</u>	2.5	3.5	4.2	1.5	2.1	2.6	2.4
Indonesia	4.8	3.1	4.1	7.8	-0.7	<u>2.0</u>	4.0	3.8	3.3	3.8	5.4	3.6	2.6
Korea	2.6	1.4	1.7	3.0	1.3	<u>-1.0</u>	3.0	1.5	1.0	5.4	5.2	3.6	2.9
Malaysia	9.2	3.7	2.4	14.7	7.7	<u>0.0</u>	3.5	3.2	3.0	2.8	3.7	2.8	2.2
Philippines	7.0	4.6	3.6	-0.5	12.3	<u>4.0</u>	4.0	3.8	3.8	5.5	7.7	5.4	2.6
Singapore	3.2	1.3	0.6	-0.6	4.6	<u>1.2</u>	1.3	1.0	0.5	5.9	6.4	4.7	2.8
Taiwan	2.9	2.0	2.4	-9.2	7.5	<u>2.2</u>	2.3	1.8	1.5	3.5	2.6	1.7	2.0
Thailand	3.1	2.7	2.9	2.8	5.0	<u>1.8</u>	3.2	2.7	2.5	6.5	6.3	3.3	2.2
Western Europe	3.5 ↑	0.4 ↑	0.8	2.9 ↓	1.0 ↑	-0.8 ↑	-0.6 ↑	1.2	1.1 ↑	8.2	10.2	6.9	3.1
Euro area	3.4 ↑	0.6 ↑	0.9	3.2 ↓	1.3 ↑	-0.5 ↑	-0.5 ↑	1.5	1.3 ↑	8.0	10.0	6.5	2.8
Germany	1.9 ↑	0.3 ↑	0.9	0.4	1.6	-0.5 ↑	-1.0 ↑	1.5	1.0	8.3	11.5	8.4	3.2
France	2.5	0.3 ↑	0.9	1.9	0.7	-0.5	-1.0 ↑	1.5	1.0	5.9	7.2	6.0	3.6
Italy	3.8	0.5 ↑	0.9 ↓	4.6	1.9	-1.0 ↑	-1.0 ↑	1.3 ↓	1.3 ↓	7.4	12.3	7.2	0.9
Spain	4.6 ↑	1.1 ↑	1.4 ↓	6.0	0.9	0.0 ↑	0.0 ↑	1.8 ↓	1.8 ↓	8.9	6.6	3.5	3.0
Norway	3.6	0.5	0.9	5.1	3.3	<u>0.0</u>	-1.5	0.3	0.8	5.8	6.8	5.3	2.7
Sweden	2.9	-0.1	0.6	2.9	2.4	<u>-0.8</u>	-2.0	0.0	0.8	7.4	11.6	9.4	4.3
United Kingdom	4.3	-0.6	0.3	0.9	-0.7	<u>-2.2</u>	-0.8	0.0	0.4	9.2	11.0	8.3	4.6
EMEA EM	2.2	0.6	2.0	-7.0	1.6 ↑	0.1 ↓	1.1	2.2	0.8	23.8	24.3 ↓	13.7 ↓	14.4 ↓
Czech Republic	2.7	0.8	1.9	1.5	-0.6	<u>0.8</u>	0.0	2.3	2.0	15.8	15.6 ↑	8.3 ↑	6.0 ↓
Hungary	5.2	0.9	2.2	3.2 ↓	-1.6 ↑	<u>0.5</u>	-0.3	2.0	2.8	10.6	22.8 ↑	22.8 ↑	10.0 ↑
Israel	6.4	2.6	3.0	7.3	2.1	<u>2.8</u>	2.5	2.3	2.0	4.2	5.0	3.7	2.4
Poland	6.0	0.7	2.5	-9.3	4.1	<u>0.8</u>	-0.5	1.5	2.3	13.9	17.7	14.0	8.2
Romania	5.0	3.3	4.5	5.1 ↓	5.2 ↓	<u>2.0</u>	2.8	3.6	4.1	14.4	16.4	11.6	10.9
Russia	-2.8	-1.2	2.0	-22.6	0.5	<u>-2.0</u>	-0.5	2.0	2.0	16.9	12.4	3.3	5.0
South Africa	2.4 ↑	0.7 ↑	0.6 ↓	-2.9	6.6 ↑	-1.5 ↓	1.0	1.0 ↑	0.5	6.6	7.4	5.6	4.6
Turkey	5.1	2.1	1.0	7.7	-0.5	<u>2.0</u>	5.3	3.2	-5.1	74.1	79.2 ↓	44.5 ↓	54.9 ↓
Global	2.9	1.7	2.1 ↑	-0.3 ↓	3.3 ↑	1.3 ↑	1.9 ↑	1.6 ↓	1.4	7.3 ↓	7.5	4.6 ↓	3.5 ↓
Developed markets	2.6	0.9 ↑	0.6	1.5	1.8 ↑	0.9 ↑	0.5 ↑	1.0	0.8 ↑	7.6	8.0	4.8 ↓	2.9 ↓
Emerging markets	3.4 ↑	2.9	4.2	-3.0	5.6 ↑	1.9 ↓	4.0	2.6	2.4	6.9	6.9	4.4 ↓	4.4 ↓
Emerging ex China	3.7	1.9	2.5	1.1	2.3 ↑	1.5 ↓	2.1	2.3	1.9	11.4	11.1 ↓	6.9 ↓	6.8 ↓
Global — PPP weighted	3.4	2.1	2.5	-0.9	3.6 ↑	3.5 ↑	2.2 ↑	2.0	1.9 ↑	8.2 ↓	8.4	5.2 ↓	4.4 ↓

