



Guide to China

1Q 2024

As of January 31, 2024





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Evolution of China's economy

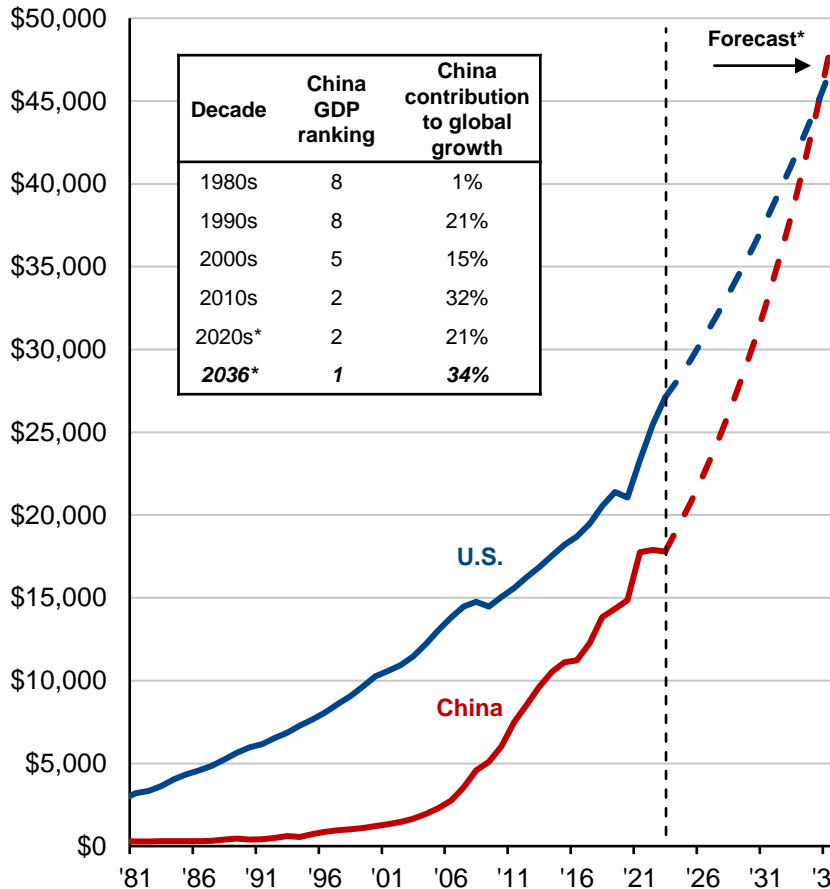
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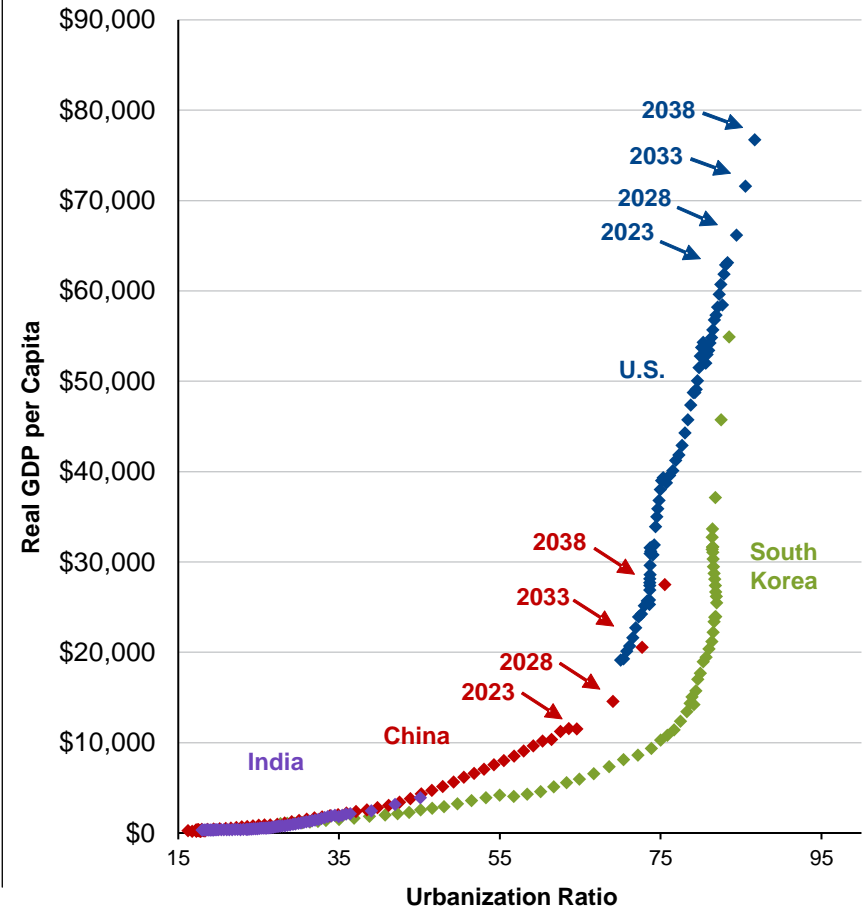
GDP size of China and U.S.

USD billions, current prices



Real GDP per capita and urbanization ratios

USD, Constant prices, 1960 – 2038**



Source: J.P. Morgan Asset Management; (Left) BEA, National Bureau of Statistics of China; (Right) United Nations, World Bank.

*2023 and 2024 forecasts are J.P. Morgan Global Economic Research forecasts, and 2025–2038 forecasts are based on the J.P. Morgan 2024 Long-term Capital Market Assumptions (LTCMA) estimates. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.**Includes forecasts for 2028, 2033 and 2038 based on the 2024 LTCMAs, the United Nations population projections and the United Nations World Urbanization Prospects:2018 Revision.

Guide to China. Data are as of January 31, 2024.



The emergence of the middle class

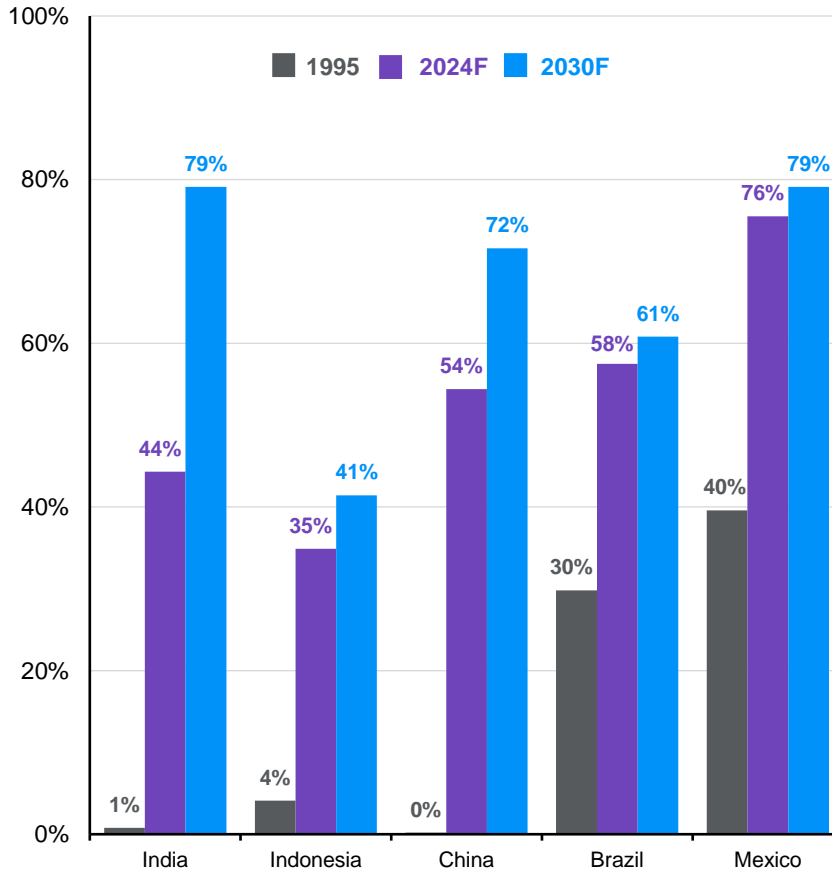
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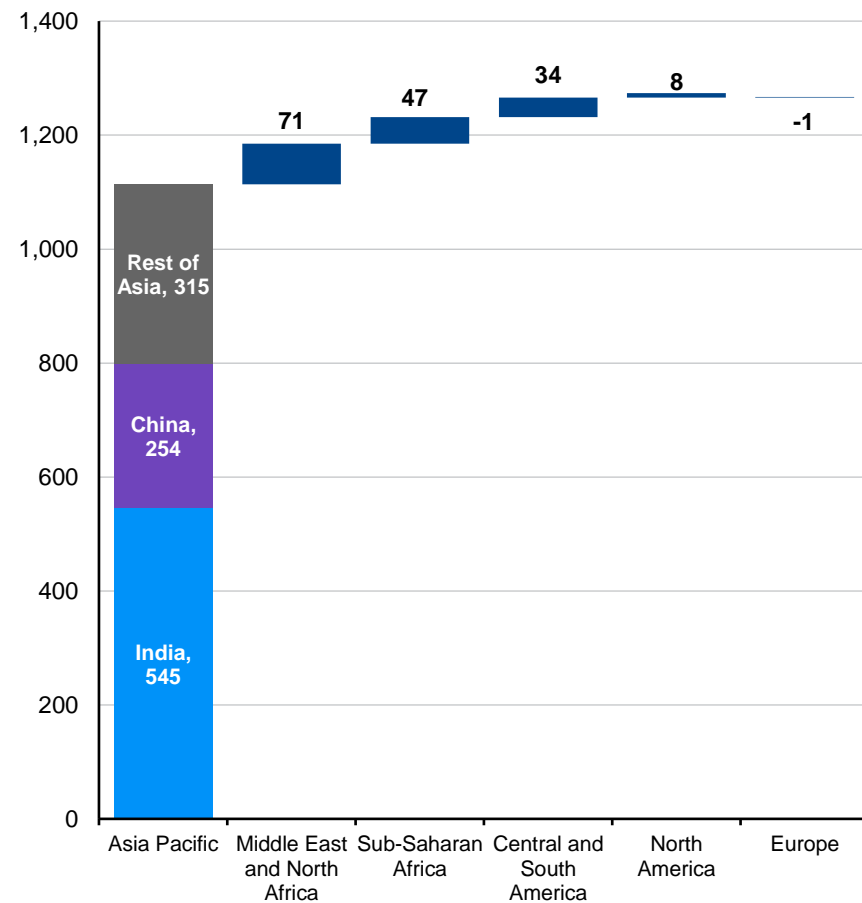
Growth of the middle class

% of total population



Contribution to middle class growth: 2024 to 2030

Millions of people, forecasts



Source: Brookings Institution, J.P. Morgan Asset Management.

Estimates for regional contribution are from Kharas, Homi. The Unprecedented Expansion of the Global Middle Class, An Update. Brookings Institution, 2017. Middle class is defined as households with per capita incomes between \$11 and \$110 per person per day in 2011 purchasing power parity (PPP) terms. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated. *Guide to China*. Data are as of January 31, 2024.



Long-term growth potential

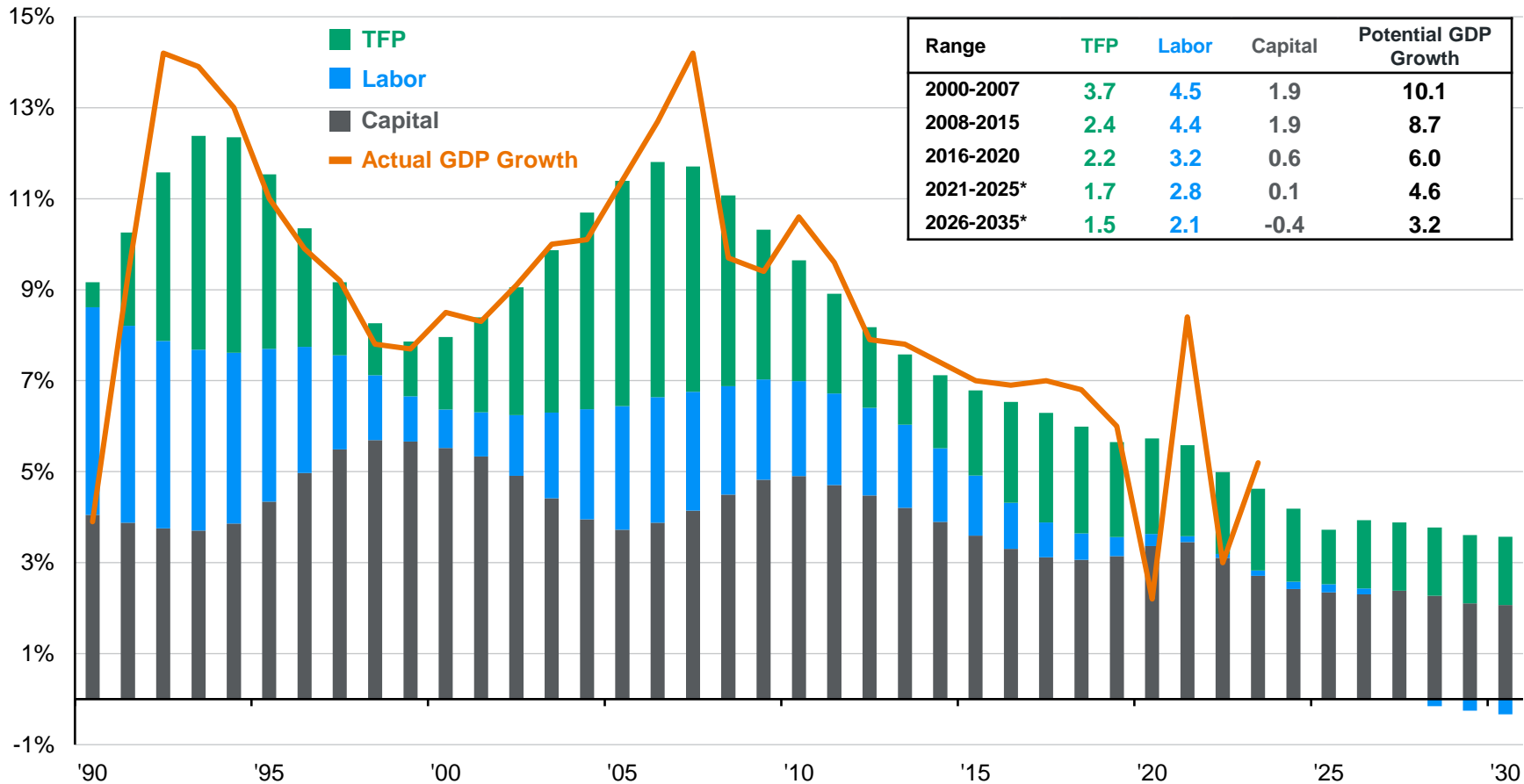
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Contribution to potential growth

Percentage points, real growth rate



Source: CEIC, J.P. Morgan Global Economic Research, J.P. Morgan Asset Management.

TFP refers to total factor productivity and includes education. *Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.

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Contribution to GDP growth

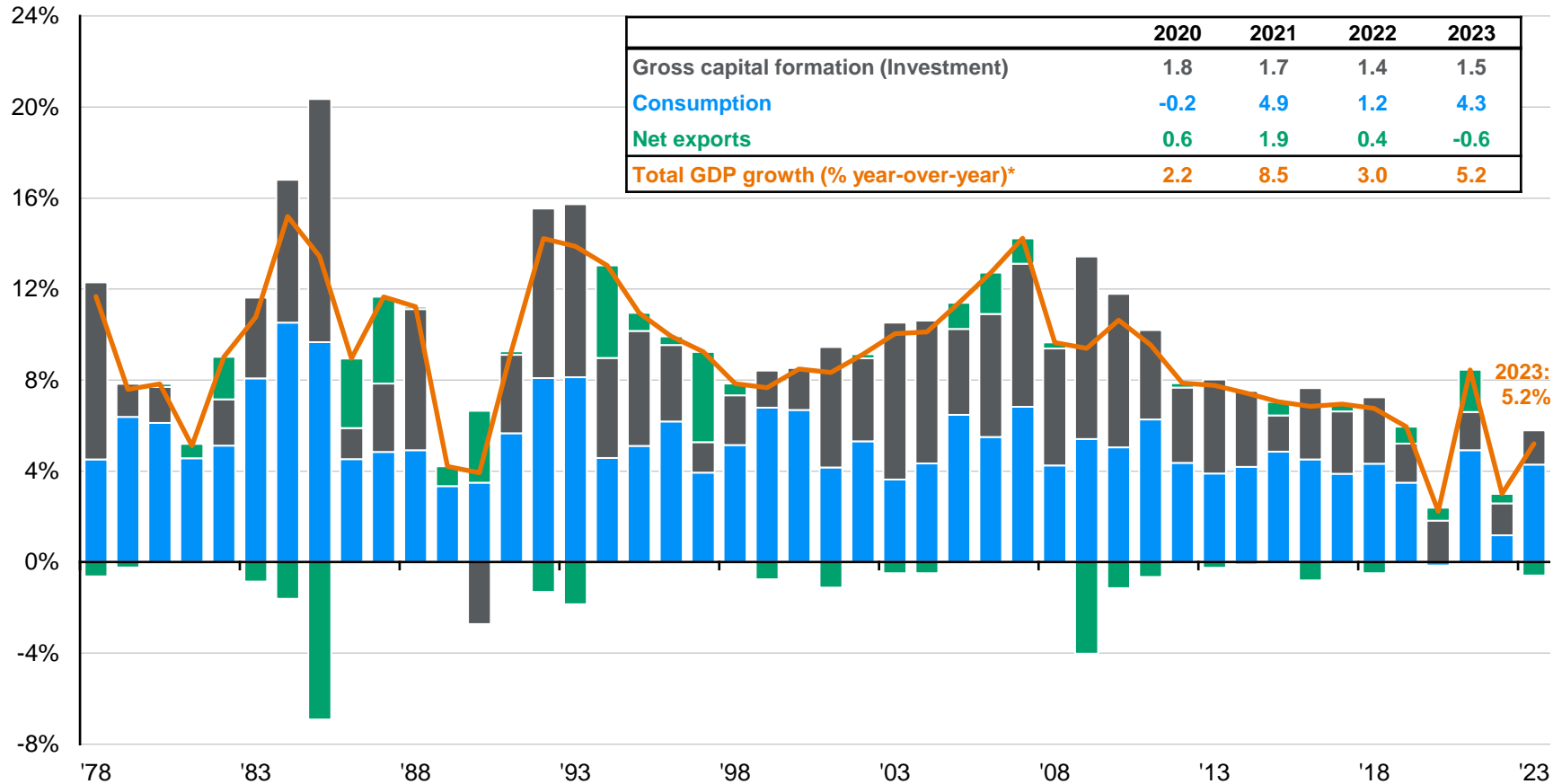
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Contribution to GDP growth

Percentage points, real growth rate



Source: CEIC, National Bureau of Statistics, J.P. Morgan Asset Management.

*Aggregate GDP growth may be different from sum of sub-items due to rounding.

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China's economic transition

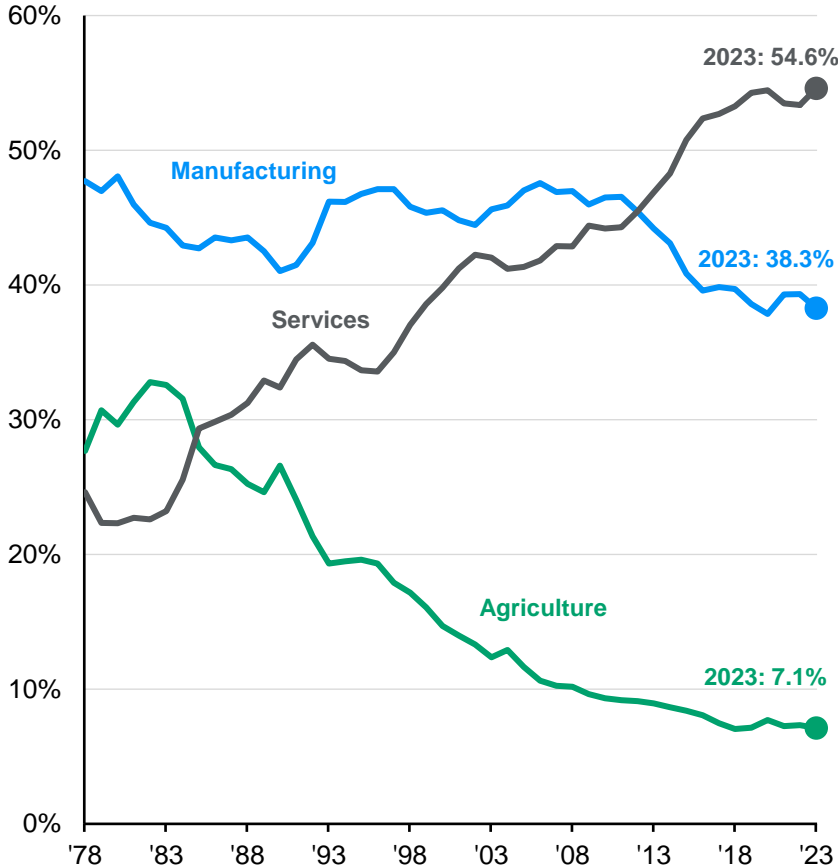
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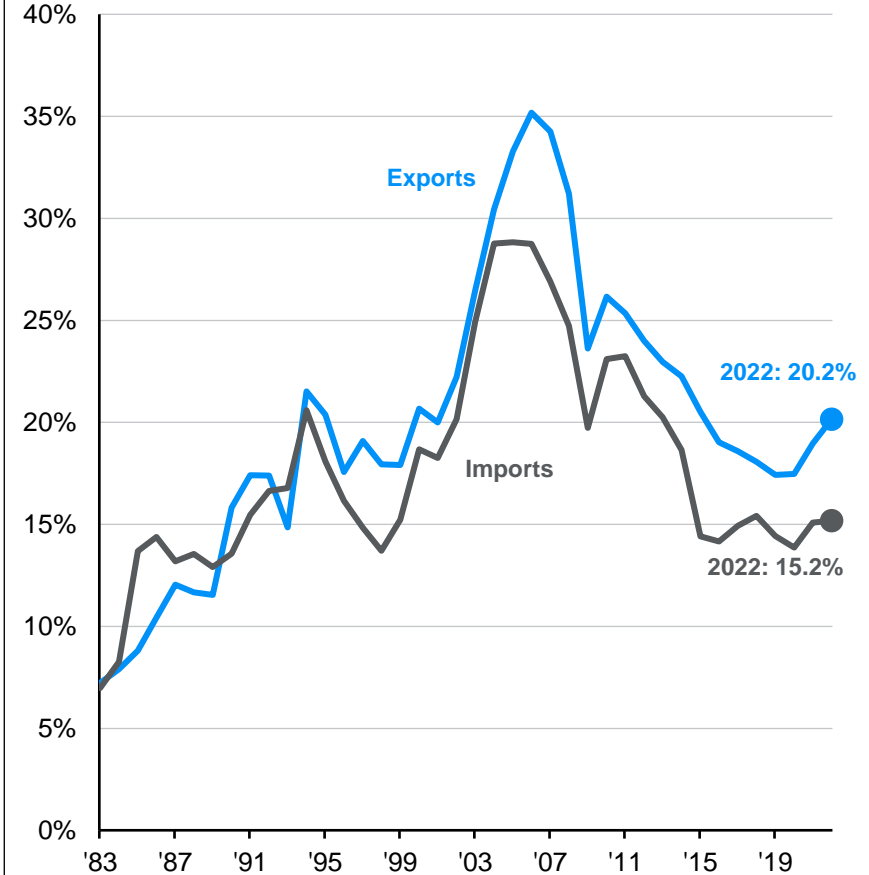
Share of GDP by sector

% of nominal GDP



Total exports and imports

% of GDP



Source: CEIC, IMF, National Bureau of Statistics, J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.