Source: J.P. Morgan as of December 9, 2022. Note: Any long-form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research material is Mainland China; Hong Kong SAR (China); Taiwan (China); and Macau SAR (China).

EM Fiscal Balance and Current Account Forecasts

	Fiscal Balance (% of GDP)			CA Balance (% of GDP)		
	2021	2022	2023	2021	2022	2023
Emerging markets	-3.8	-3.9	-3.8	1.7	1.4	1.0
EM ex. China	-4.4	-4.2	-4.3	1.7	0.6	0.3
Latin America	-4.2	-4.2	-5.8	-1.6	-2.4	-2.0
Argentina	-3.8	-4.1	-4.1	1.6	-0.7	-0.6
Brazil	-4.4	-6.0	-9.6	-1.9	-2.6	-1.7
Chile	-7.6	1.4	-3.2	-6.4	-6.9	-3.4
Colombia	-7.1	-5.6	-4.3	-5.6	-6.1	-5.0
Ecuador	-3.5	-2.3	-2.1	2.8	2.6	2.2
Mexico	-3.3	-3.5	-3.7	-0.4	-1.1	-2.3
Peru	-2.5	-2.2	-2.5	-2.4	-3.8	-1.8
Emerging Asia	-4.0	-4.2	-3.6	2.2	1.9	1.6
China	-3.1	-3.6	-3.2	1.8	2.2	1.7
Hong Kong	1.0	-1.9	1.4	7.2	4.1	0.2
India	-10.5	-10.2	-10.0	-1.3	-3.5	-3.0
Indonesia	-5.3	-2.9	-2.8	0.3	0.8	-0.1
Korea	-1.5	-2.1	0.6	4.9	2.0	2.8
Malaysia	-6.5	-6.2	-5.5	3.8	2.0	2.6
Philippines	-9.0	-7.5	-5.5	-2.6	-4.4	-3.9
Singapore	-2.2	-0.5	1.0	18.0	19.1	12.3
Taiwan	-1.5	-1.2	-0.9	14.7	14.3	14.4
Thailand	-4.7	-4.8	-3.8	-2.1	-4.0	0.5
EMEA EM	-2.3	-2.4	-2.9	2.3	1.9	0.6
Czech Republic	-5.9	-4.5	-4.7	-0.3	-4.2	-3.2
Hungary	-6.8	-6.2	-4.3	-4.0	-6.4	-4.6
Israel	-4.4	-0.1	-0.9	4.4	3.4	3.5
Poland	-1.9	-2.7	-5.7	-1.4	-4.2	-3.1
Romania	-7.1	-6.0	-4.6	-7.1	-9.1	-8.6
Russia	0.4	-0.5	-1.2	6.8	10.4	5.1
South Africa	-5.1	-4.9	-5.1	3.3	0.3	-0.9
Turkey	-2.7	-3.7	-3.3	-1.8	-5.4	-2.5
Other EMEA EM						
Angola	3.1	3.5	1.6	12.4	11.8	7.1
Ghana	-12.4	-7.8	-5.2	-3.1	-3.2	-4.0
Kazakhstan	-5.0	-1.2	-2.1	-4.0	3.5	3.2
Kenya	-8.2	-8.0	-6.7	-5.5	-5.9	-6.0
Nigeria	-5.1	-6.4	-7.2	-0.5	2.9	1.6
Serbia	-4.1	-4.0	-3.9	-4.4	-9.7	-9.0
Ukraine	-3.3	-9.3	-9.4	-1.6	-5.7	-5.6
Egypt	-7.2	-6.3	-6.3	-4.4	-3.5	-3.3
GCC	-1.0	5.9	4.3	9.3	16.9	12.8
Saudi Arabia	-2.3	3.0	2.1	5.3	15.0	10.9
UAE	0.3	7.4	4.9	11.6	13.9	10.6