Importance of Chinese trade to the world

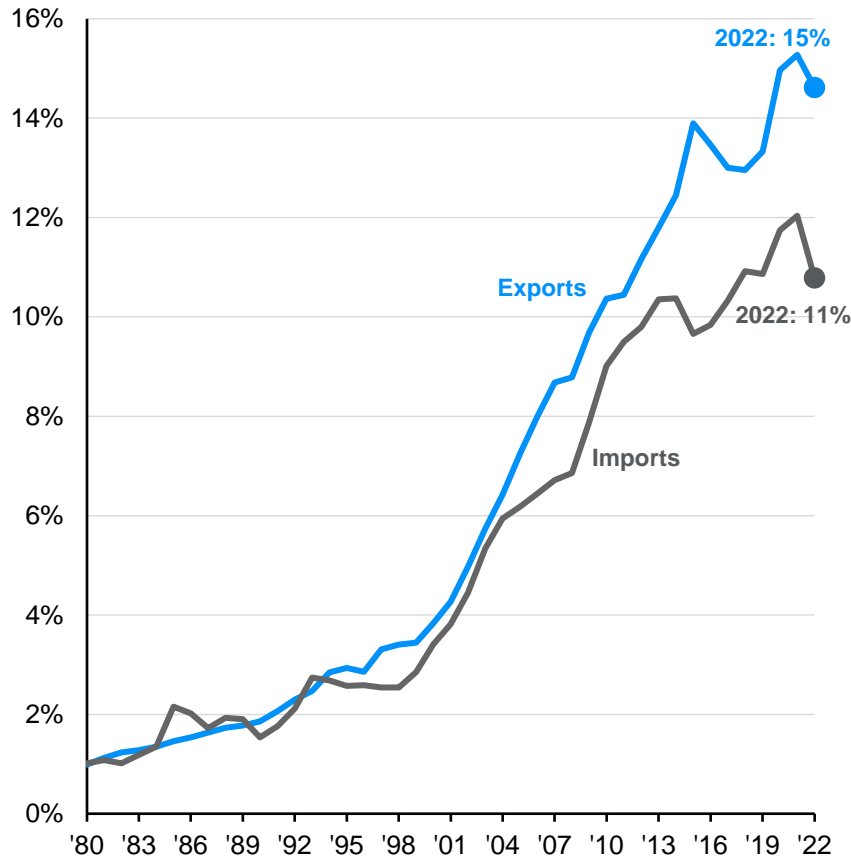
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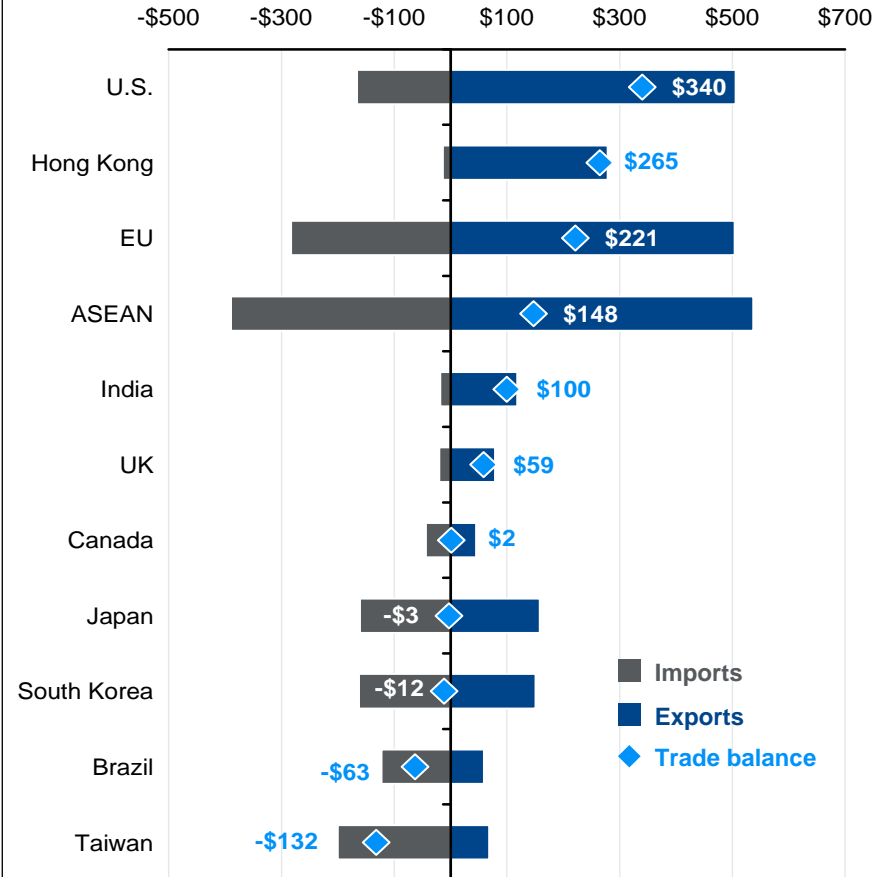
China's share in global trade

% of world total trade, goods only



China's major trading partners

USD billions, rolling 12-month sum, goods only



Source: (Left) IMF; (Right) China Customs; J.P. Morgan Asset Management. The graph shows data for full-year 2023. *Guide to China*. Data are as of January 31, 2024.



Chinese consumer

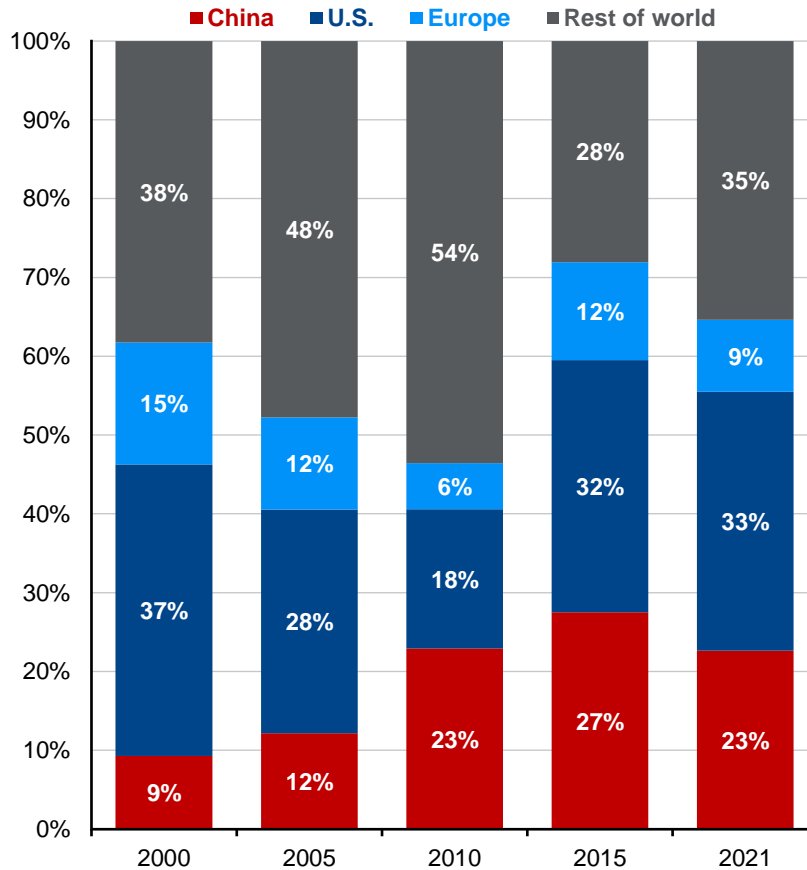
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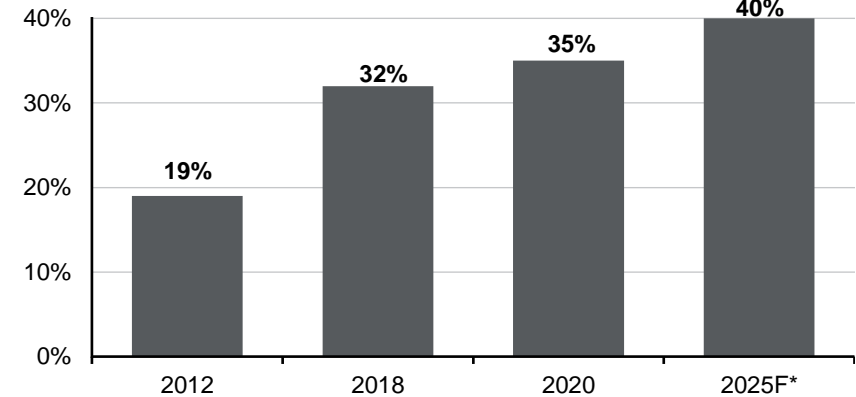
Contribution to global consumption growth

Household consumption



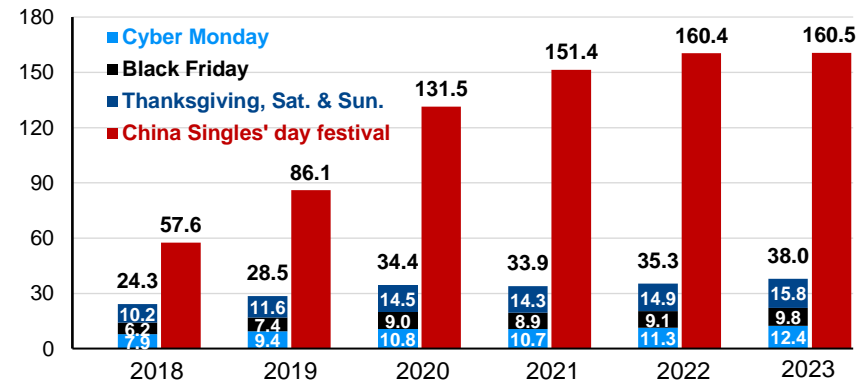
China's share in global luxury goods consumption

Domestic and overseas spending by Chinese consumers as % total



China's Singles' Day vs. U.S. holiday sales

USD billions, gross merchandise value



Source: (Left) World Bank; (Top right) McKinsey & Company "China Luxury Report 2019"; (Bottom right) Alibaba, Adobe Analytics, Amazon; J.P. Morgan Asset Management. Prime Day is an annual promotional event hosted by Amazon in late June (actual date varies by year). Singles' Day occurs annually on November 11. Figure includes Alibaba's Singles' Day sales only. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated. *Forecast based on McKinsey & Company "China Luxury Report 2019". **Final Singles' Day sales for 2022 were not officially disclosed but were reported to be in line with 2021 sales. Guide to China. Data are as of January 31, 2024.



Household savings

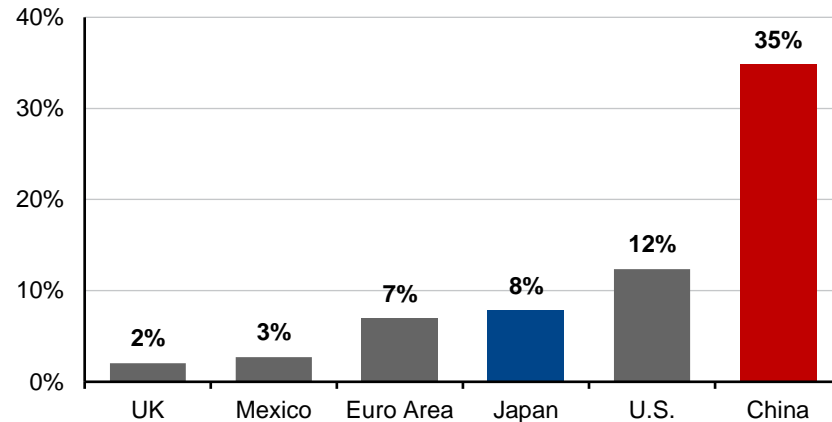
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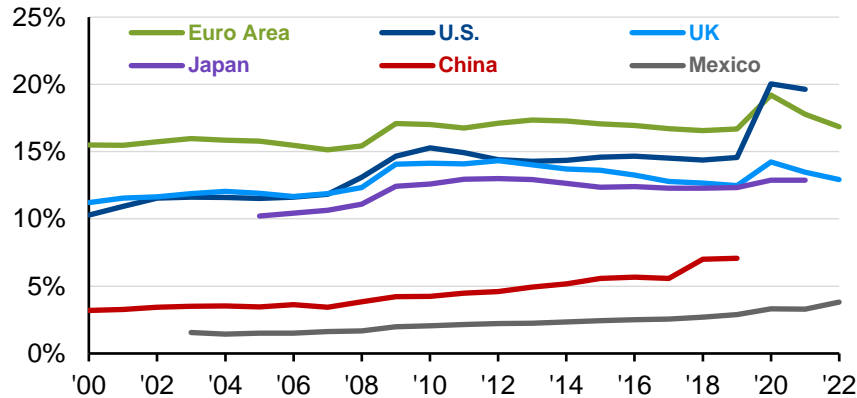
Household savings rate

% household disposable income, latest*



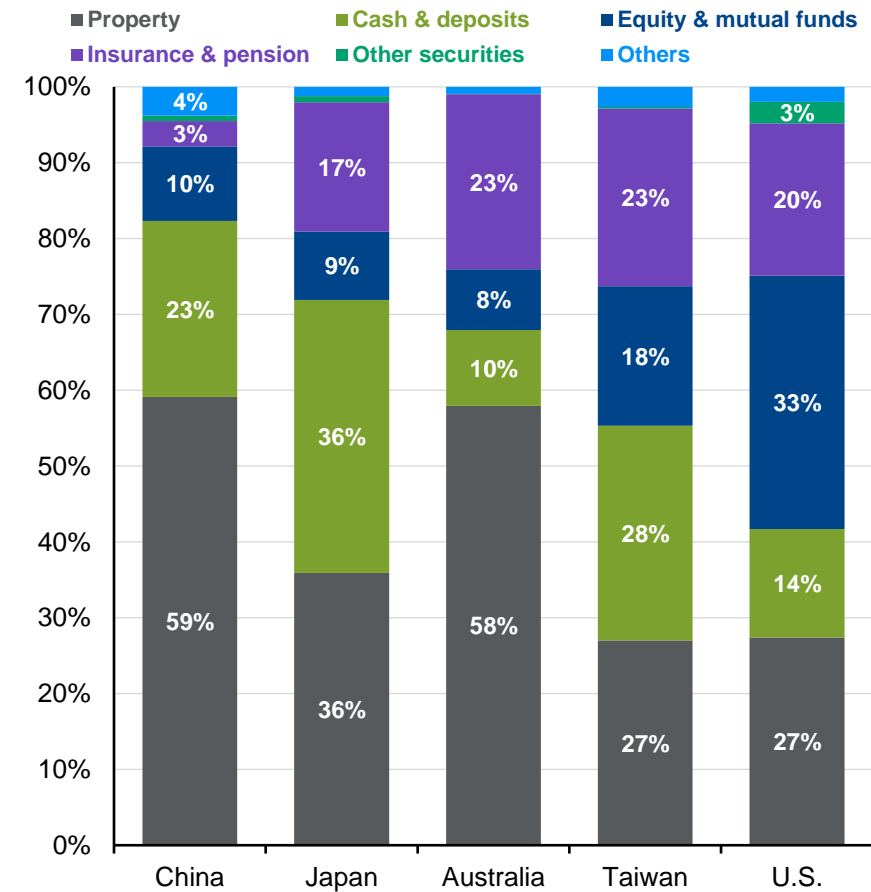
Social benefits to households in cash**

% of GDP, latest*



Household wealth by asset type

% of total, as of Dec. 2022



Source: J.P. Morgan Asset Management. (Left) OECD. (Right) NIFD, Wind, China Wealth, China Trust Association, Japan Cabinet Office, Halifax, Goldman Sachs Global Investment Research. *OECD data for household savings rate and social benefits is lagged with the latest figures varying by country: Euro Area (2022), UK (2022), U.S. (2021), Japan (2021), China (2019), Mexico: household savings rate (2021), social benefits (2021). **Social benefits in cash include cash transfers by the government for pension and non-pension benefits.

Guide to China. Data are as of January 31, 2024.



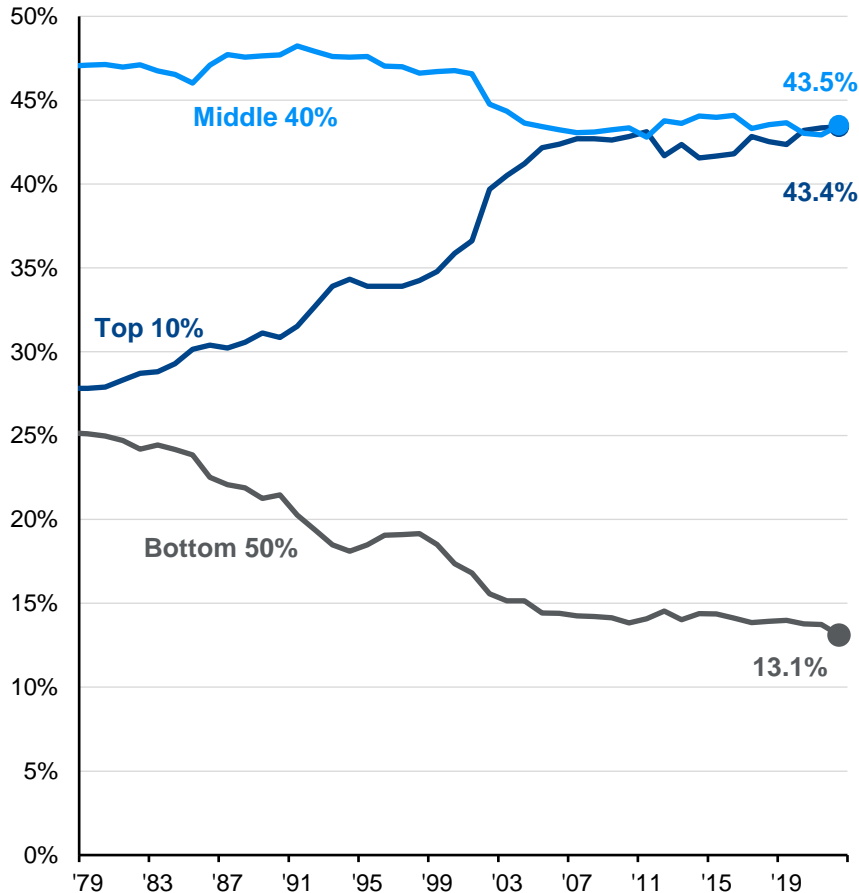
Income and wealth inequality

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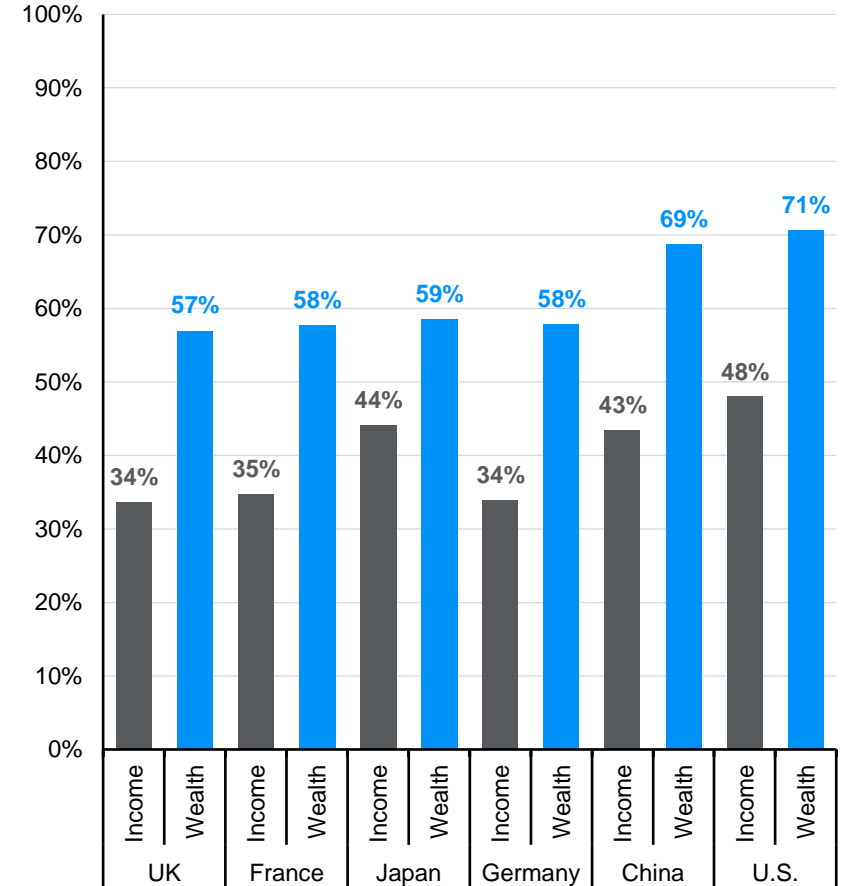
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Distribution of pre-tax national income



Top 10%’s ownership of national income and wealth*



Source: World Inequality Database, J.P. Morgan Asset Management. *Income and wealth data for Top 10% is as of 2022 and comes from the World Inequality Database.
Guide to China. Data are as of January 31, 2024.



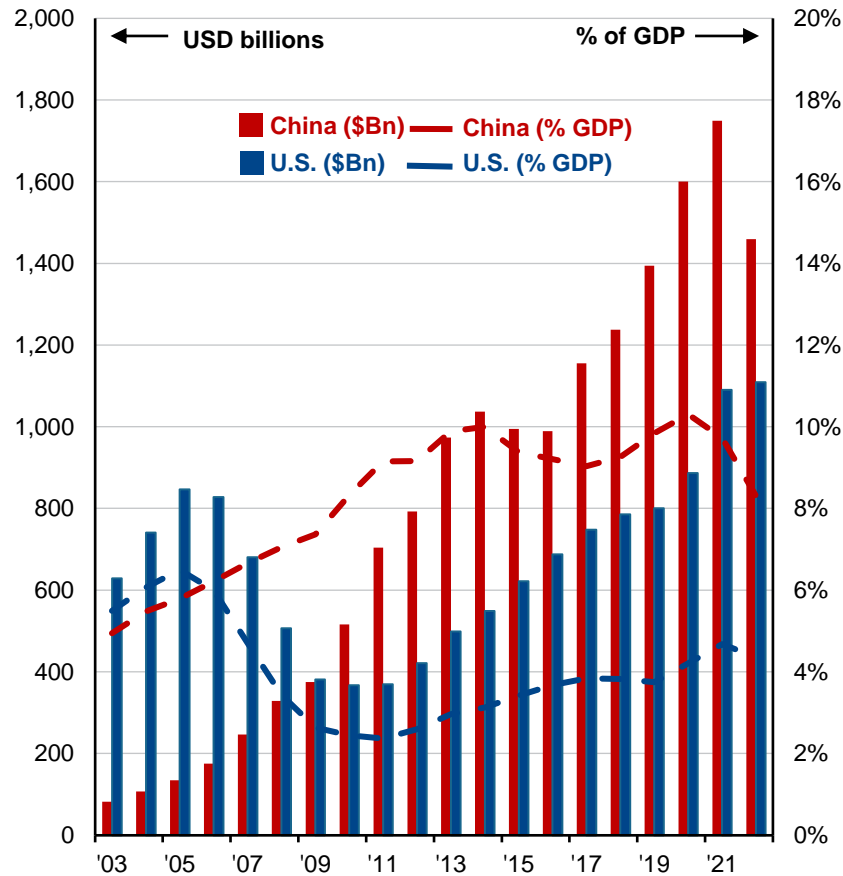
China's housing market in global context

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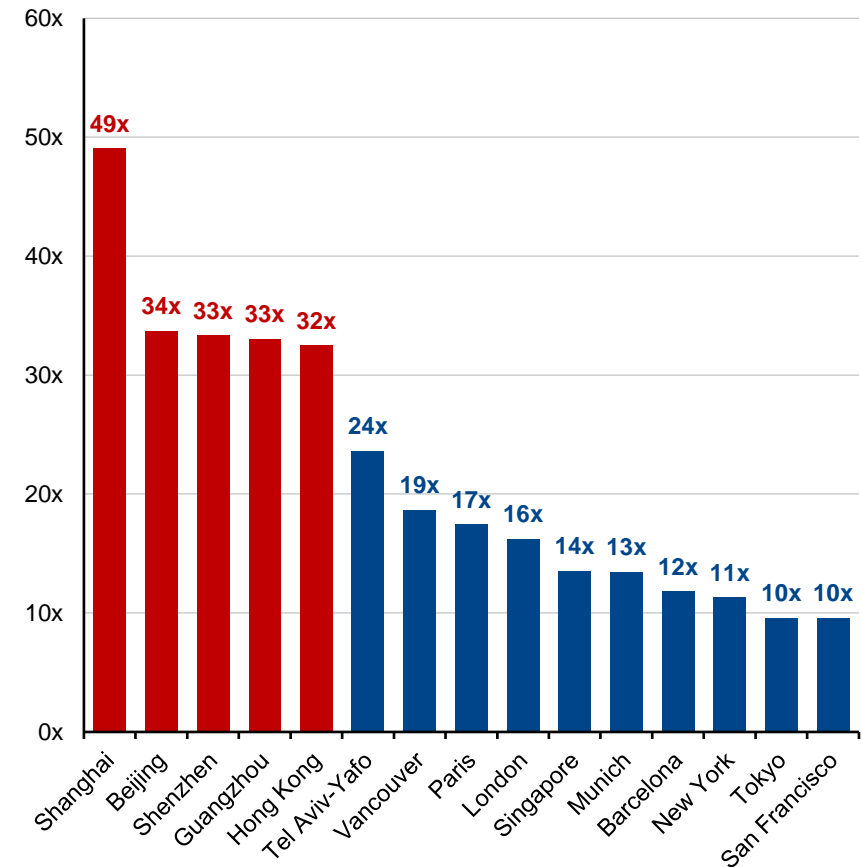
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China and U.S. residential real estate investment



Housing affordability in global major cities

Ratio, median apartment prices to median family disposable income



Source: J.P. Morgan Asset Management. (Left) National Bureau of Statistics of China, U.S. Bureau of Economic Analysis, U.S. National Bureau of Economic Research, "Peak China Housing" by Kenneth Rogoff and Yuanchen Yang, August 2020. (Right) Numbeo. Shows latest data available. Guide to China. Data are as of January 31, 2024.



Local government financing vehicles

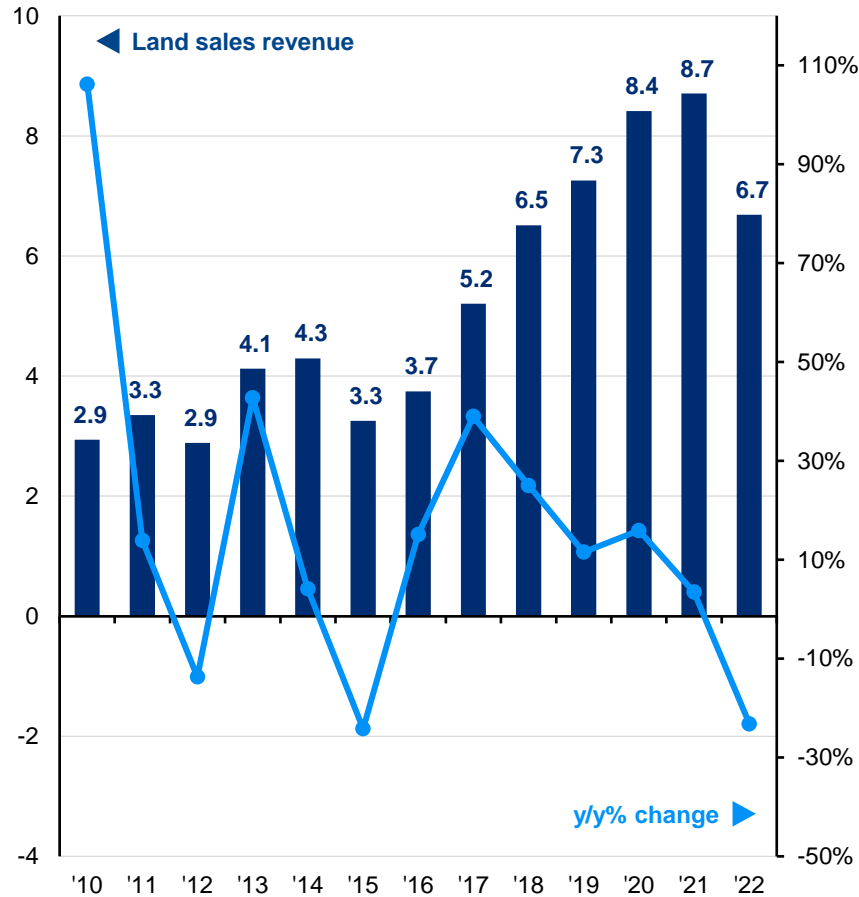
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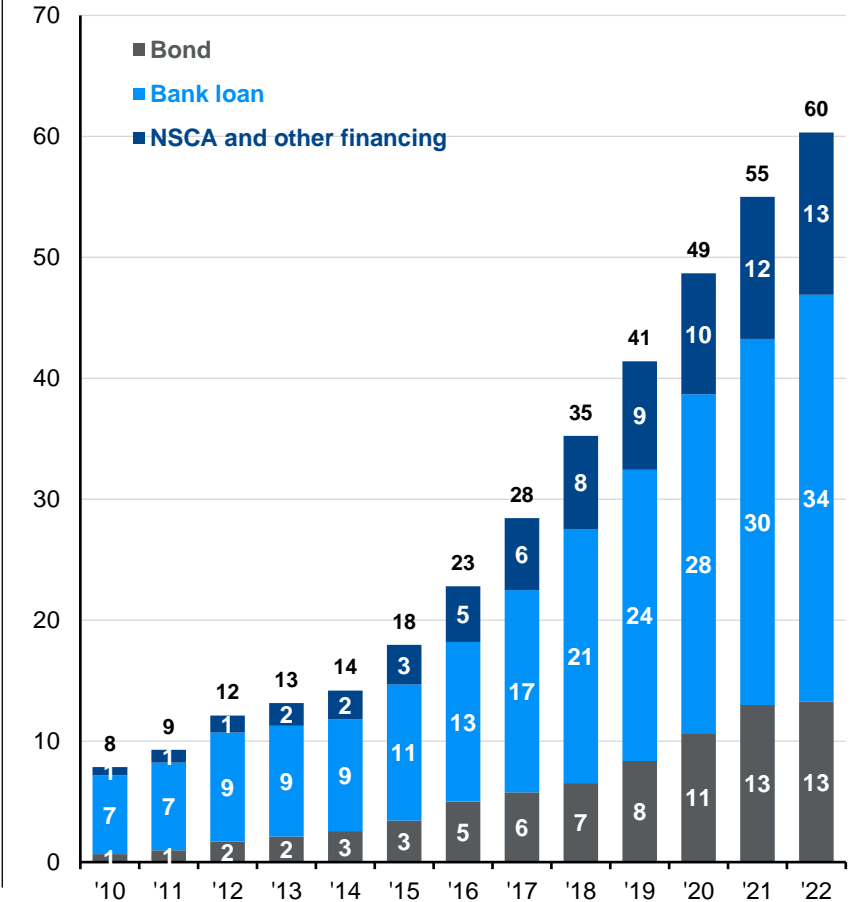
Land sales revenue

CNY trillion



Funding breakdown of LGFVs

CNY trillion



Source: Wind, Citi Research. "NSCA" = Non-Standard Credit Asset. NSCA refers to loan or debt instruments that are not readily tradable or has a higher degree of credit risk than traditional credit assets. "LGFV" = local government financing vehicle. (Right) Numbers may not add up correctly due to rounding. Guide to China. Data are as of January 31, 2024.



Demographic trends

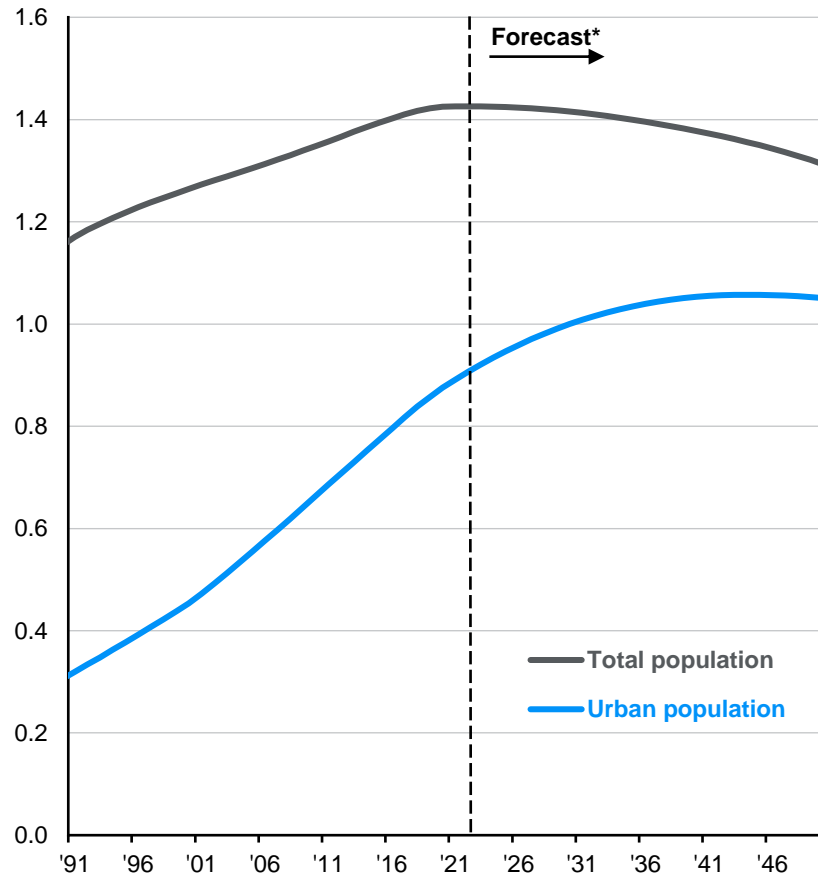
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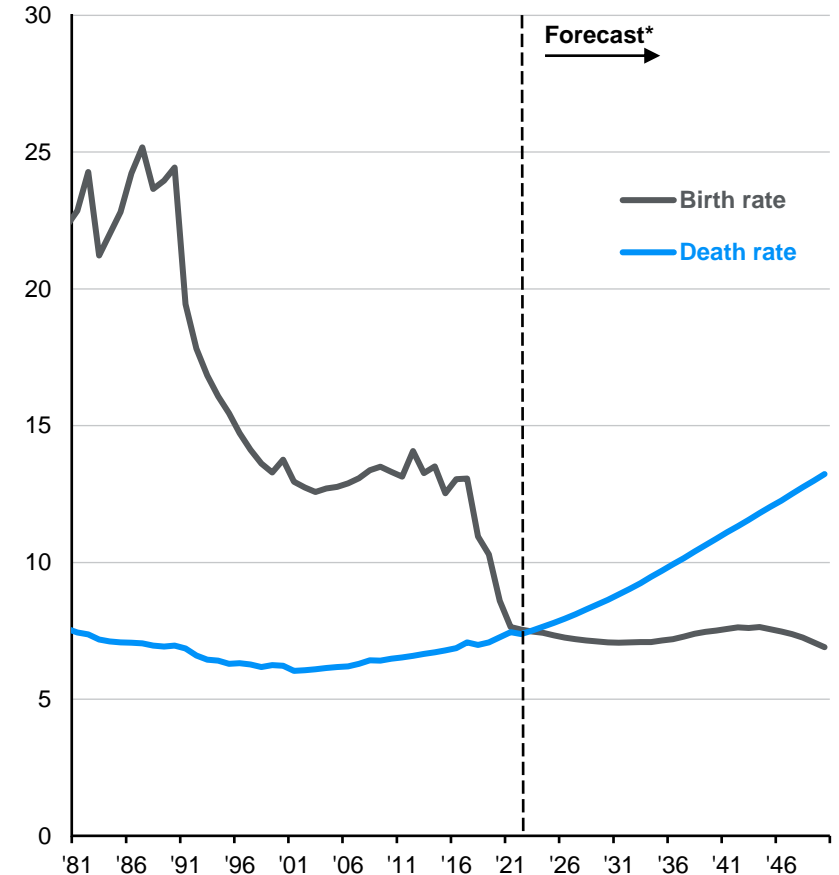
Total population

Billion people



Crude birth and death rate

Per 1,000 people



Source: United Nations-World Population Prospects 2022, United Nations-World Urbanization Prospects 2018, J.P. Morgan Asset Management.

*Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.

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Technological progress

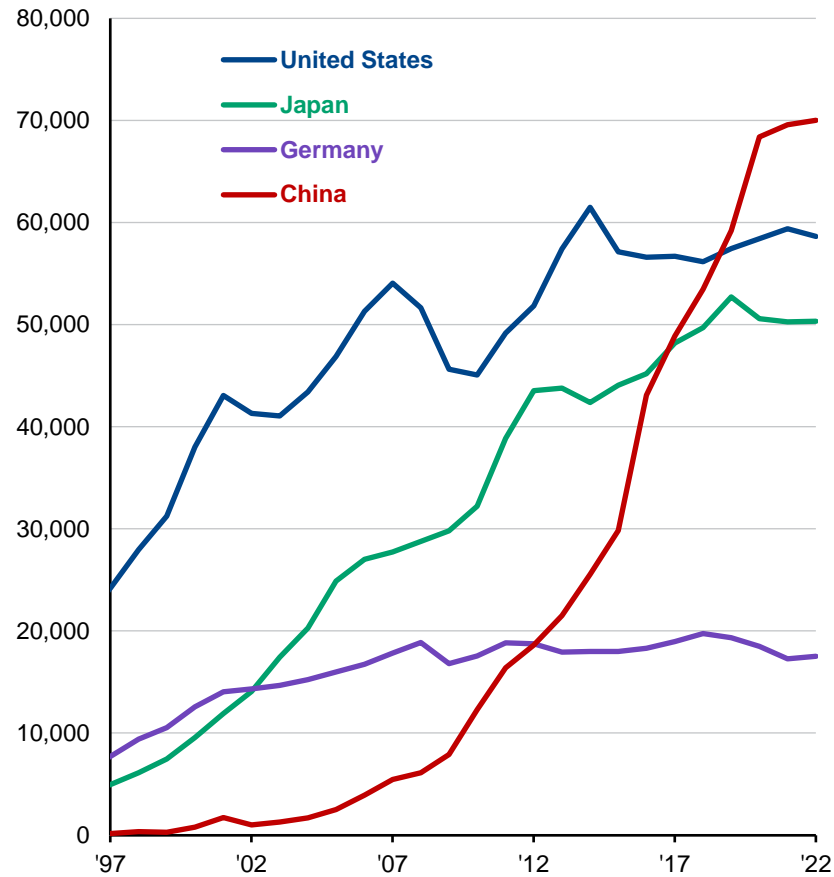
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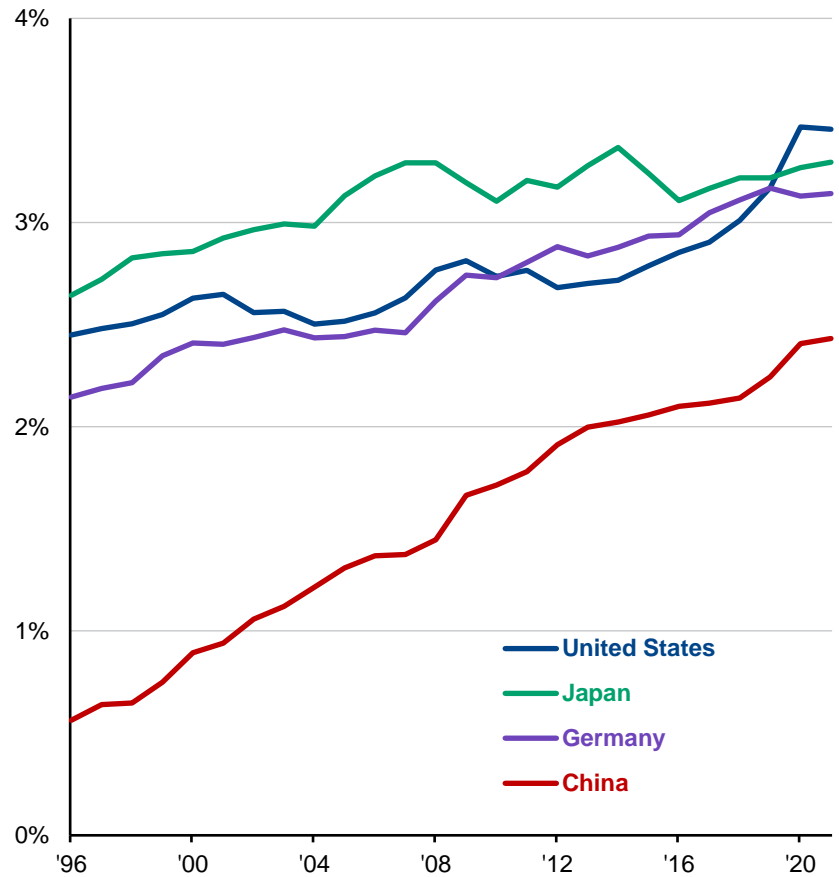
Patent applications

of PCT patent filings*



Research and development

Expenditures as % of GDP



Source: J.P. Morgan Asset Management; (Left) Wind, World Intellectual Property Organization; (Right) World Bank-World Development Indicators.

*PCT refers to Patent Cooperation Treaty. Patents filed under this treaty receive international patent protection.

Guide to China. Data are as of January 31, 2024.



China's self-sufficiency rate for key technologies

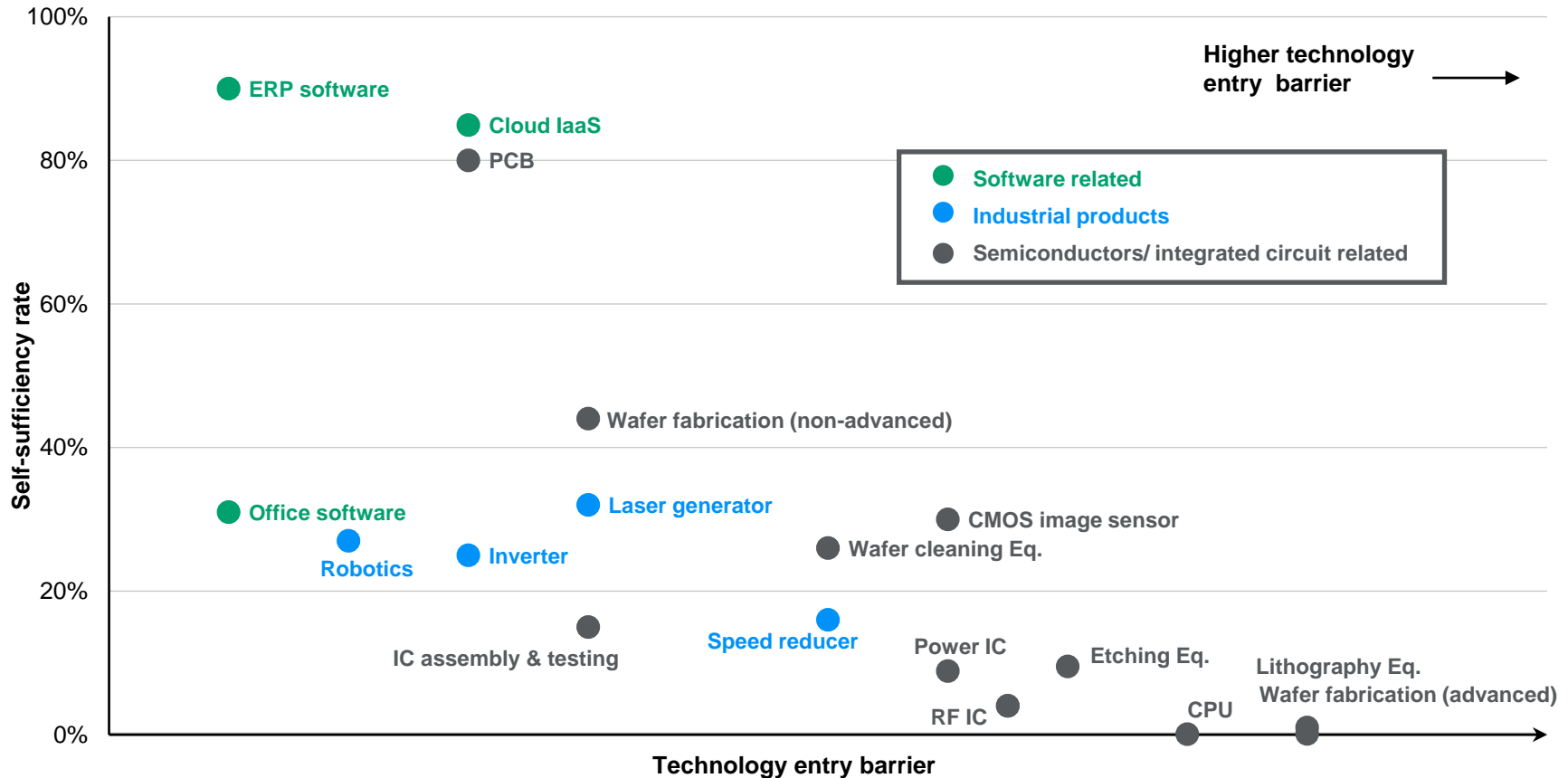
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Current self-sufficiency rate amongst different technology products

Percentage points



Source: J.P. Morgan Asset Management.