US Treasury Yields Forecasts

J.P. Morgan interest rate forecast; %

	Actual	4Q22	1Q23	2Q23	3Q23	4Q23
	9-Dec-22	31-Dec-22	31-Mar-23	30-Jun-23	30-Sep-23	31-Dec-23
Rates (%)						
Effective funds rate	3.83	4.35	4.85	4.85	4.85	4.85
SOFR*	3.80	4.10	4.60	4.80	4.80	4.80
3-mo LIBOR	4.74	4.90	5.10	5.10	5.10	5.10
2-yr Treasury	4.33	4.65	4.50	4.30	4.10	3.80
3-yr Treasury	4.08	4.45	4.30	4.10	3.90	3.65
5-yr Treasury	3.76	4.25	4.15	4.00	3.80	3.45
7-yr Treasury	3.69	4.30	4.15	4.00	3.75	3.40
10-yr Treasury	3.57	4.10	4.00	3.90	3.70	3.40
20-yr Treasury	3.81	4.25	4.25	4.20	4.00	3.85
30-yr Treasury	3.55	4.05	4.05	4.00	3.85	3.75
Spreads (bp)						
Fed funds/3m Libor	91	55	25	25	25	25
Fed funds/2yr	50	30	-35	-55	-75	-105
2s/10s	-76	-55	-50	-40	-40	-40
2s/5s	-57	-40	-35	-30	-30	-35
5s/10s	-19	-15	-15	-10	-10	-5
5s/30s	-21	-20	-10	0	5	30
10s/30s	-2	-5	5	10	15	35

Source: J.P. Morgan

*1-month moving average

TIPS breakeven targets, and real yield and curve levels based on those targets*; units as indicated

	Actual	4Q22	1Q23	2Q23	3Q23
	21-Oct-22	31-Dec-22	31-Mar-23	30-Jun-23	30-Sep-23
Breakevens (bp)					
5Y	259	265	260	250	240
10Y	250	255	245	235	230
30Y	248	240	235	230	230
Real yields (%)					
5Y	1.93	1.60	1.35	1.40	1.40
10Y	1.73	1.50	1.40	1.45	1.45
30Y	1.78	1.55	1.45	1.50	1.50
Curves (bp)					
5s/10s BE	-9	-10	-15	-15	-10
10s/30s BE	-2	-15	-10	-5	0
5s/10s yld	-20	-10	5	5	5
10s/30s yld	5	5	5	5	5

* Targets for real yields are based on our nominal yield forecasts and breakeven targets
Source: J.P. Morgan