ERP= Enterprise resource planning; IaaS = Infrastructure as a Service; IC= Integrated circuit; PCB = Printed circuit board; RF IC = Radio frequency integrated circuit. Based on J.P. Morgan Asset Management's estimates as of October 31, 2022. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.

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Emission targets and energy mix

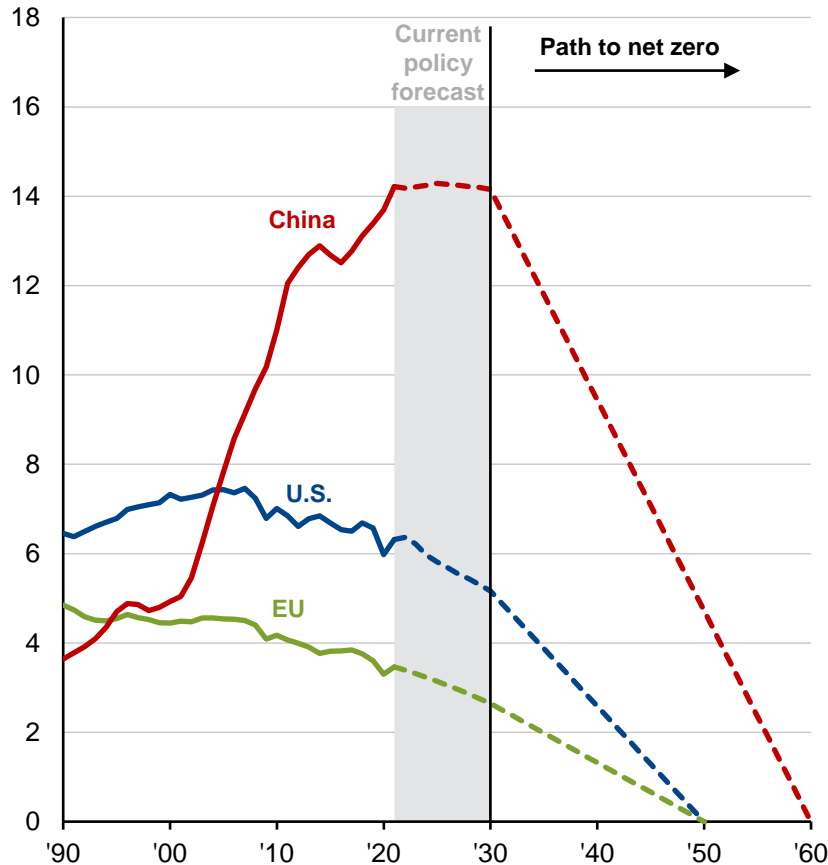
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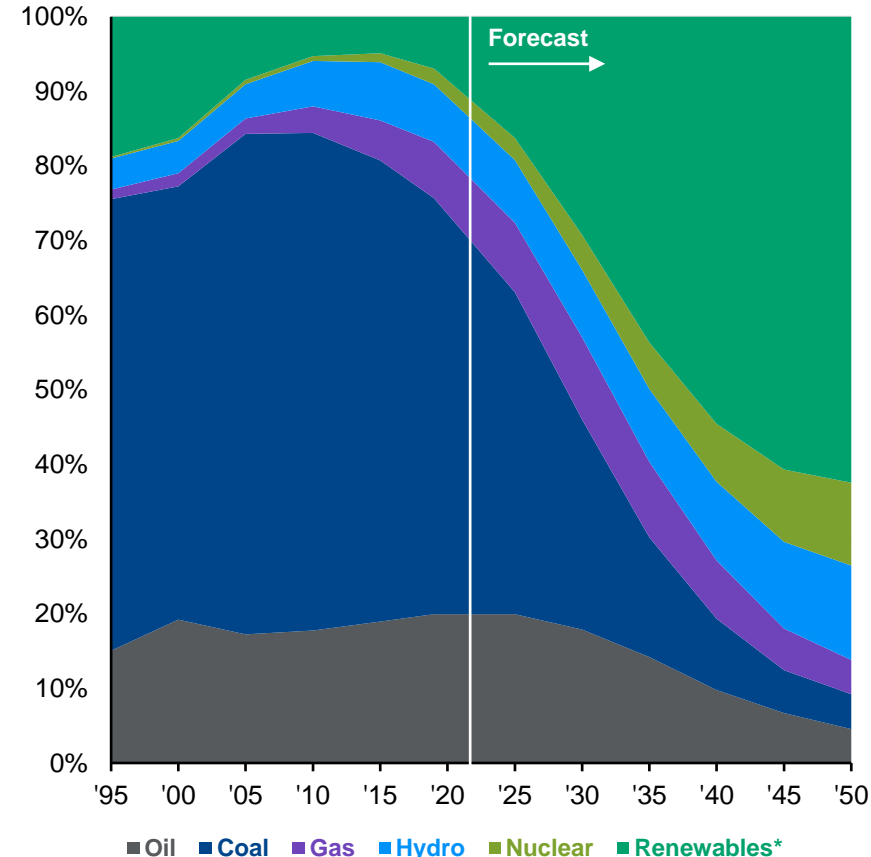
Greenhouse gas emission targets

Billion tonnes/year, CO2 equivalent



Structure of China's energy consumption

% of primary energy



Source: J.P. Morgan Asset Management; (Left) Climate Action Tracker. Current policy forecast is the post-Covid forecast provided by Climate Action Tracker. Forecasts start in 2022 for China and 2021 for the U.S. and EU. (Right) BP Energy Outlook 2023. Forecast is based on BP's scenario for global net-zero emissions by 2050. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.*Renewables include Wind, solar, geothermal, biomass, biomethane and biofuels.
Guide to China. Data are as of January 31, 2024.



Five-Year Plans

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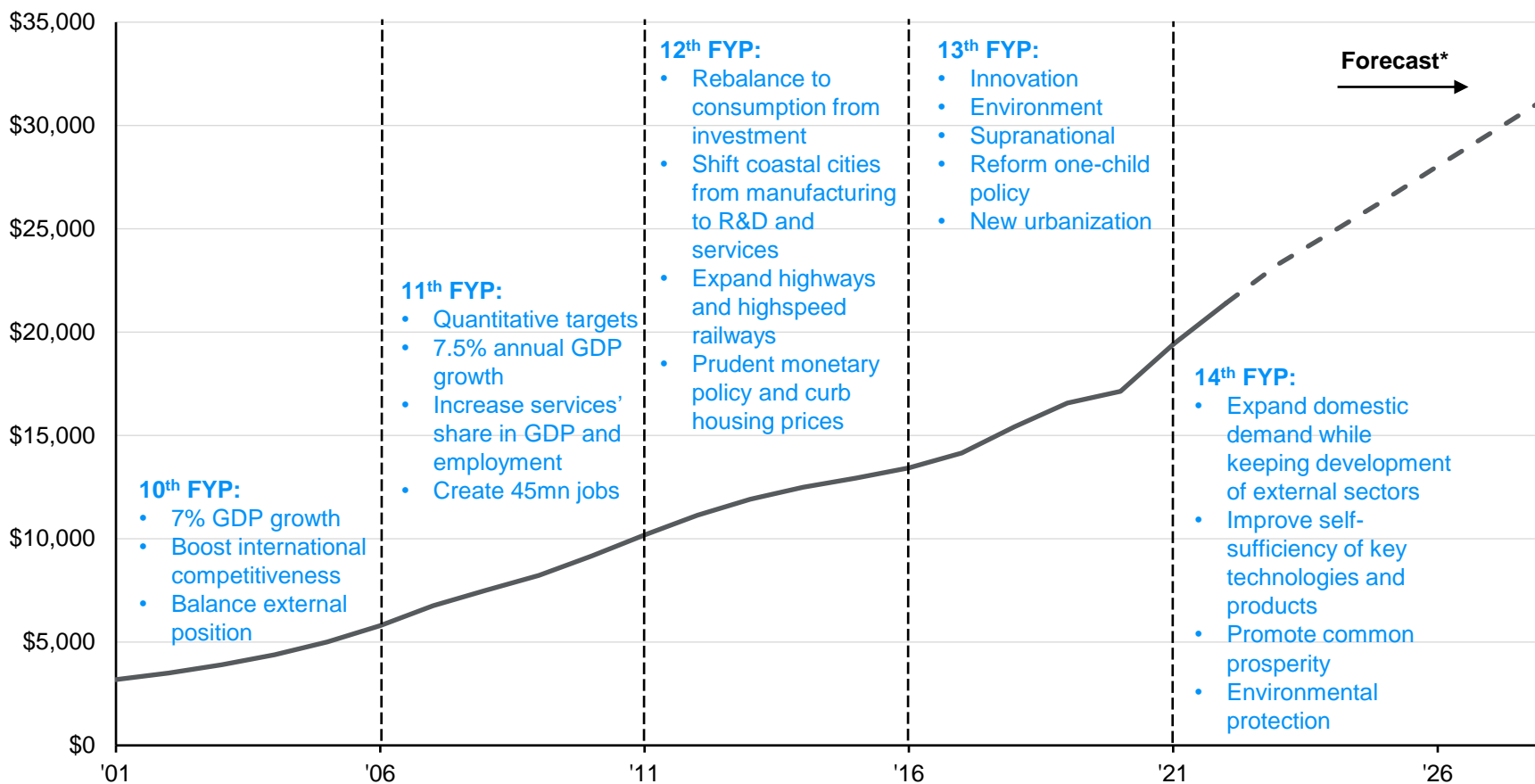
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Long-Term Drivers

China's GDP per capita vs. Five Year Plans (FYP)

USD, nominal price



Source: IMF-World Economic Outlook October 2023, J.P. Morgan Asset Management.

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*Nominal GDP per capita forecast comes from the IMF.

Guide to China. Data are as of January 31, 2024.



China capital market opening

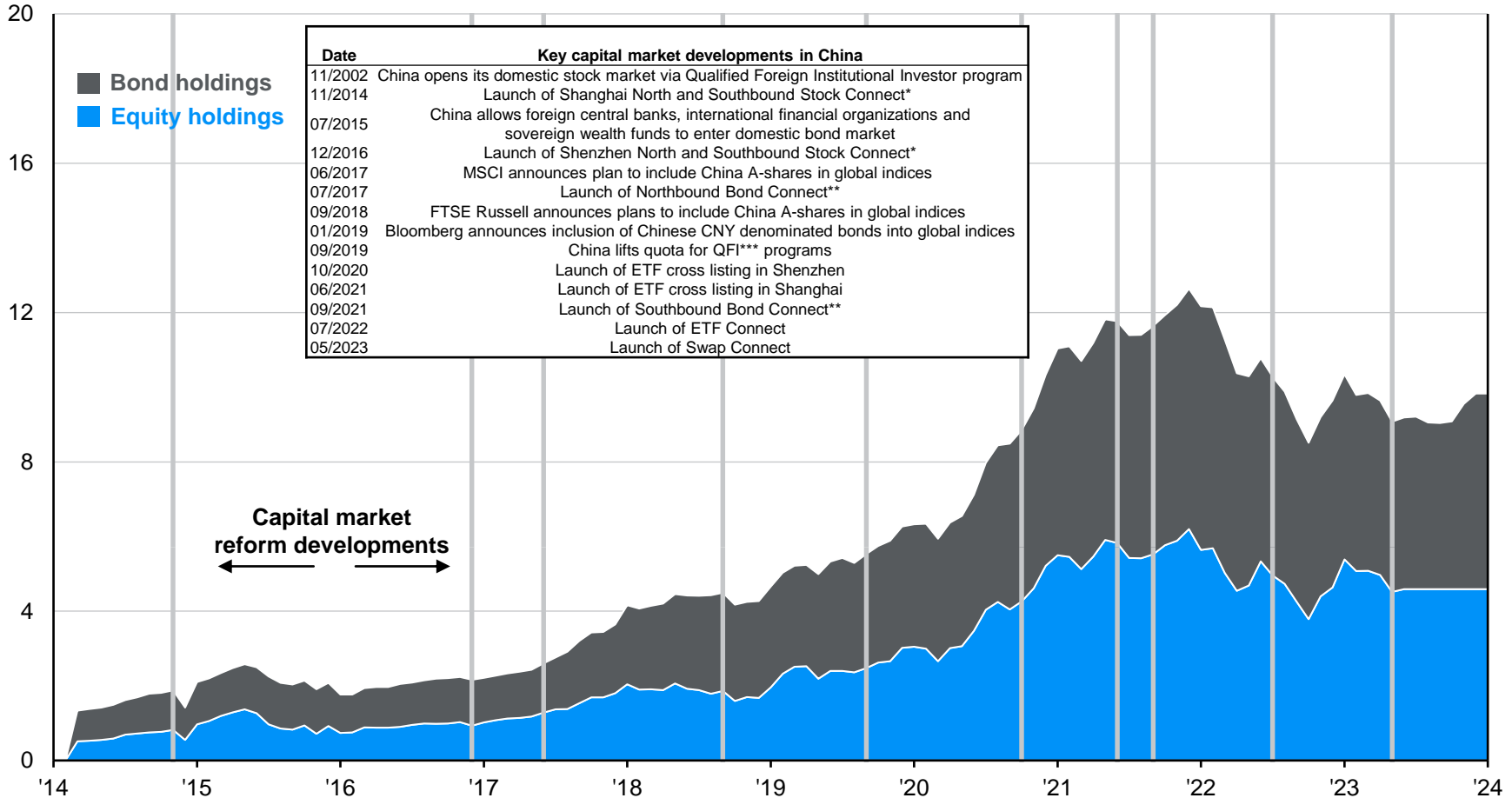
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Foreign investment into onshore Chinese equities and bonds

Foreign investor outstanding holdings, USD billion



Source: Bloomberg L.P., CEIC, China Central Depository and Clearing (CCDC), China Securities Regulatory Commission, Hong Kong Exchanges and Clearing Limited, Hong Kong Monetary Authority, PBoC, Shanghai Clearing House (SCH), State Administration of Foreign Exchange and J.P. Morgan Asset Management. Bond holdings and inflows are based on data provided by CCDC and SCH. Equity holdings and inflows are based on data provided by the PBoC. *Stock Connect is a cross-border channel that connects the Shanghai Stock Exchange and Shenzhen Stock Exchange to the Hong Kong Stock Exchange. It allows qualified mainland Chinese investors to access eligible Hong Kong shares (Southbound) as well as Hong Kong and overseas investors to trade eligible A shares (Northbound) subject to a certain amount of daily quota. **Bond Connect is a mutual market access scheme that allows international and Chinese investors to trade in each others credit markets. ***QFI (Qualified Foreign Investors) refers to the program, which was first launched in 2002, that allows specified licensed international investors to participate in mainland China's stock exchanges. Guide to China. Data are as of January 31, 2024.



China new energy vehicles

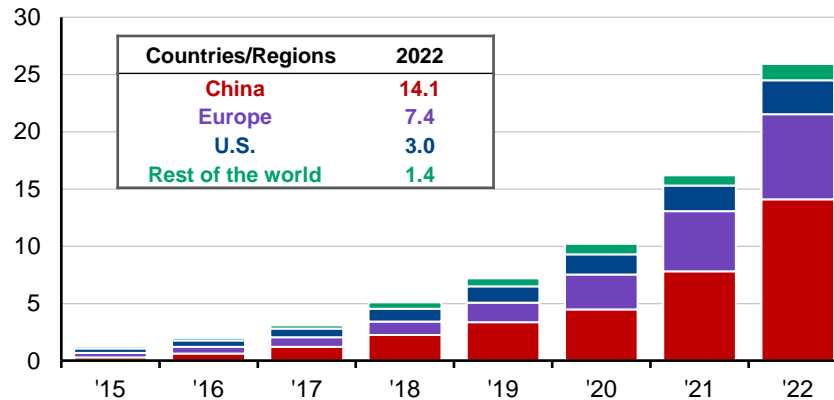
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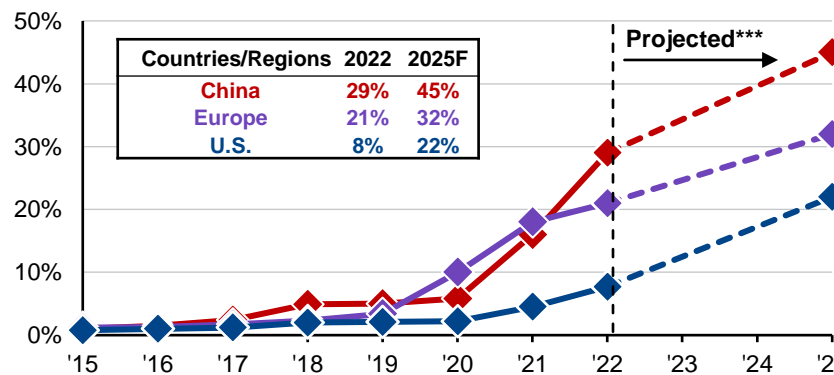
New energy vehicles (BEV* and PHEV**) in use

Millions



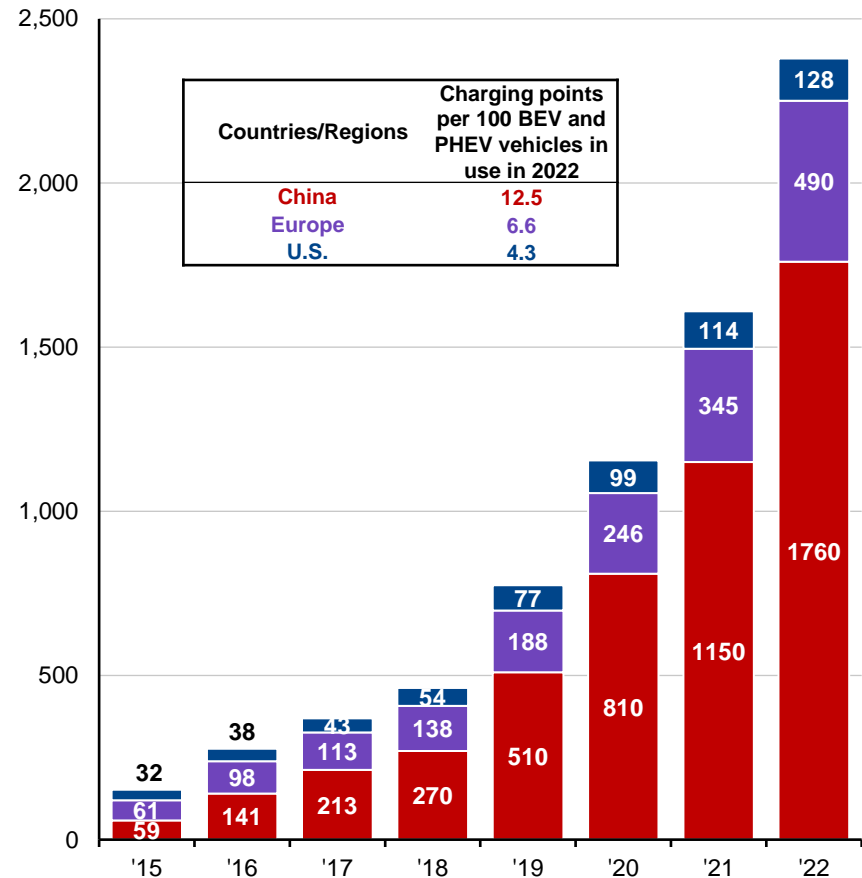
New energy vehicles (BEV* and PHEV**) sales

%, share of total car sales



Electric vehicle charging points

Thousands, publicly accessible



Source: International Energy Agency (IEA) – Global EV Outlook 2023, J.P. Morgan Asset Management.

*BEV stands for battery electric vehicles. **PHEV stands for plug-in hybrid electric vehicles. ***Projected sales are based on the Stated Policies Scenario forecasted by the IEA which accounts for all existing policies, policy ambitions and targets that have been legislated for or announced by governments around the world. It includes current EV-related policies and regulations, as well as the expected effects of announced deployments and plans from industry stakeholders. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated. Light duty vehicles are vehicles primarily used to transport passengers and cargo with a gross vehicle weight less than or equal to 10,000 pounds.