Global Commodities Price Forecasts

		08 Dec 22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	2022	2023	2024
Energy														
WTI Crude	US\$/bbl	81	82	78	82	84	88	86	90	94	99	97	83	92
Brent Crude	US\$/bbl	87	90	85	89	90	94	92	96	99	105	101	90	98
US Natural Gas (Henry Hub)	US\$/MMBtu	6.98	7.00	5.50	4.50	4.25	4.50	4.00	3.50	3.00	3.25	6.37	4.69	3.44
European Natural Gas (TTF)	Eur/MWh	157.49	125	150	130	175	165	125	100	130	115	132	155	118
Base Metals														
Aluminum	US\$/mt	2,448	2,300	2,425	2,225	2,300	2,600	2,750	2,850	2,950	3,050	2,697	2,388	2,900
Copper	US\$/mt	8,227	8,000	8,500	7,300	7,500	8,300	8,600	8,900	9,300	9,700	8,816	7,900	9,125
Nickel	US\$/mt	26,892	24,200	26,000	20,000	20,000	23,000	24,000	25,000	26,000	26,000	25,392	22,250	25,250
Zinc	US\$/mt	3,050	2,970	3,200	2,800	2,900	3,200	3,300	3,350	3,400	3,500	3,472	3,025	3,388
Precious Metals														
Gold	US\$/t oz	1,777	1,680	1,700	1,760	1,820	1,860	1,880	1,910	1,930	1,950	1,789	1,785	1,918
Silver	US\$/t oz	22.20	20.20	20.48	20.47	24.27	25.14	25.75	26.53	27.18	27.86	21.52	22.59	26.83
Platinum	US\$/t oz	1,041	950	990	990	1,100	1,200	1,250	1,290	1,300	1,300	953	1,070	1,285
Palladium	US\$/t oz	1,845	1,970	2,000	1,700	1,650	1,600	1,550	1,500	1,500	1,500	2,110	1,738	1,513
Agriculture														
Wheat	USc/bu	772	830	850	830	800	780	800	800	750	780	908	815	783
Corn	USc/bu	659	690	710	710	680	650	650	650	600	650	700	688	638
Soybeans	USc/bu	1,456	1,450	1,530	1,550	1,450	1,480	1,480	1,500	1,400	1,450	1,556	1,503	1,458
Sugar (ICE #11)	USc/lb	19.6	19.5	20.0	21.0	21.0	22.0	22.0	21.5	22.0	22.0	18.9	21.0	21.9
Cotton (ICE #2)	USc/lb	86	88	100	110	100	100	115	130	120	120	114	103	121
MDE-Bursa Palm Oil	MYR/tonne	3,996	4,000	4,500	4,700	4,800	5,200	5,500	5,500	6,000	6,500	5,150	4,800	5,875