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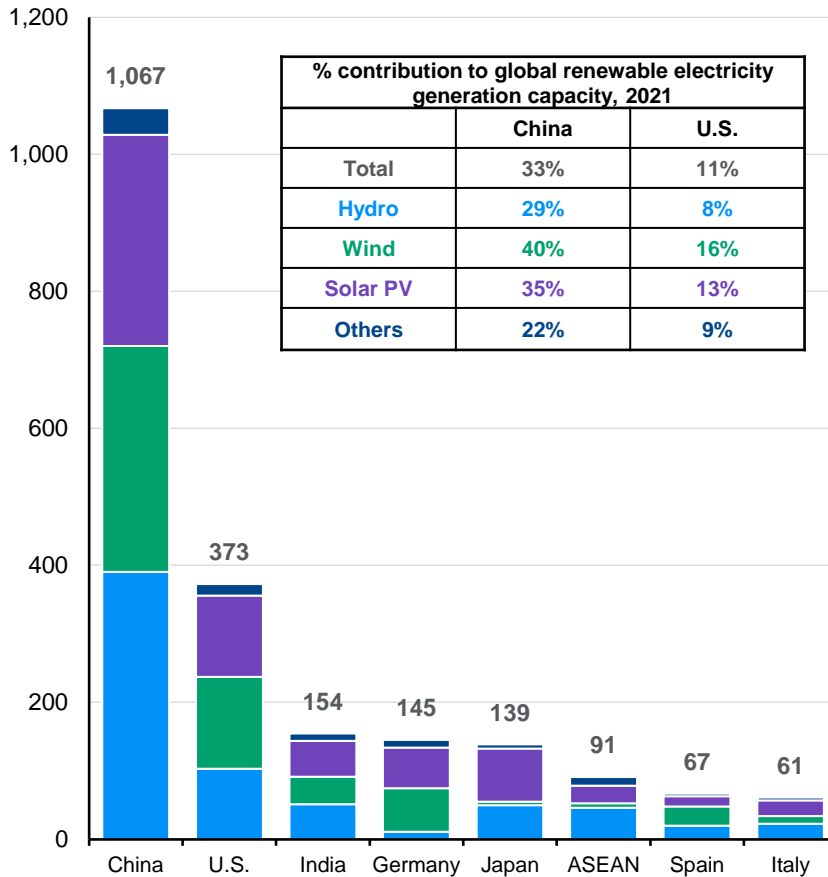
China's role in global renewables' supply chain

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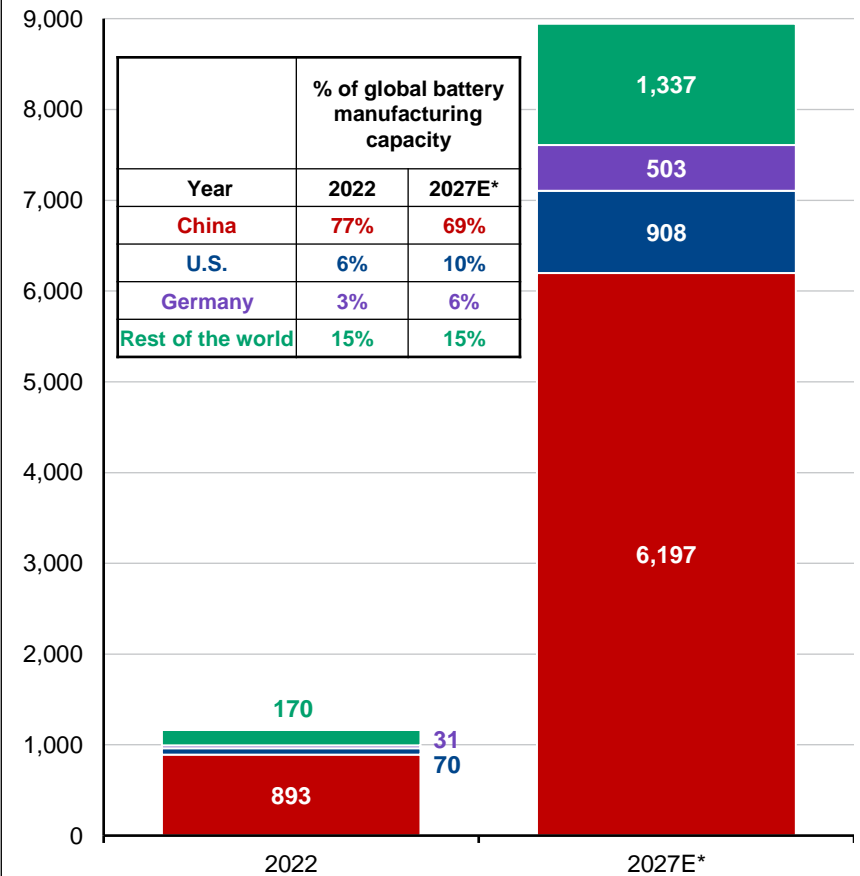
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Contribution to global renewable electricity generation in 2021
Gigawatts



Contribution to global lithium-ion battery production
Battery cell manufacturing capacity, gigawatt hours



Source: J.P. Morgan Asset Management. (Left) International Energy Agency 2022 Renewables Report. (Right) Bloomberg NEF.
*2027 figures are a Bloomberg NEF forecast.
Guide to China. Data are as of January 31, 2024.



China's role in key industries

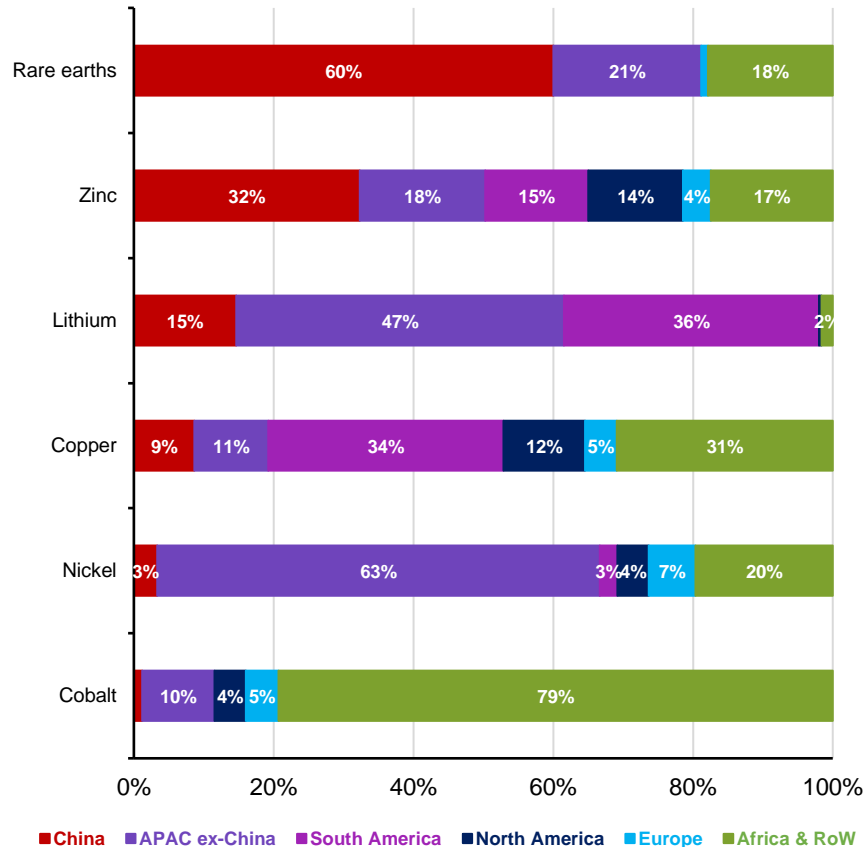
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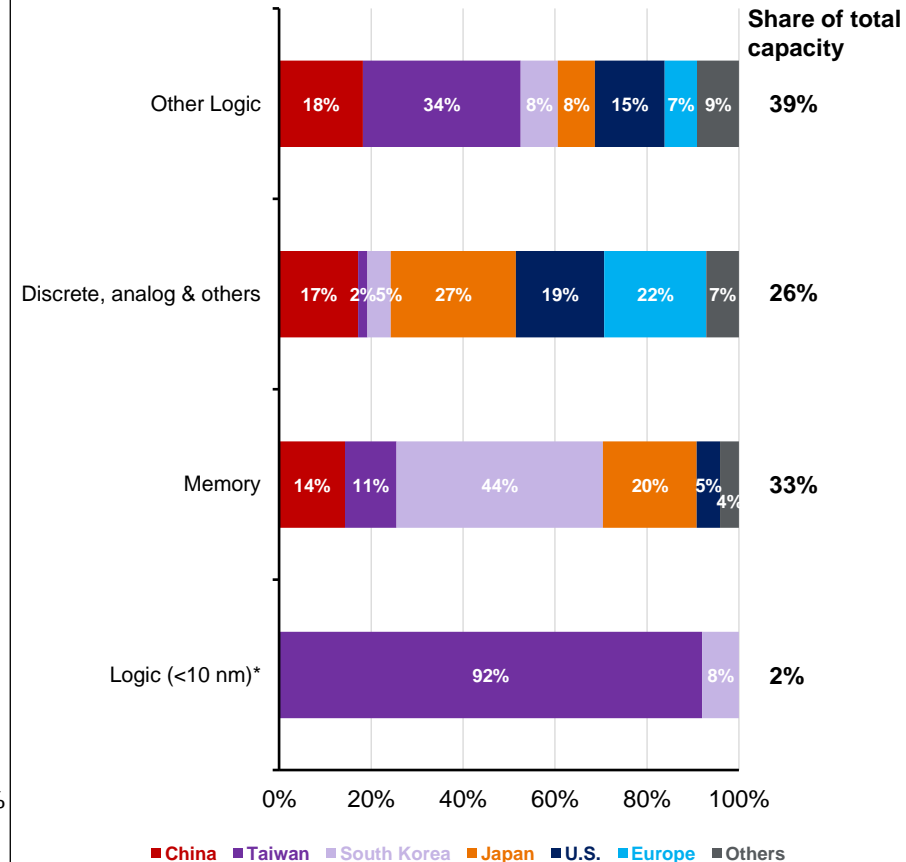
Mining production by location

% global share, 2022



Semiconductor production by type and location

% share of global semiconductor wafer fabrication capacity, 2019



Source: (Left) U.S. Geological Survey, Mineral Commodity Summaries 2023. (Right) Boston Consulting Group, SEMI Fab Database, J.P. Morgan Asset Management. *Newest generations of computing/processing wafer (since 2016), which are smaller, faster, and more power-efficient. Does not add up to 100 due to rounding.
Guide to China. Data are as of January 31, 2024.



China-U.S. relations

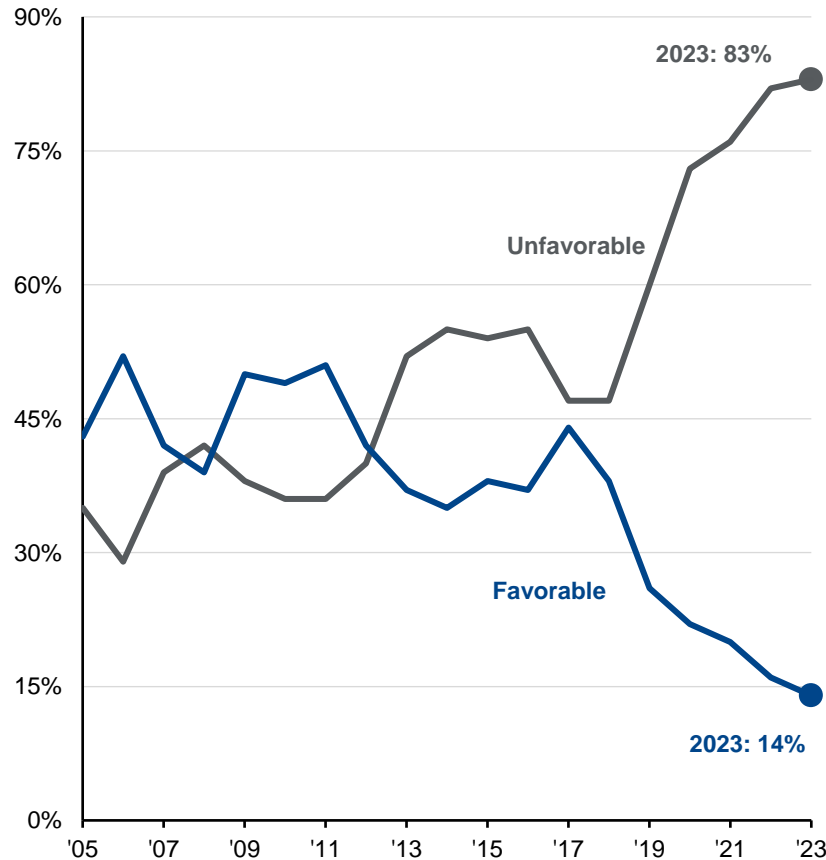
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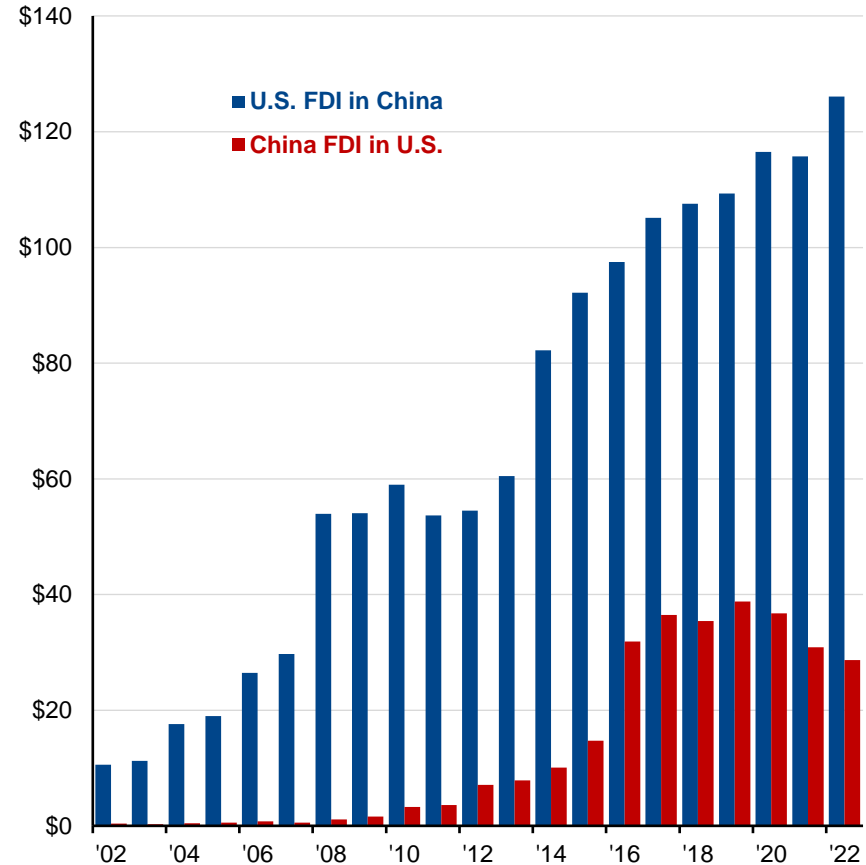
Changes in U.S. sentiment toward China

% in the U.S. who have a(n) ___ view of China



Foreign direct investment (FDI)

USD billions, foreign direct investment position



Source: J.P. Morgan Asset Management. (Left) Pew Research Center. Those who did not answer are not shown. The survey of U.S. adults was conducted in March 2023. Results were formulated by tracking the change in responses from survey participants between 2005 and 2023 to the following question: "Please tell me if you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable opinion of China?". Prior to 2020, U.S. surveys were conducted via the phone and U.S. surveys conducted after 2020 were done online. (Right) U.S. Bureau of Economy Analysis. *Guide to China*. Data are as of January 31, 2024.



Reorganization of supply chains

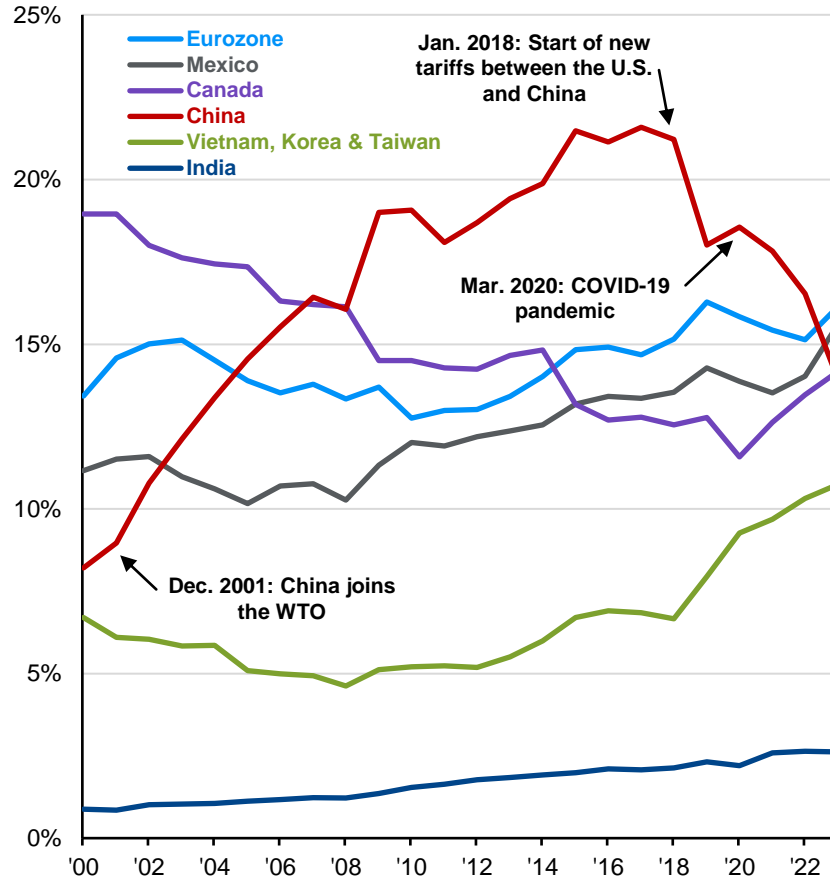
GTM

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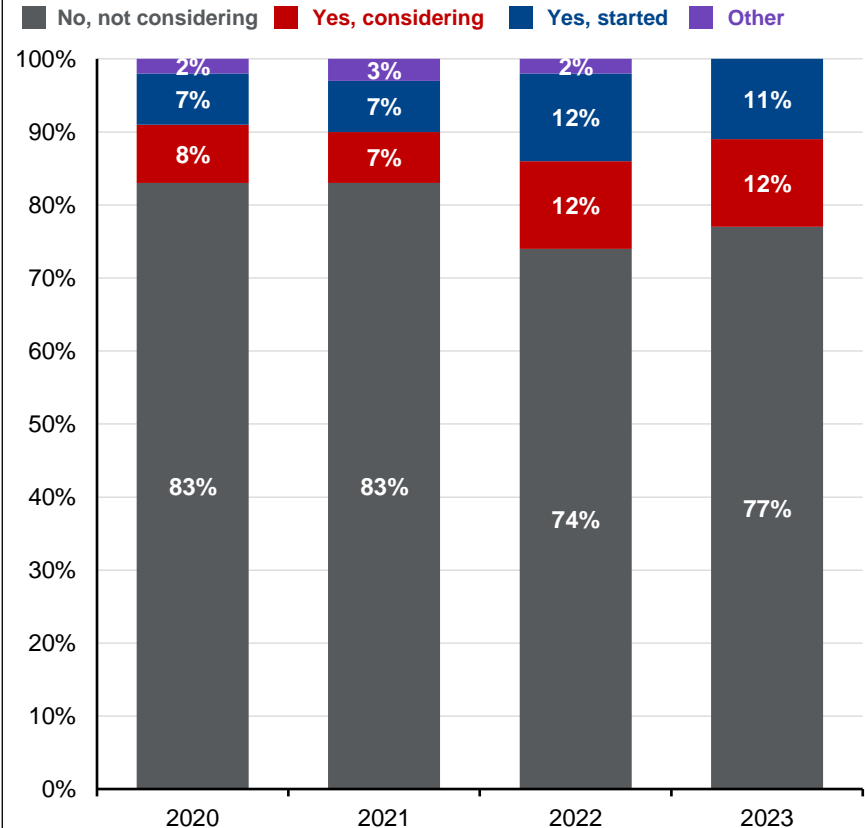
U.S. goods imports by location

% of total imports, yearly



Plans to relocate out of China

Is your company considering, or has it already begun relocating manufacturing or sourcing outside of China?*



Source: J.P. Morgan Asset Management; (Left) FactSet, U.S. Census Bureau. WTO = World Trade Organization. (Right) The American Chamber of Commerce in China 2024 China Business Climate Survey Report. *Survey conducted yearly between 2020-2023. Extended answers: 1) No, we are not considering relocating manufacturing or sourcing out of China, 2) Yes, we are considering relocating but have not taken active steps to relocate manufacturing or sourcing outside China yet, 3) Yes, we have started the process of relocating manufacturing or sourcing outside of China, 4) Other. Guide to China. Data are as of January 31, 2024.



China mobility and domestic tourism

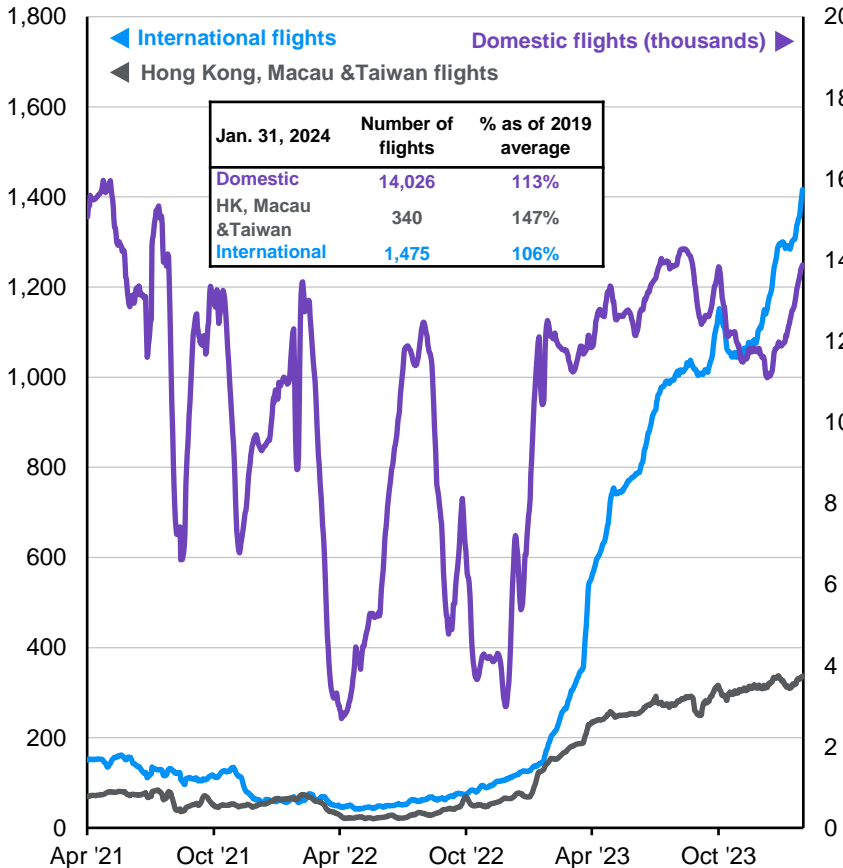
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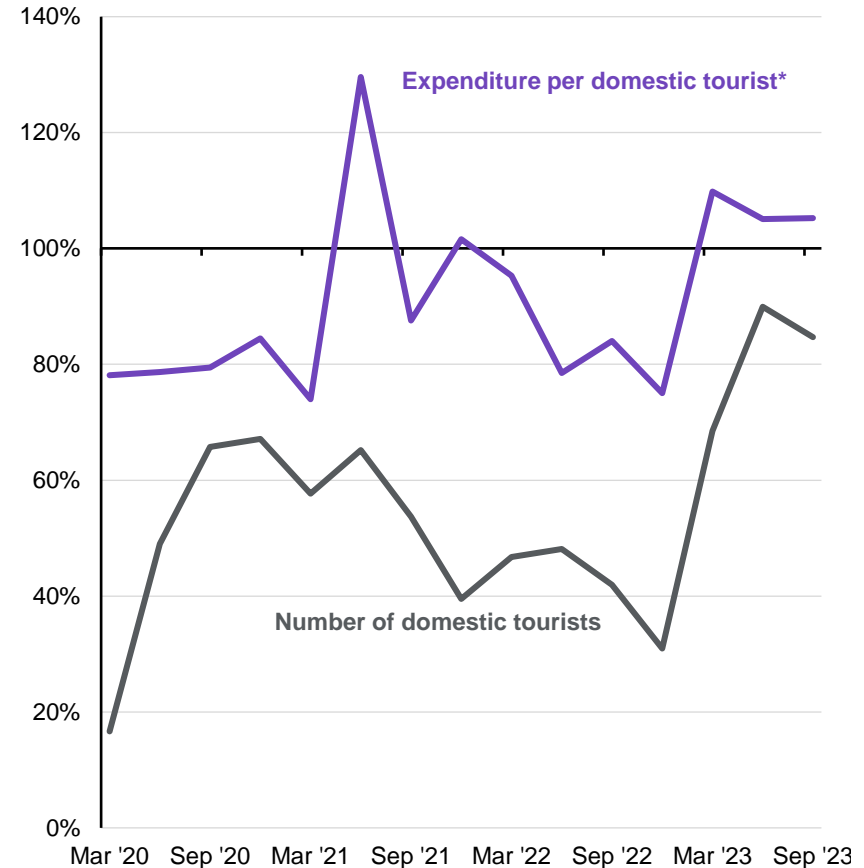
Daily flights dispatched

Number of flights, 7-day moving average



Domestic tourism

Relative to respective quarters in 2019



Source: J.P. Morgan Asset Management; (Left) Civil Aviation Administration of China, Wind; (Right) Ministry of Culture and Tourism, CEIC. *The data include all expenses of Chinese tourists in China during their trip (e.g. for transport, sightseeing, accommodations, food, shopping and entertainment.).
Guide to China. Data are as of January 31, 2024.