Source: J.P. Morgan Commodities Research, 1Q22, 2Q22 and 3Q22 are actuals

FX Forecasts

Exchange rates vs. U.S dollar										JPM forecast gain/loss vs December 23*			Actual change in local FX vs USD			
Majors	Current						Spot	Forwards	Consensus**	Past 1mo	Past 3mo	YTD	Past 12mos			
	21-Nov	Mar 23	Jun 23	Sep 23	Dec 23											
EUR	1.02	0.95	↑	0.95	↓	1.00	↓	1.00	-2.3%	-5.1%	-4.8%	3.8%	2.7%	-9.9%	-9.3%	
JPY	142	140	↑	138	↑	135	↑	133	6.7%	0.6%	1.5%	4.1%	-3.6%	-18.9%	-19.7%	
GBP	1.18	1.14	↑	1.11	↑	1.08	↓	1.08	-8.5%	-9.3%	-10.0%	4.5%	-0.2%	-12.7%	-12.2%	
AUD	0.66	0.69	↓	0.70	↓	0.70	↓	0.70	5.7%	4.2%	0.0%	3.9%	-4.4%	-8.8%	-8.4%	
CAD	1.34	1.32	↑	1.35	↑	1.40	↓	1.40	-4.1%	-4.8%	-6.4%	1.6%	-3.5%	-5.9%	-5.8%	
NZD	0.61	0.62	↑	0.61	↑	0.60	↓	0.60	-2.0%	-2.2%	-6.3%	6.5%	-1.5%	-10.3%	-12.6%	
JPM USD index	132.2	133.8	↓	134.5	↓	134.1	↓	134.5	1.7%	1.9%	2.9%	-3.3%	0.9%	8.6%	8.4%	
DXY	107.8	113.5	↓	113.7	↑	110.2	↑	110.0	2.0%	4.6%	4.6%	-3.7%	-0.7%	12.7%	12.3%	
Europe, Middle East & Africa																
CHF	0.96	1.00	↑	0.98	↓	0.92	↓	0.92	4.1%	-0.7%	4.6%	4.2%	0.6%	-4.7%	-3.1%	
ILS	3.47	3.50	↑	3.45	↓	3.40	↑	3.40	1.9%	-1.2%	2.9%	1.9%	-5.8%	-10.4%	-10.7%	
SEK	10.73	12.00	↑	11.79	↓	11.00	↓	11.10	-3.3%	-5.6%	-10.3%	4.1%	-0.9%	-15.6%	-16.6%	
NOK	10.24	11.58	↓	11.37	↓	10.60	↓	10.70	-4.3%	-5.9%	-13.7%	2.9%	-5.2%	-13.9%	-12.9%	
CZK	23.8	26.00	↑	26.00	↑	26.00	↑	26.50	-10.2%	-9.0%	-10.9%	4.4%	3.9%	-8.0%	-5.3%	
PLN	4.59	5.16	↑	5.26	↓	5.10	↓	5.20	-11.6%	-7.5%	-14.3%	5.4%	4.2%	-12.2%	-9.4%	
HUF	400	442	↑	453	↑	440	↓	450	-11.1%	-3.7%	-17.2%	4.2%	3.8%	-18.9%	-18.6%	
TRY	18.63	19.00	↑	21.00	↓	23.00	↓	25.00	-25.5%	1.5%	-8.6%	-0.2%	-2.7%	-28.6%	-39.4%	
ZAR	17.38	18.00	↑	19.00	↑	19.50	↑	20.00	-13.1%	-10.7%	-12.5%	4.1%	-2.2%	-8.3%	-9.5%	
Americas																
ARS	163.2	215	↓	250	↓	280	↓	390	-58.2%	-6.1%	-15.4%	-5.7%	-16.1%	-37.0%	-38.4%	
BRL	5.33	5.25	↓	5.15	↑	5.25	↑	5.50	-3.1%	4.9%	-7.3%	-3.1%	-4.2%	4.7%	5.3%	
CLP	952	960	↓	940	↑	960	↑	985	-3.4%	-0.4%	-8.6%	2.1%	-12.6%	-10.5%	-12.8%	
COP	4988	5000	↓	5100	↓	5200	↓	5300	-5.9%	2.1%	-9.1%	-1.5%	-12.6%	-18.2%	-21.5%	
MXN	19.49	19.50	↑	19.50	↑	19.75	↑	19.75	-1.3%	6.1%	1.3%	2.3%	2.5%	5.4%	6.9%	
PEN	3.83	3.90	↑	3.85	↑	3.90	↑	3.95	-3.1%	-0.5%	-2.5%	4.1%	0.8%	4.5%	4.6%	
LACI	39.3	38.4	↑	38.1	↑	37.1	↑	35.2	-10.5%	3.1%	-5.3%	-0.6%	-3.8%	-3.9%	-4.0%	
Asia																
CNY	7.17	7.15	↑	7.20	↑	7.20	↑	7.20	-0.5%	-2.9%	-2.4%	0.9%	-4.6%	-11.3%	-10.9%	
HKD	7.81	7.85	↓	7.84	↓	7.83	↑	7.81	0.0%	-0.2%	-0.1%	0.5%	0.5%	-0.1%	-0.2%	
IDR	15713	15500	↓	15550	↓	15600	↓	15650	0.4%	2.1%	-4.2%	-0.5%	-5.6%	-9.3%	-9.4%	
INR	81.85	82.00	↑	83.00	↑	84.50	↑	86.00	-4.8%	-1.9%	-7.1%	1.0%	-2.4%	-9.2%	-9.3%	
KRW	1355	1320	↑	1340	↑	1370	↑	1400	-3.2%	-4.6%	-3.6%	6.3%	-0.7%	-12.3%	-12.5%	
MYR	4.58	4.54	↑	4.56	↑	4.58	↑	4.60	-0.4%	-1.6%	-3.3%	3.5%	-2.0%	-9.0%	-8.7%	
PHP	57.36	58.25	↑	58.50	↑	58.75	↑	60.00	-4.4%	-2.6%	-5.2%	2.4%	-2.2%	-11.1%	-12.1%	
SGD	1.38	1.380	↑	1.385	↑	1.380	↑	1.370	0.9%	0.0%	-0.7%	2.4%	0.7%	-2.4%	-1.5%	
TWD	31.2	31.25	↑	31.50	↑	31.75	↑	31.75	-1.7%	-5.4%	-3.3%	3.2%	-3.2%	-11.3%	-10.9%	
THB	36.2	35.50	↑	35.50	↑	35.75	↑	35.75	1.3%	-2.4%	-3.5%	5.9%	-0.3%	-7.8%	-9.6%	
ADXY	98.0	98.5	↑	97.8	↑	97.4	↑	97.0	-1.0%	-2.4%	-2.7%	1.7%	-3.8%	-9.3%	-9.2%	
EMCI	49.7	48.8	↑	48.1	↑	47.4	↑	46.5	-6.4%	1.8%	-3.9%	2.4%	-0.8%	-5.7%	-7.3%	
Exchange rates vs Euro										Actual change in local FX vs EUR						
JPY	145.3	133	↑	131	↑	135	↑	133	9.2%	6.0%	6.6%	0.3%	-6.2%	-9.9%	-11.4%	
GBP	0.87	0.83	↑	0.86	↑	0.93	↑	0.93	-6.3%	-4.5%	-5.5%	0.7%	-2.8%	-3.0%	-3.2%	
CHF	0.98	0.95	↓	0.93	↓	0.92	↓	0.92	6.6%	4.6%	9.8%	0.3%	-2.0%	5.8%	6.8%	
SEK	10.98	11.40	↓	11.20	↓	11.00	↓	11.10	-1.0%	0.3%	-5.0%	0.4%	-3.5%	-6.3%	-8.0%	
NOK	10.49	11.00	↓	10.80	↓	10.60	↓	10.70	-2.0%	0.1%	-8.5%	-0.9%	-7.7%	-4.4%	-4.0%	
CZK	24.36	24.70	↑	24.70	↑	26.00	↑	26.50	-8.1%	-4.2%	-6.4%	0.5%	1.2%	2.2%	4.4%	
PLN	4.70	4.90	↑	5.00	↑	5.10	↑	5.20	-9.5%	-2.6%	-10.0%	1.6%	1.4%	-2.5%	0.0%	
HUF	409	420	↑	430	↑	440	↑	450	-9.0%	1.5%	-13.1%	0.1%	1.1%	-9.8%	-10.3%	
RON	4.94	5.00	↑	5.10	↑	5.20	↑	5.25	-5.9%	-0.3%	-4.2%	-0.6%	-1.5%	0.1%	0.2%	
TRY	19.07	18.1	↓	19.95	↑	23.00	↓	25.00	-23.7%	6.9%	-4.0%	-4.2%	-5.3%	-20.9%	-33.7%	
RUB	62.39	57.0	↓	57.00	↑	60.00	↑	60.00	4.0%	33.9%	31.3%	-2.7%	-3.9%	37.0%	32.9%	
BRL	5.45	4.99	↓	4.89	↑	5.25	↑	5.50	-0.8%	10.5%	-2.6%	-6.6%	-6.7%	16.2%	16.1%	
MXN	19.95	18.53	↓	18.53	↑	19.75	↑	19.75	10.0%	11.7%	6.3%	-1.4%	-0.2%	17.0%	17.8%	

↑ indicates a revision resulting in a stronger currency forecast, ↓ indicates a revision resulting in a weaker currency forecast. Source: J.P. Morgan. Data as of November 22, 2022

* Positive indicates JPM more bullish on local currency than spot, consensus or forward rates. ** Bloomberg FX Consensus Forecasts compares 4Q'22

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