Impact of China's reopening on the world

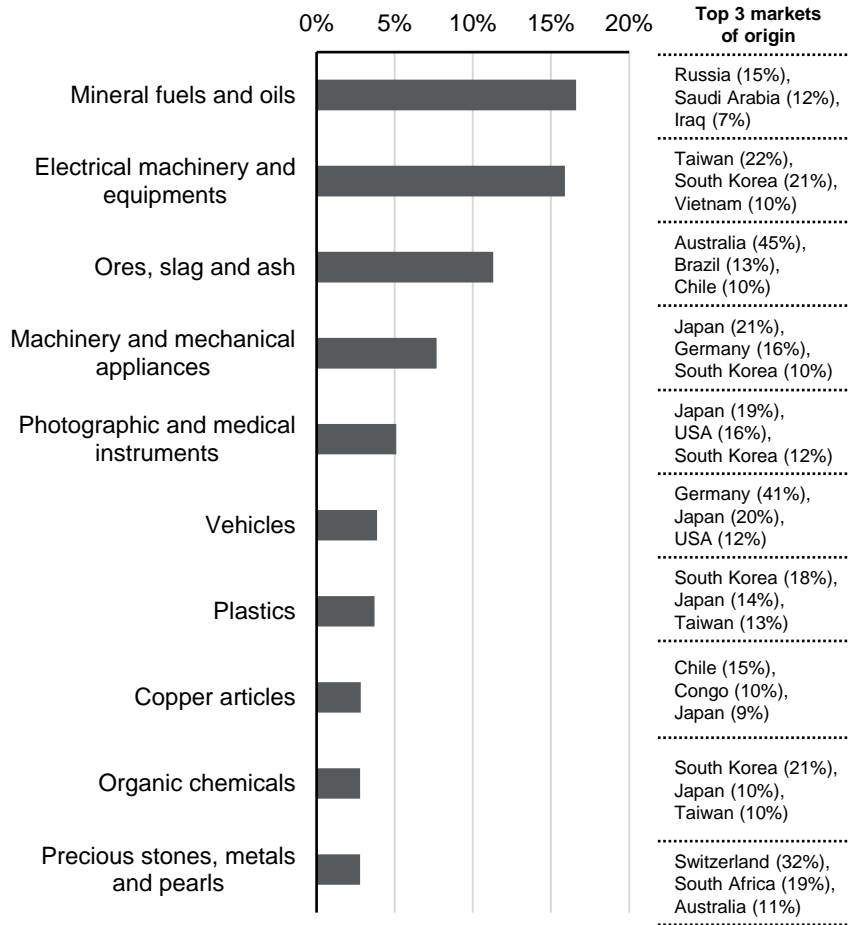
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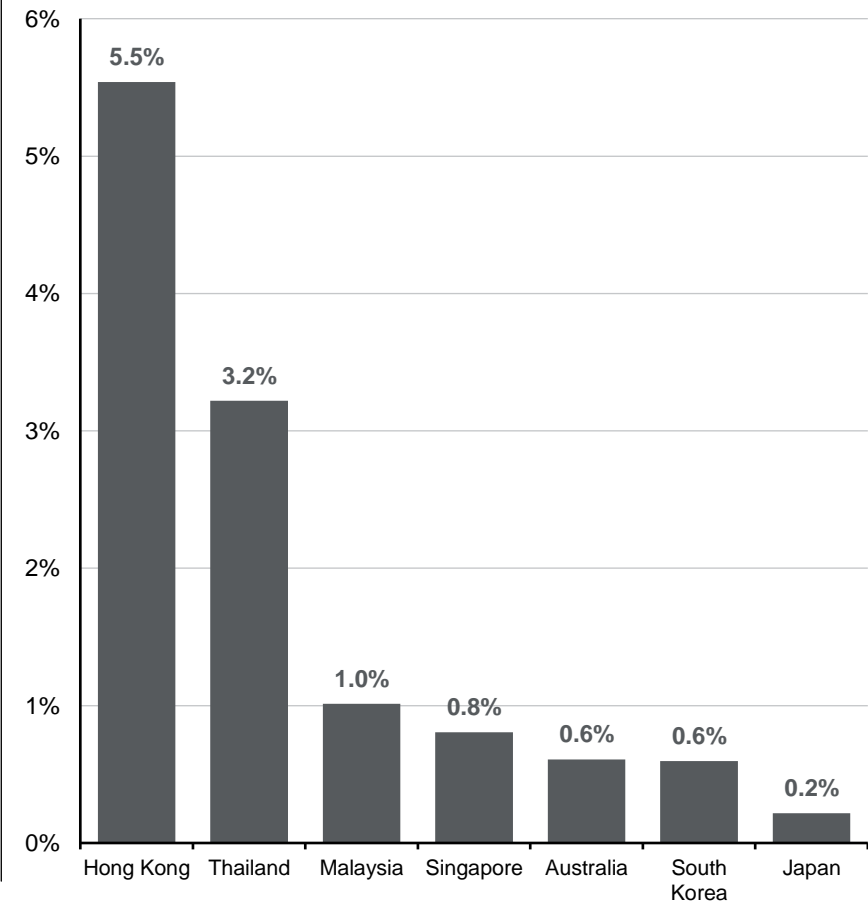
China's top 10 imported goods categories

% of total gross goods import value*, 2021



Asia markets' dependence on Chinese tourists

Chinese tourist spending as % of GDP, 2019



Source: J.P. Morgan Asset Management; (Left) NBER World Trade Flows, Observatory of Economic Complexity; (Right) CEIC, FactSet, Development of Tourism Thailand, General Statistics Office Vietnam, Tourism Malaysia, Korea Tourism Organization, Tourism Research Australia, Hong Kong Tourism Board, Singapore Tourism Board, Japan National Tourist Organization. *Total import value includes processing trade value. Guide to China. Data are as of January 31, 2024.



Purchasing Managers' Index

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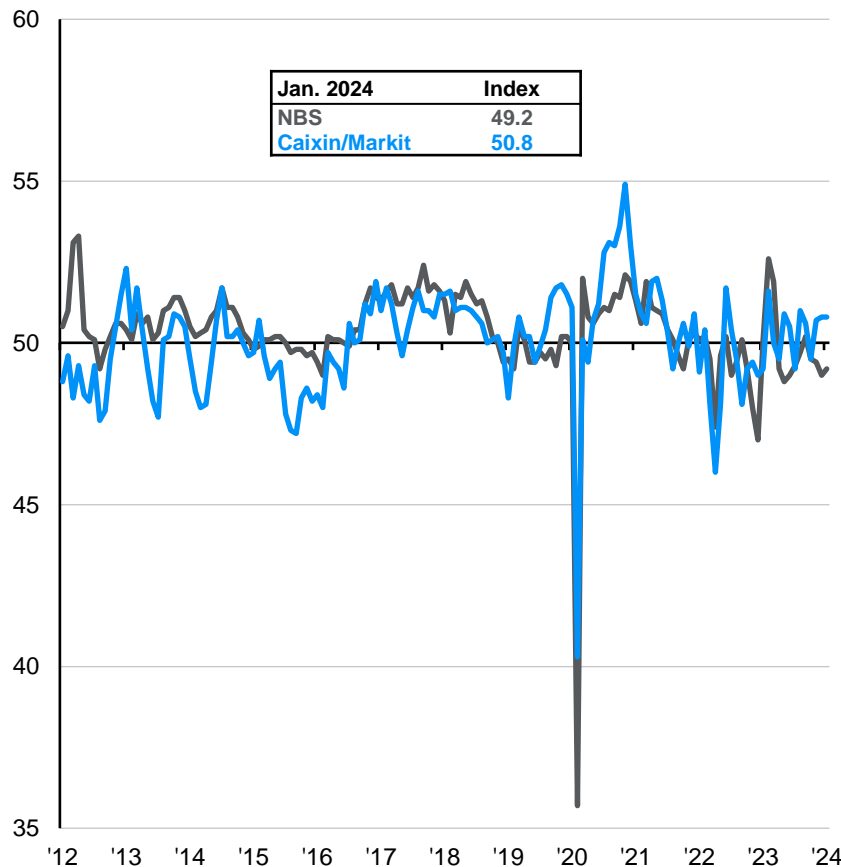
GTC

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Cyclical Indicators

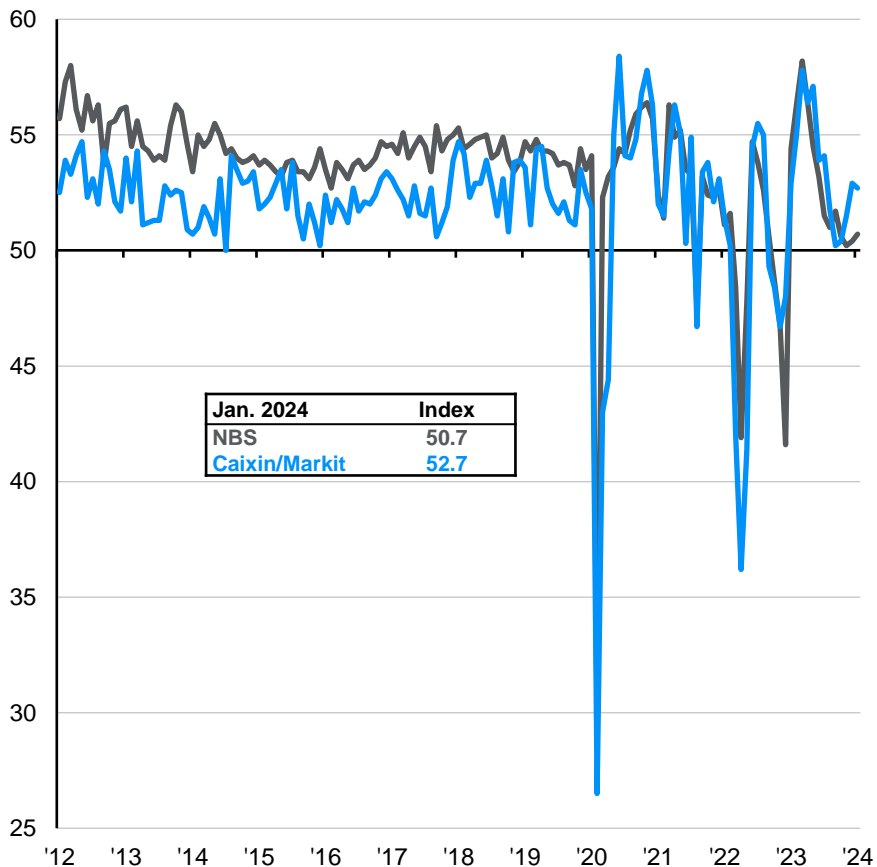
Manufacturing PMIs

Index



Services PMIs

Index



Source: Caixin/Markit, National Bureau of Statistics of China, J.P. Morgan Asset Management.

"NBS" = National Bureau of Statistics of China. A reading above 50 represents expansion in activity versus the previous month and a reading below 50 represents deceleration in activity versus the previous month. A reading of 50 represents no change. Caixin/Markit PMI surveys 500 mainly small and medium sized enterprises, while the NBS PMI surveys 3,000 companies, including state-owned enterprises, and is biased toward large-sized enterprises.

Guide to China. Data are as of January 31, 2024.

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Fixed asset investment

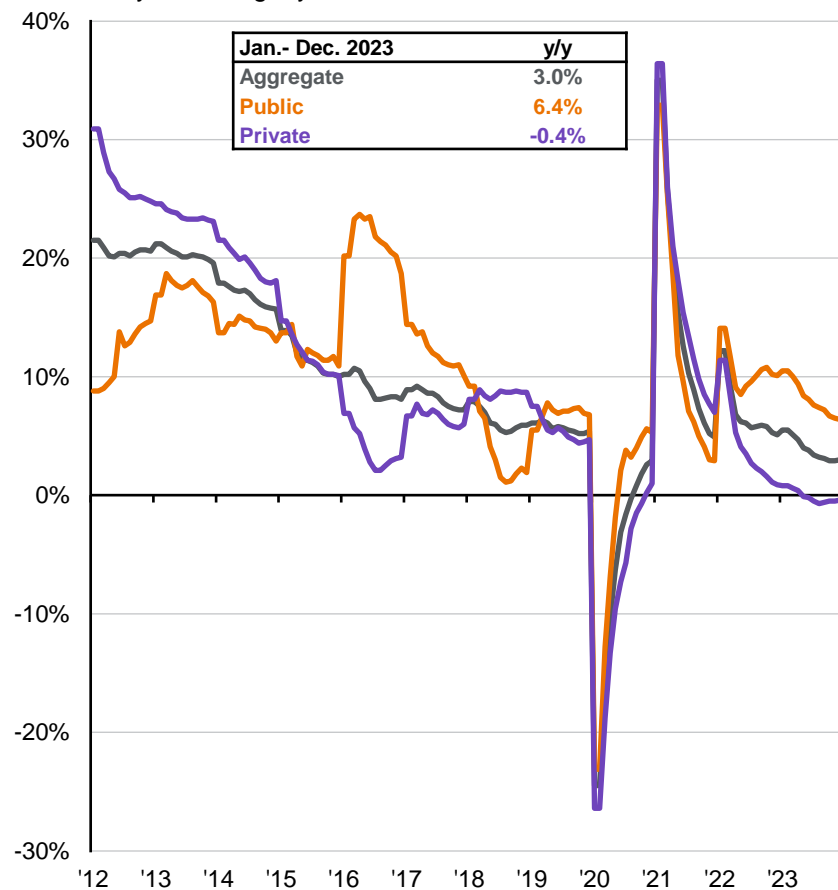
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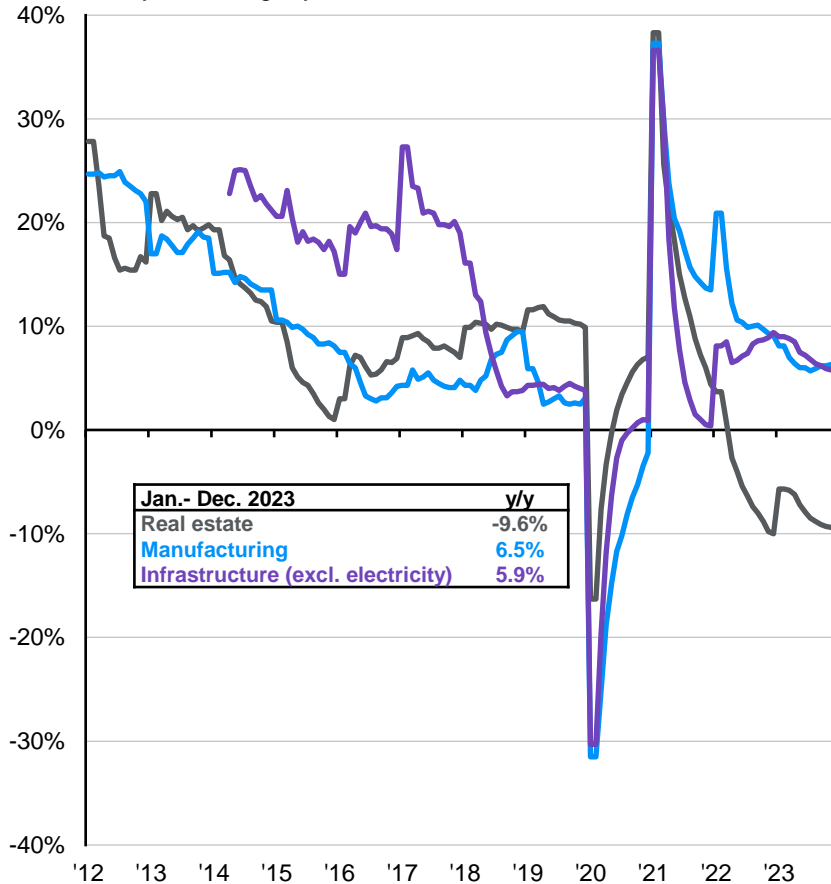
Fixed asset investment

Year-over-year change, year-to-date



Fixed asset investment by sector

Year-over-year change, year-to-date



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.



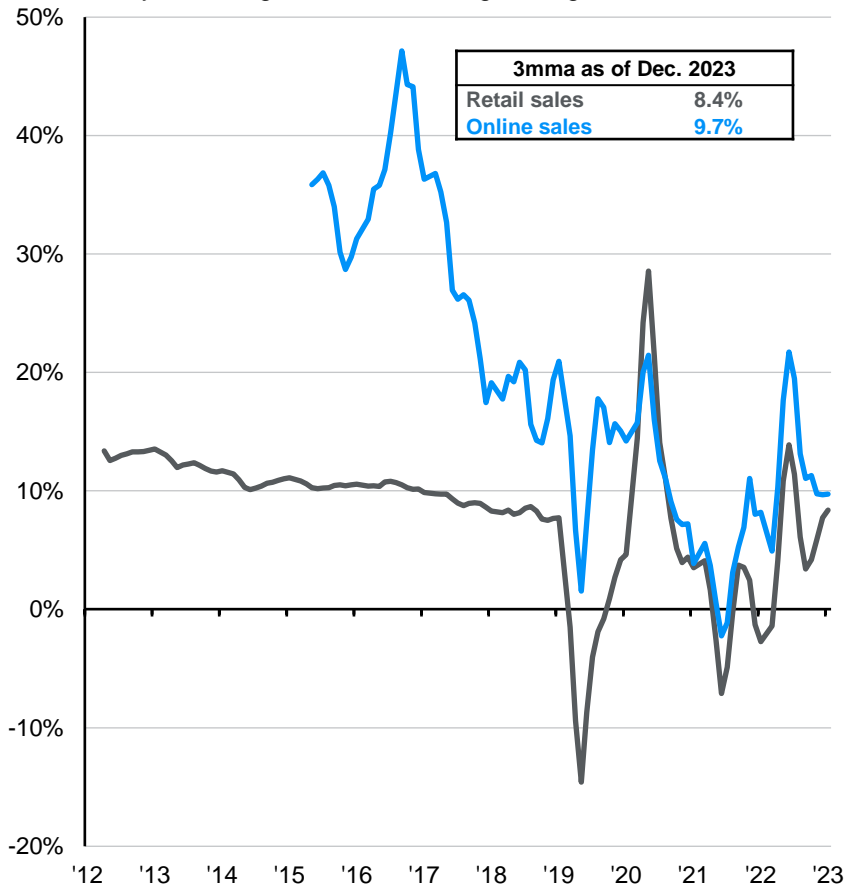
Consumption

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Cyclical Indicators

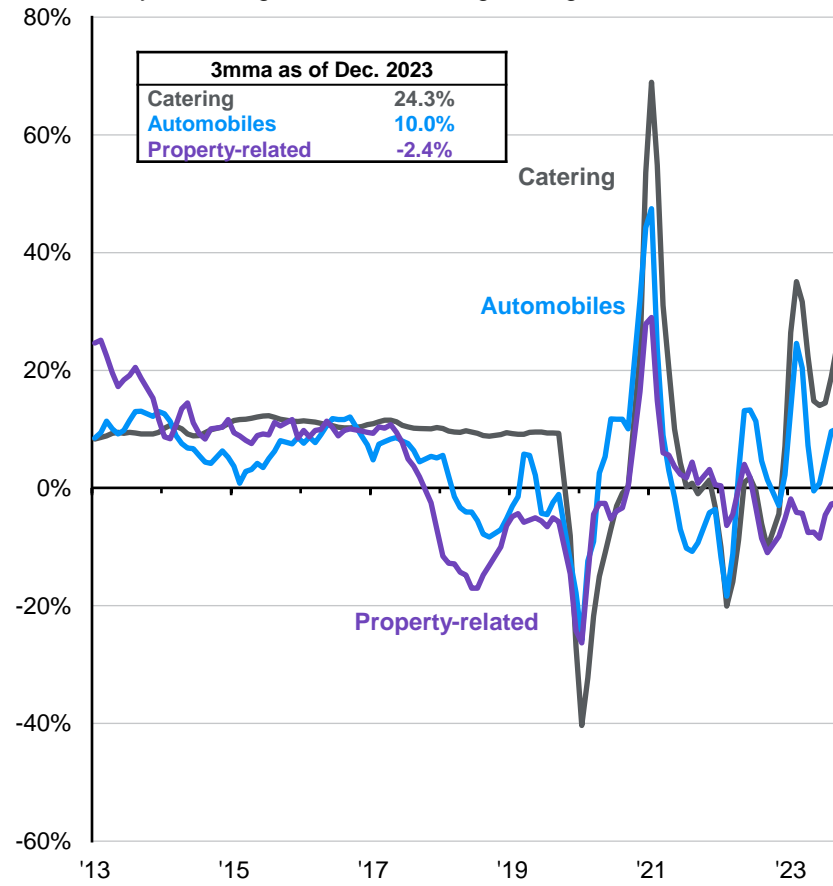
Consumption

Year-over-year change, 3-month moving average



Consumption in key categories*

Year-over-year change, 3-month moving average



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management.

*Catering refers to catering revenue in total retail sales of consumer goods. Data on automobiles and property-related products refer to sub-item indicators in the total retail sales of consumer goods. Property-related products include furniture, construction and decoration materials, electrical appliances and audio-visual equipment.

Guide to China. Data are as of January 31, 2024.

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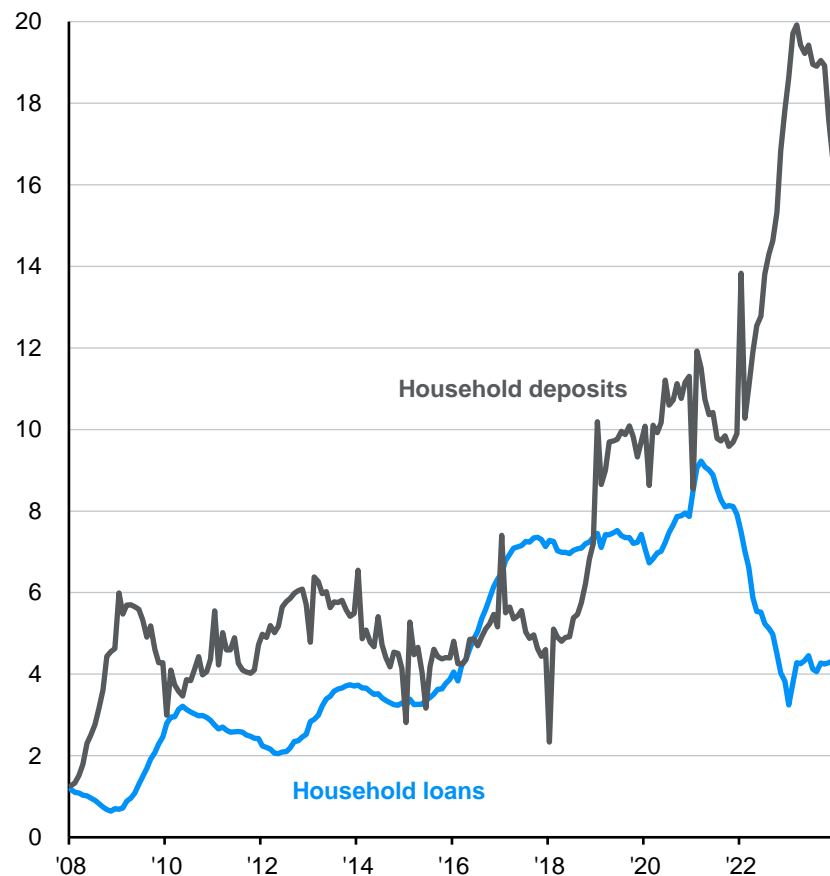
Consumer balance sheets

GTM GTC 31

Cyclical Indicators

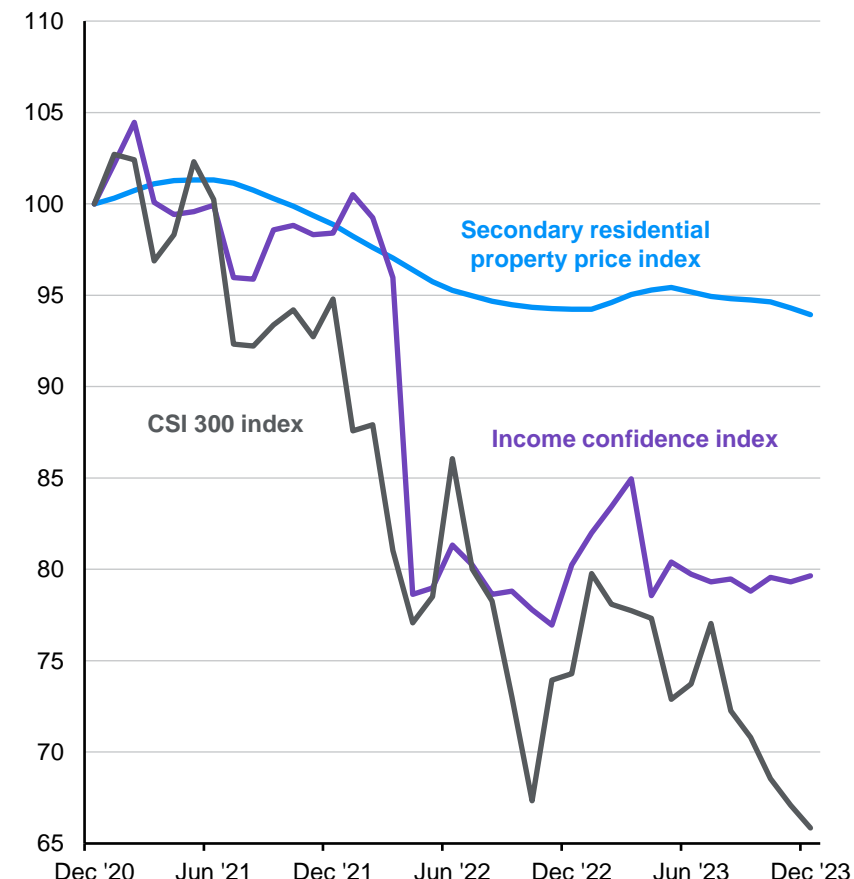
Household deposits and loans

Trillion CNY, rolling 12 months



Consumer income and wealth effect

Dec. 2020 = 100



Source: J.P. Morgan Asset Management. (Left) PBoC, Wind. (Right) CEIC, FactSet, National Bureau Statistics of China. Guide to China. Data are as of January 31, 2024.



Consumer confidence and business expectations

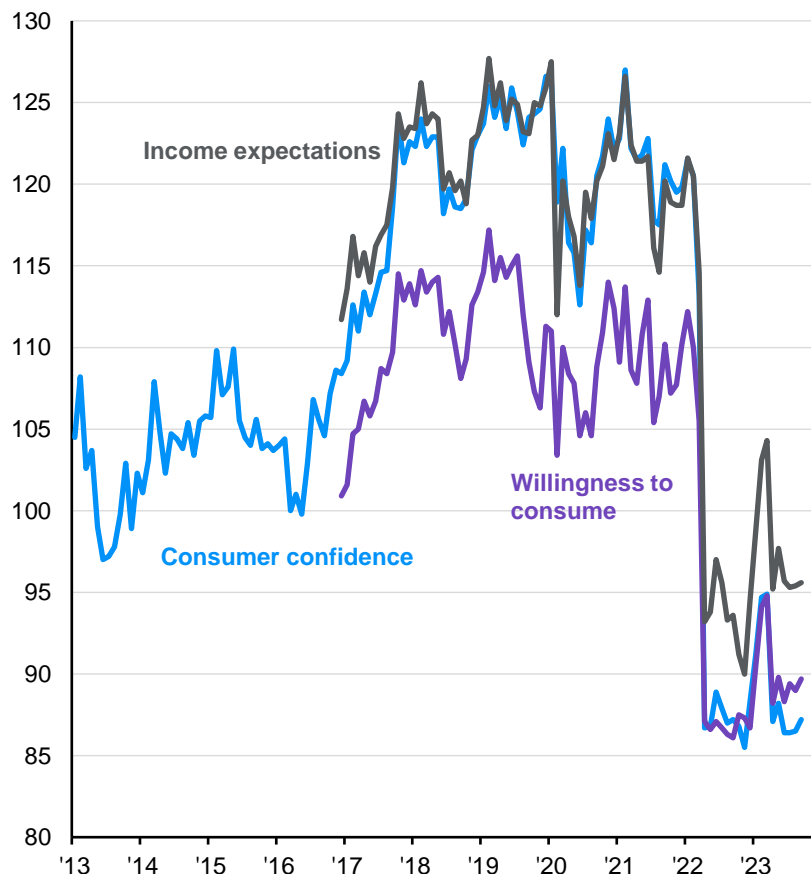
GTM

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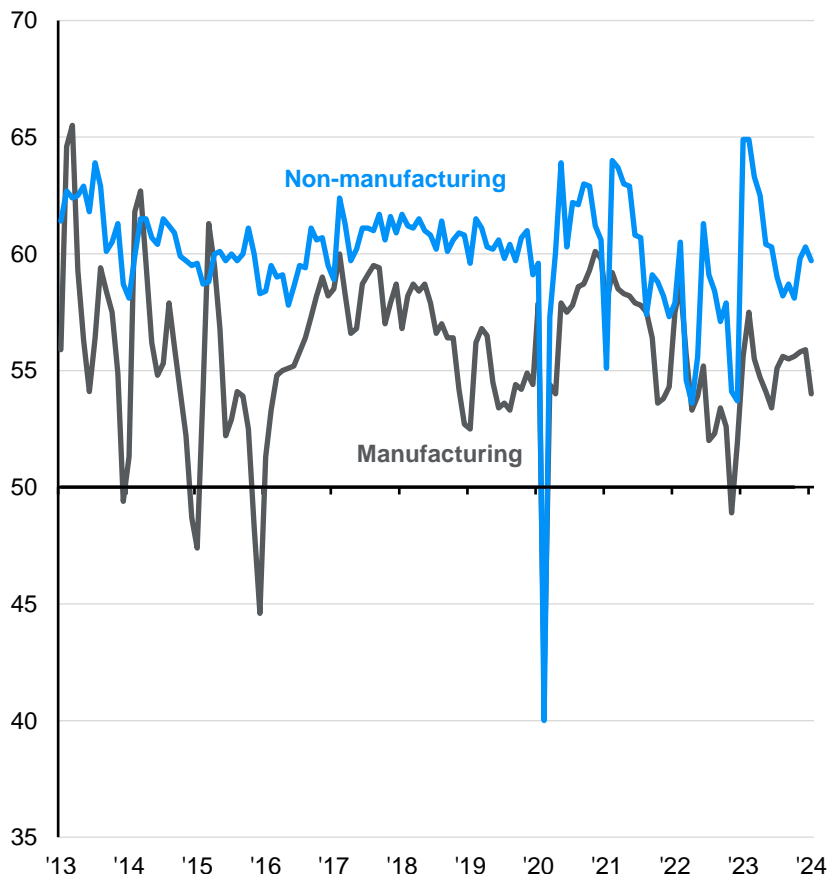
Consumer confidence

Index



PMI business expectation sub-index

Index



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management. (Left) Wind. (Right) PMI is the Purchasing Managers' Index. A reading above 50 represents expansion in activity versus the previous month and a reading below 50 represents deceleration in activity versus the previous month. A reading of 50 represents no change. *Guide to China*. Data are as of January 31, 2024.



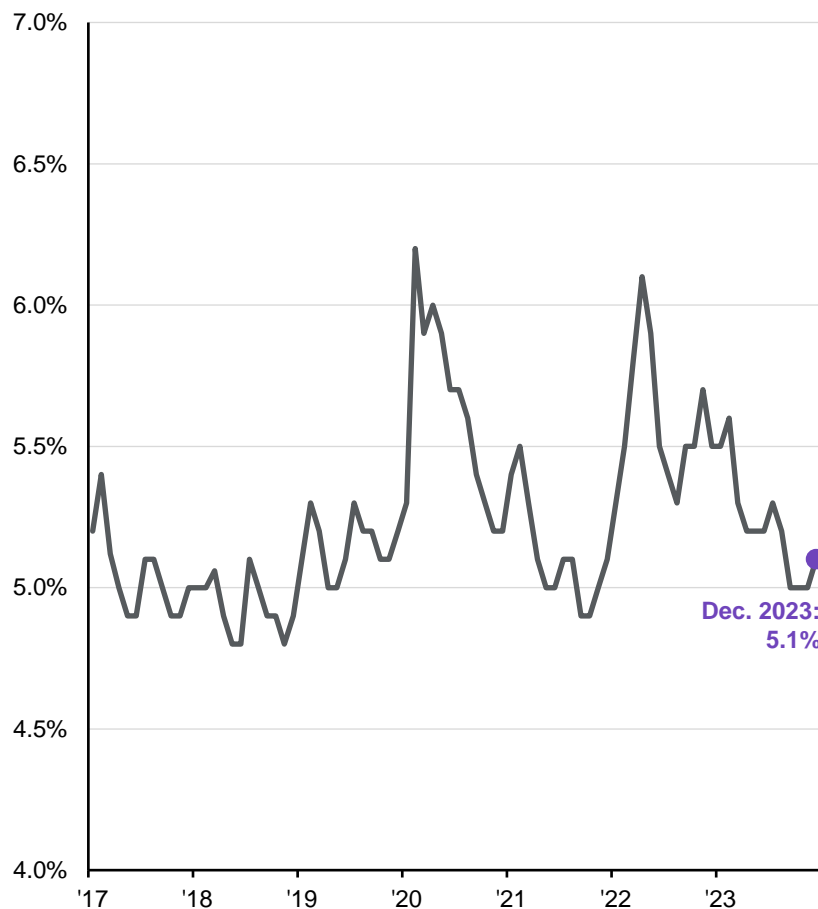
Measures of unemployment

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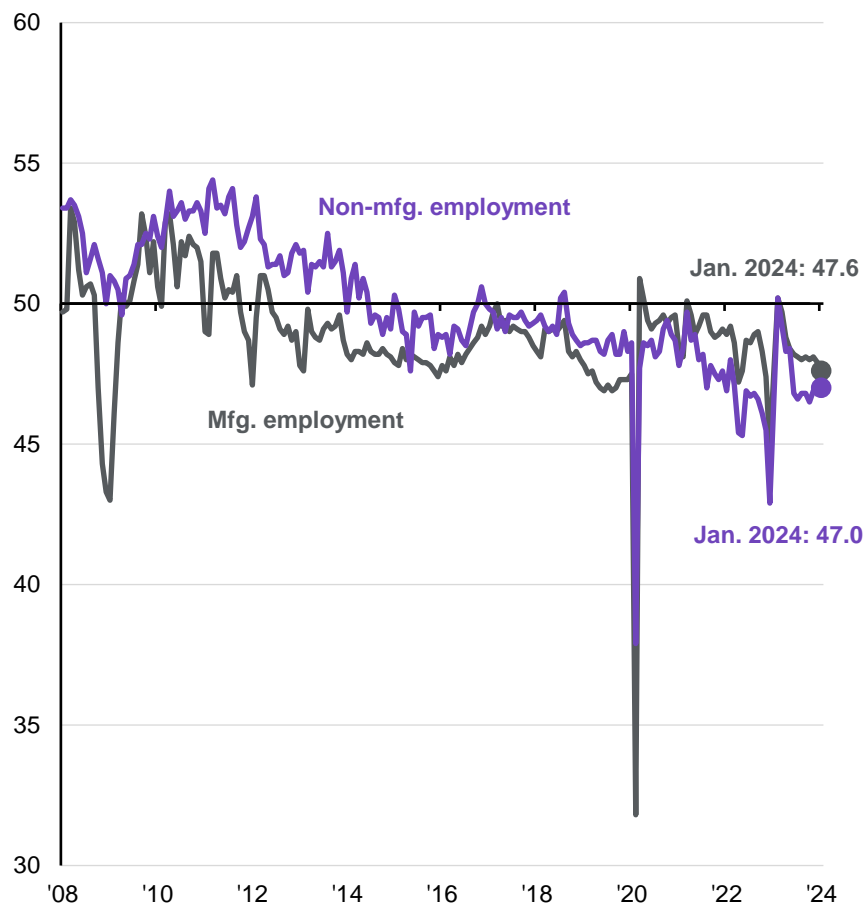
GTC

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Surveyed urban unemployment rate



Employment PMIs



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management. The urban survey unemployment rate includes a much wider definition of unemployed workers than the registered unemployment rate. The urban survey unemployment rate began in 2018 and it is now the major indicator used by policymakers for unemployment. PMI is the Purchasing Managers' Index. A reading above 50 represents greater employment versus the previous month and a reading below 50 represents greater unemployment versus the previous month. A reading of 50 represents no change.

Guide to China. Data are as of January 31, 2024.



Foreign trade

GTM

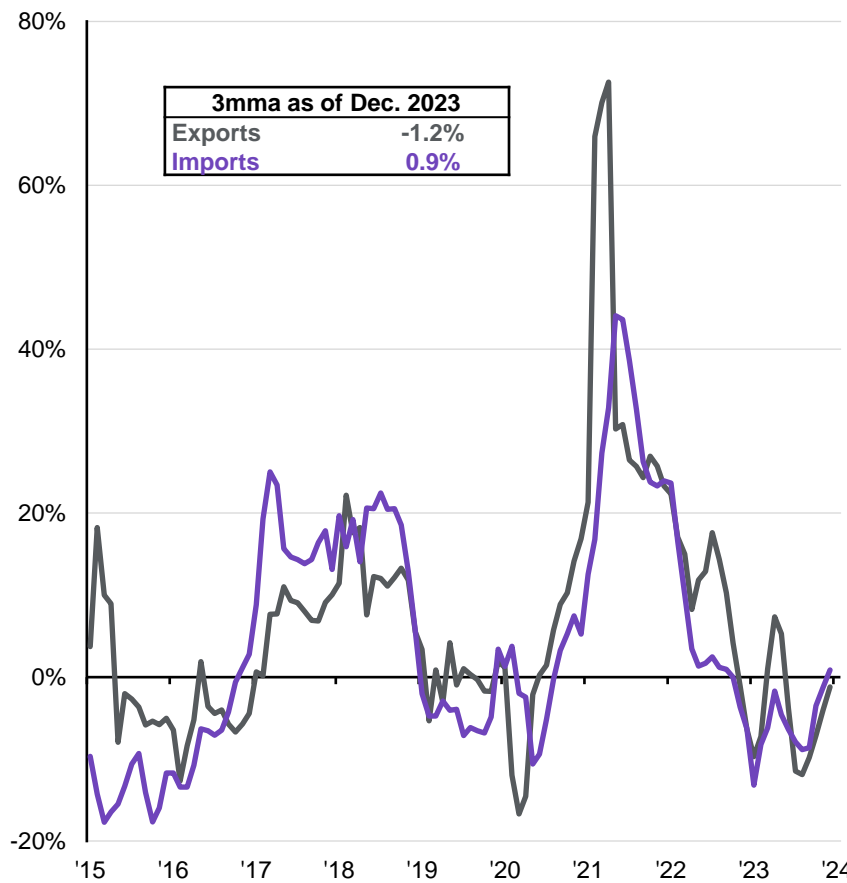
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Cyclical Indicators

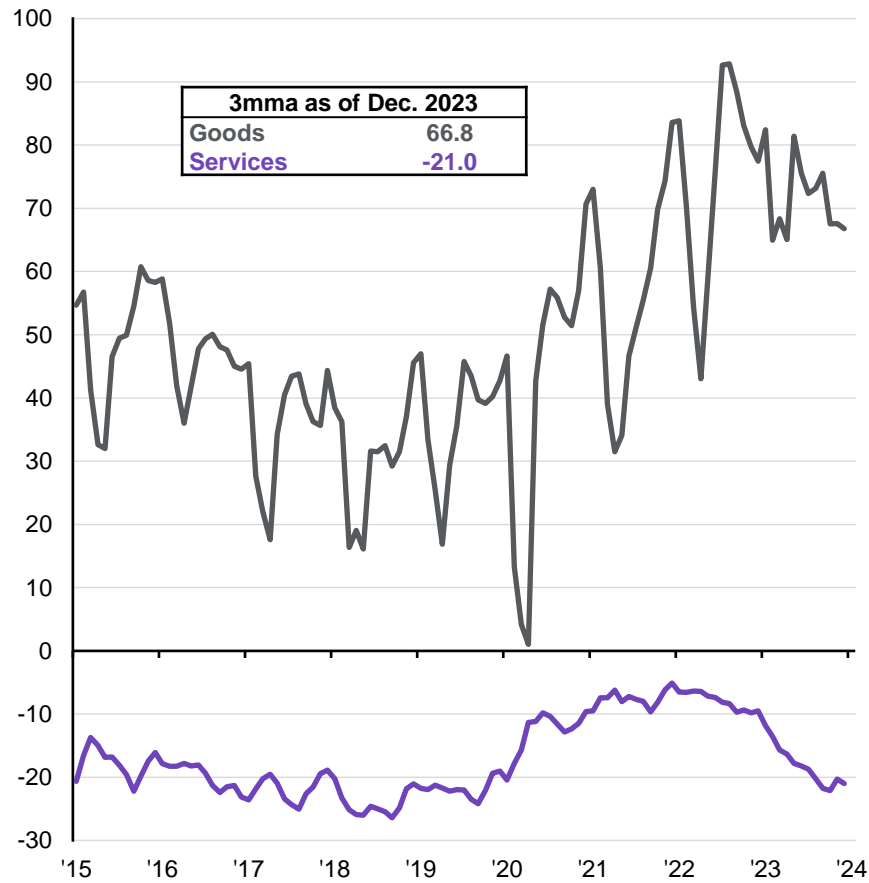
Goods trade

Year-over-year change, 3-month moving average



Balance of trade

USD billions, 3-month moving average



Source: CEIC, China Customs, J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.



Property market

GTM

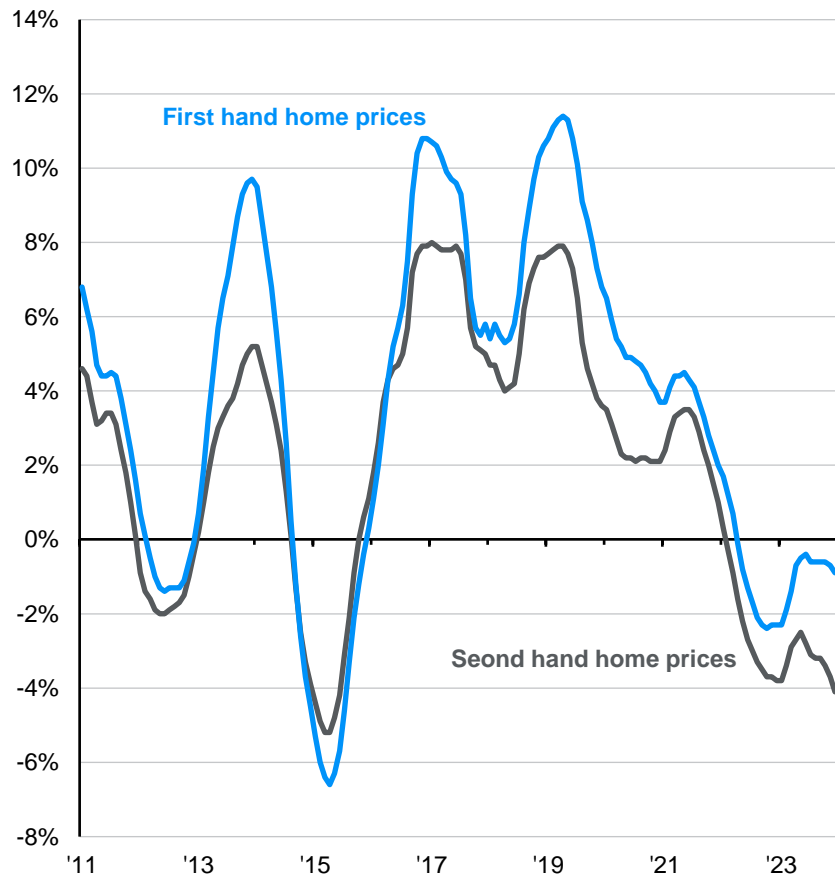
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Cyclical Indicators

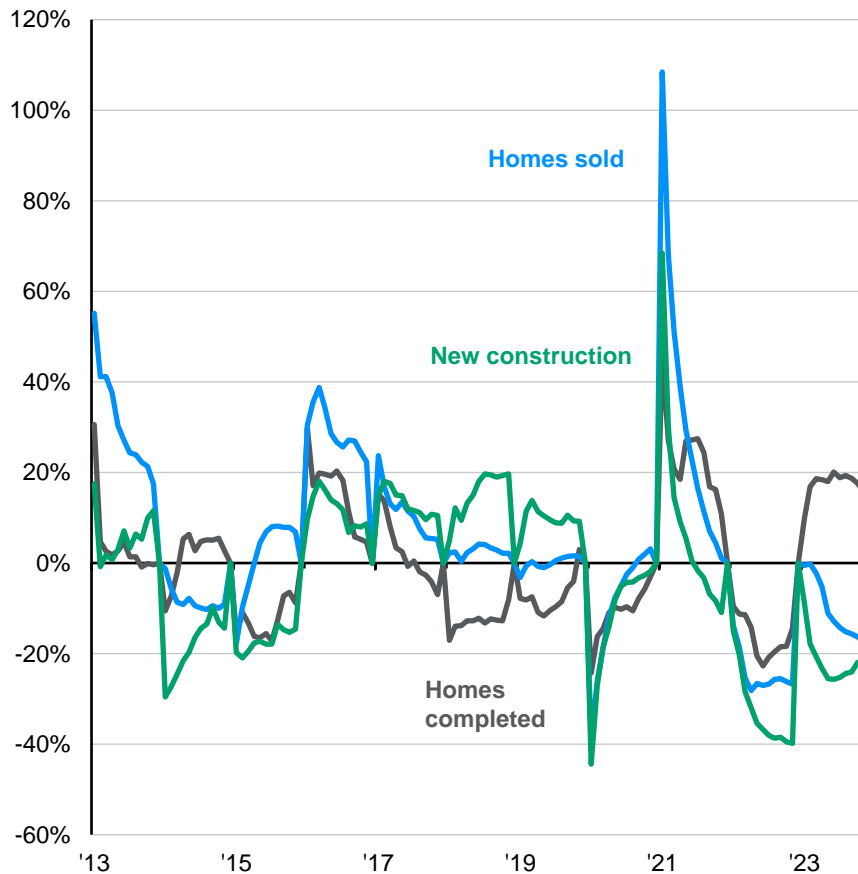
Residential property price

Year-over-year change



Residential floor space

Year-over-year change, 3-month moving average



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management. (Left) Price indices refer to residential buildings in 70 large and medium-sized cities in China.
Guide to China. Data are as of January 31, 2024.



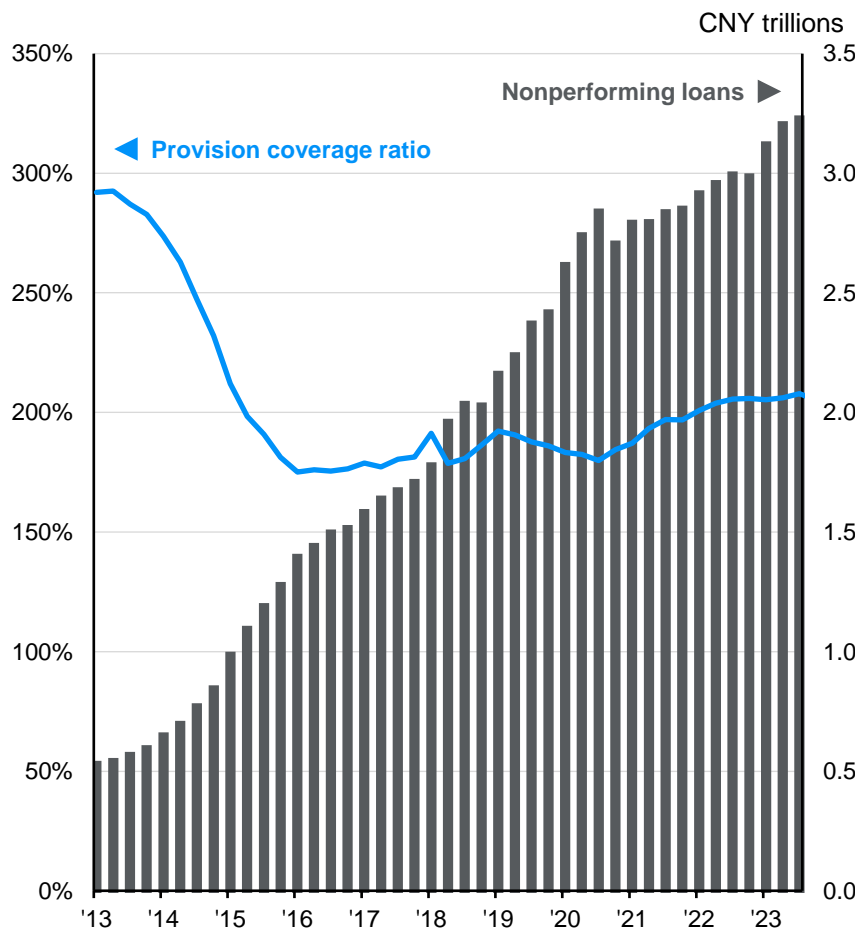
Banking sector

GTM

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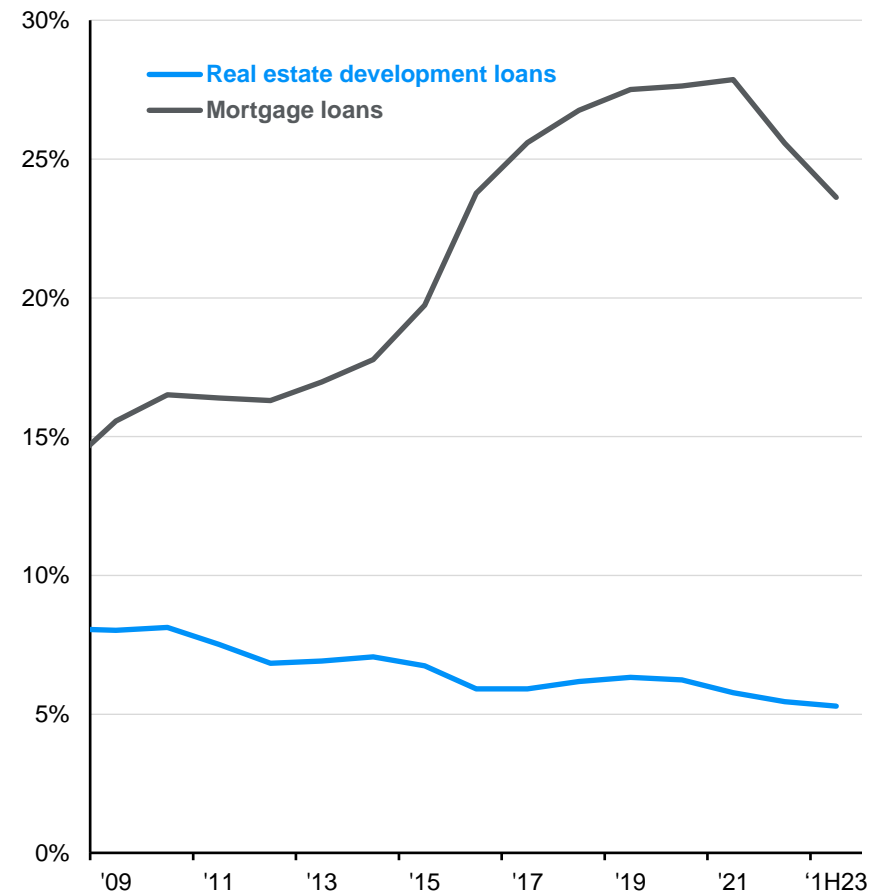
36

Nonperforming loans (NPL) of banks



Exposure to property market of 15 major banks*

% of total outstanding loans



Source: China Banking and Insurance Regulatory Commission, Wind, Corporate data, J.P. Morgan Asset Management.

(Left) Provision coverage ratio is the % of low-quality assets that a bank must cover with its own funds. (Right) CEIC. *15 major banks are Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, China Construction Bank, Bank of Communications, Postal Savings Bank, CITIC Bank, Industrial Bank, Minsheng Bank, Ping An Bank, China Merchants Bank, Hua Xia Bank, Everbright Bank, Shanghai Pudong Development Bank, Guangfa Bank. In aggregate, these banks account for 62% of total outstanding loans in Chinese banking system.

Guide to China. Data are as of January 31, 2024.



Inflation

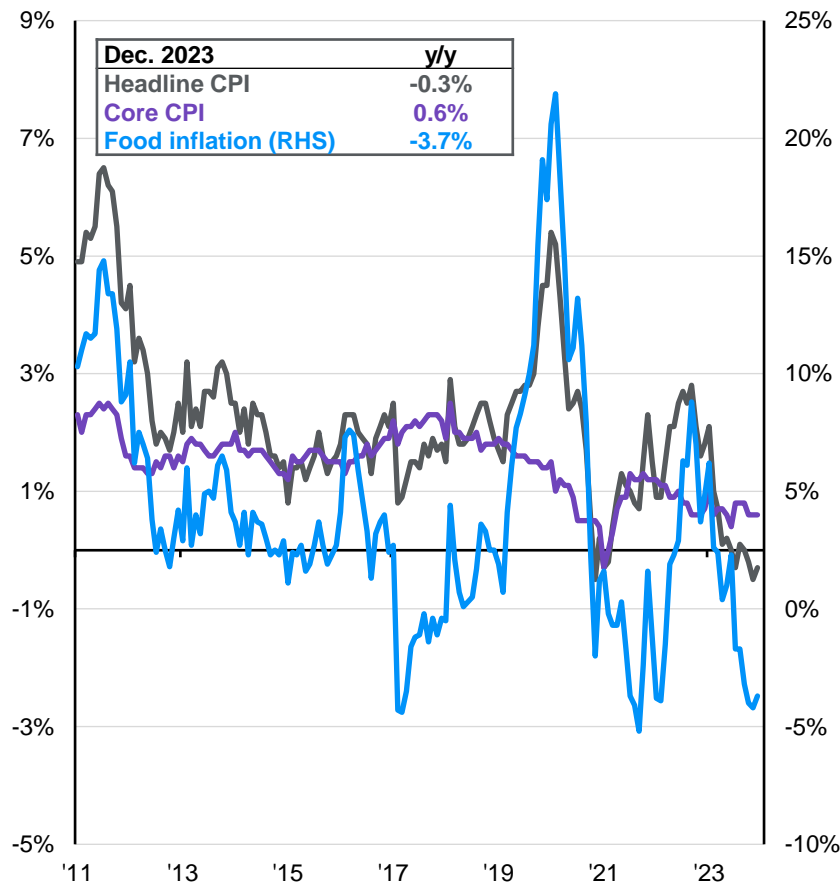
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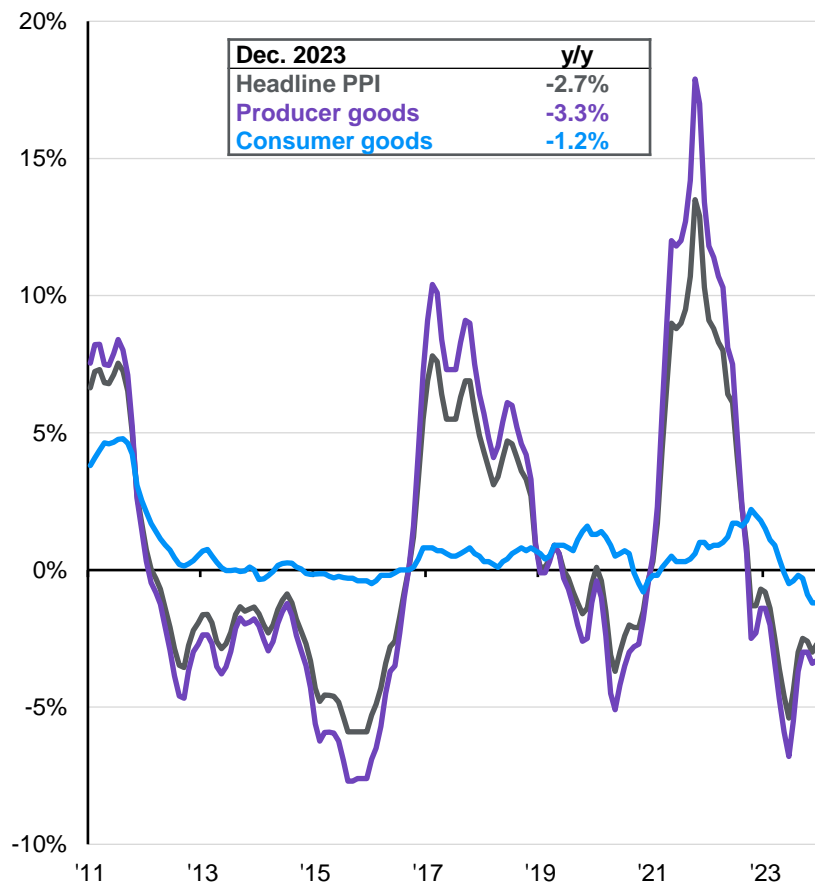
Consumer price index

Year-over-year change



Producer price index

Year-over-year change



Source: CEIC, National Bureau of Statistics of China, J.P. Morgan Asset Management Guide to China. Data are as of January 31, 2024.



Central bank operations: Liquidity injections

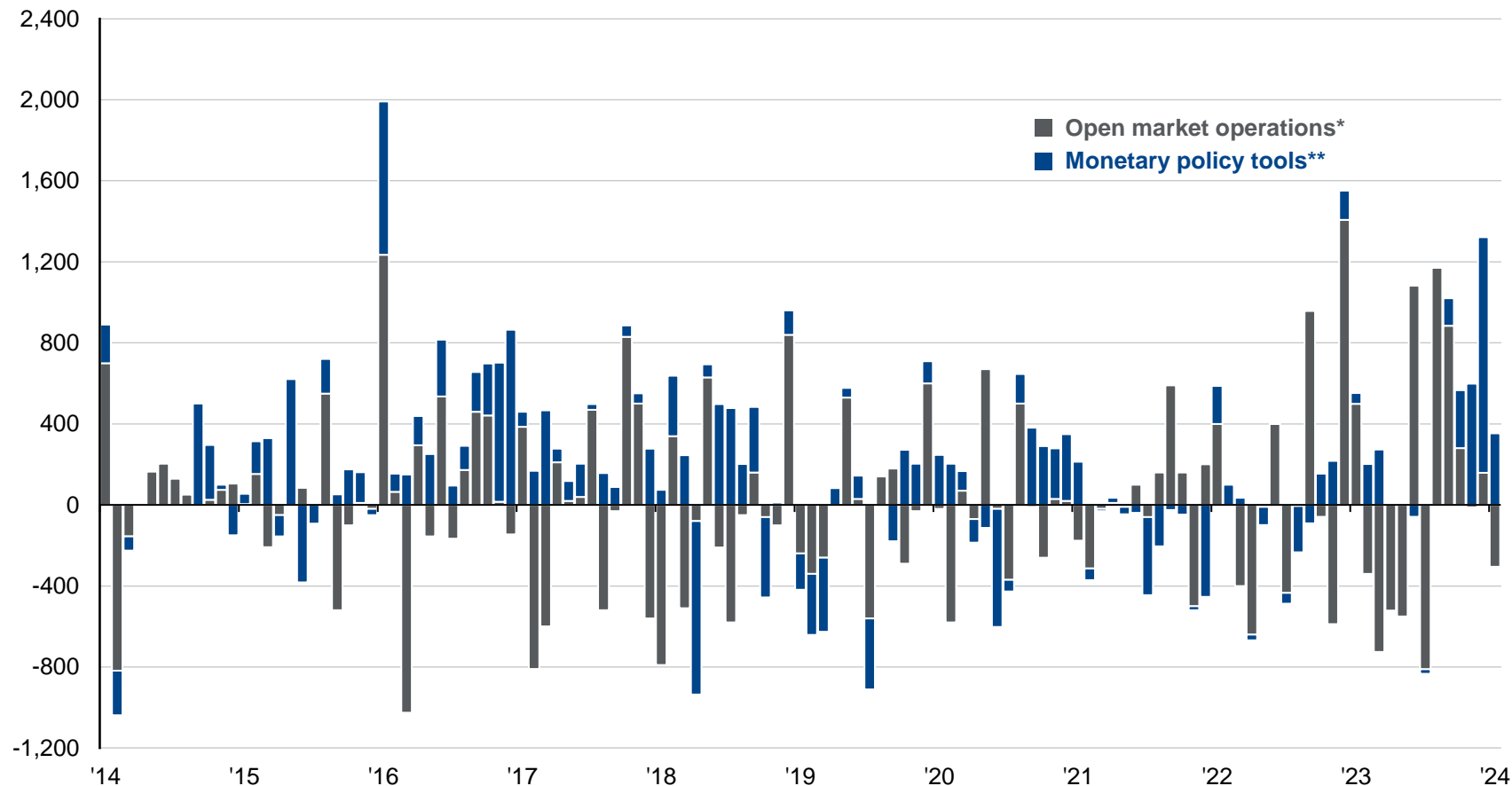
GTM

GTC

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Liquidity injections by the PBoC

CNY billions, net injection



Source: CEIC, People's Bank of China (PBoC), J.P. Morgan Asset Management.

*Open market operation (OMO) includes reverse repo, repo and central bank bill issuance by the People's Bank of China (PBoC). **Monetary policy tools include short-term liquidity operations (SLO), standing liquidity facility (SLF), medium-term liquidity facility (MLF) and pledged supplementary lending (PSL).

Guide to China. Data are as of January 31, 2024.



Central bank operations: Policy rates

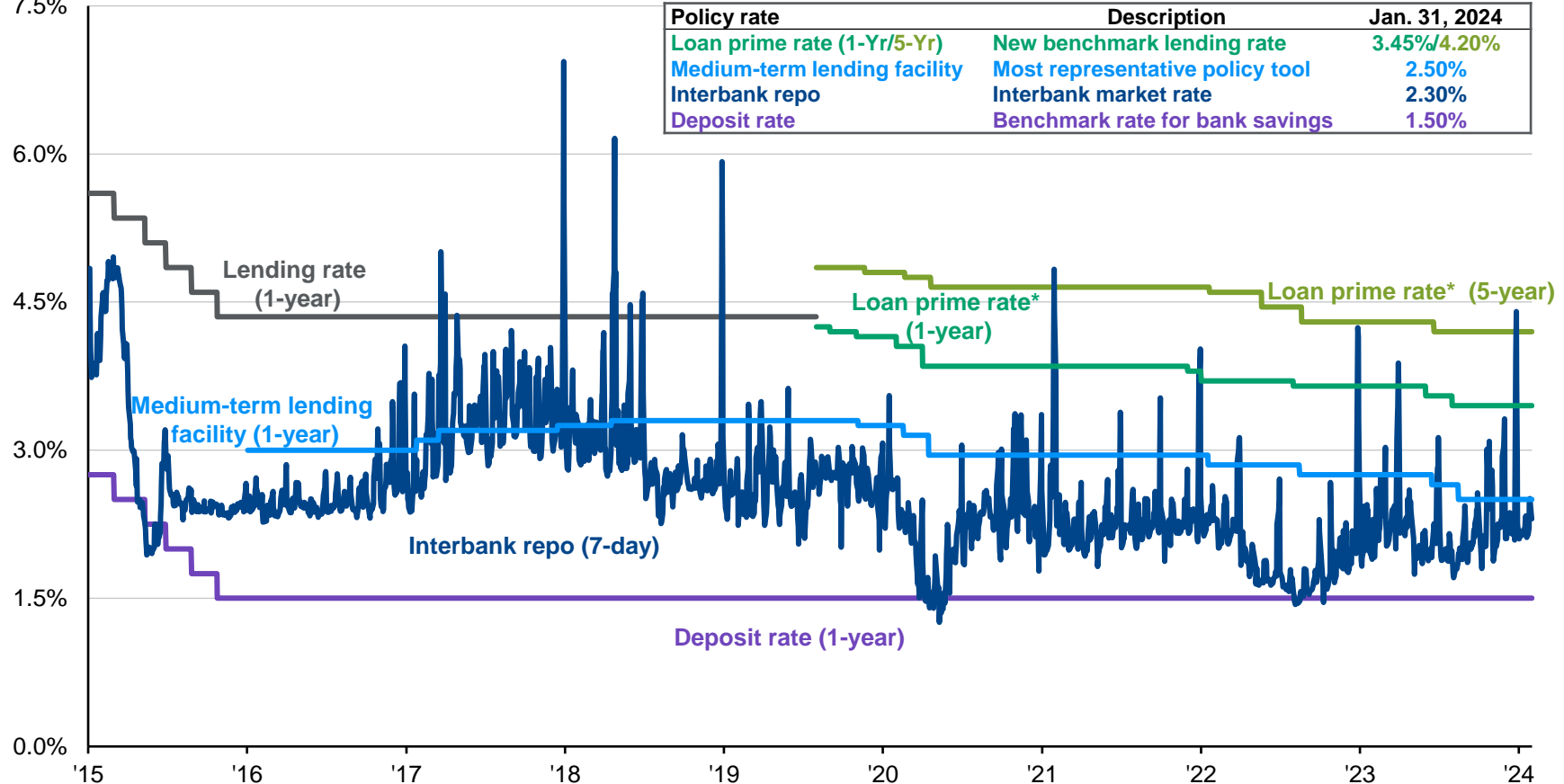
GTM

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Key policy rates

Per annum
7.5%



Monetary, Fiscal
and FX Policy

Source: CEIC, People's Bank of China (PBoC), National Interbank Funding Center, J.P. Morgan Asset Management.

*Starting from August 20, 2019, the PBoC releases a monthly 1-year and 5-year loan prime rate (LPR) based on quotes from 18 banks. For this new monthly quote, banks are required to submit them in the form of open market operation rates (especially MLF) plus a margin to the national inter-bank lending center. The central bank requests all commercial banks to reference the finalized LPR to price their new lending and use LPR as the benchmark rate in floating rate loan contracts going forward.

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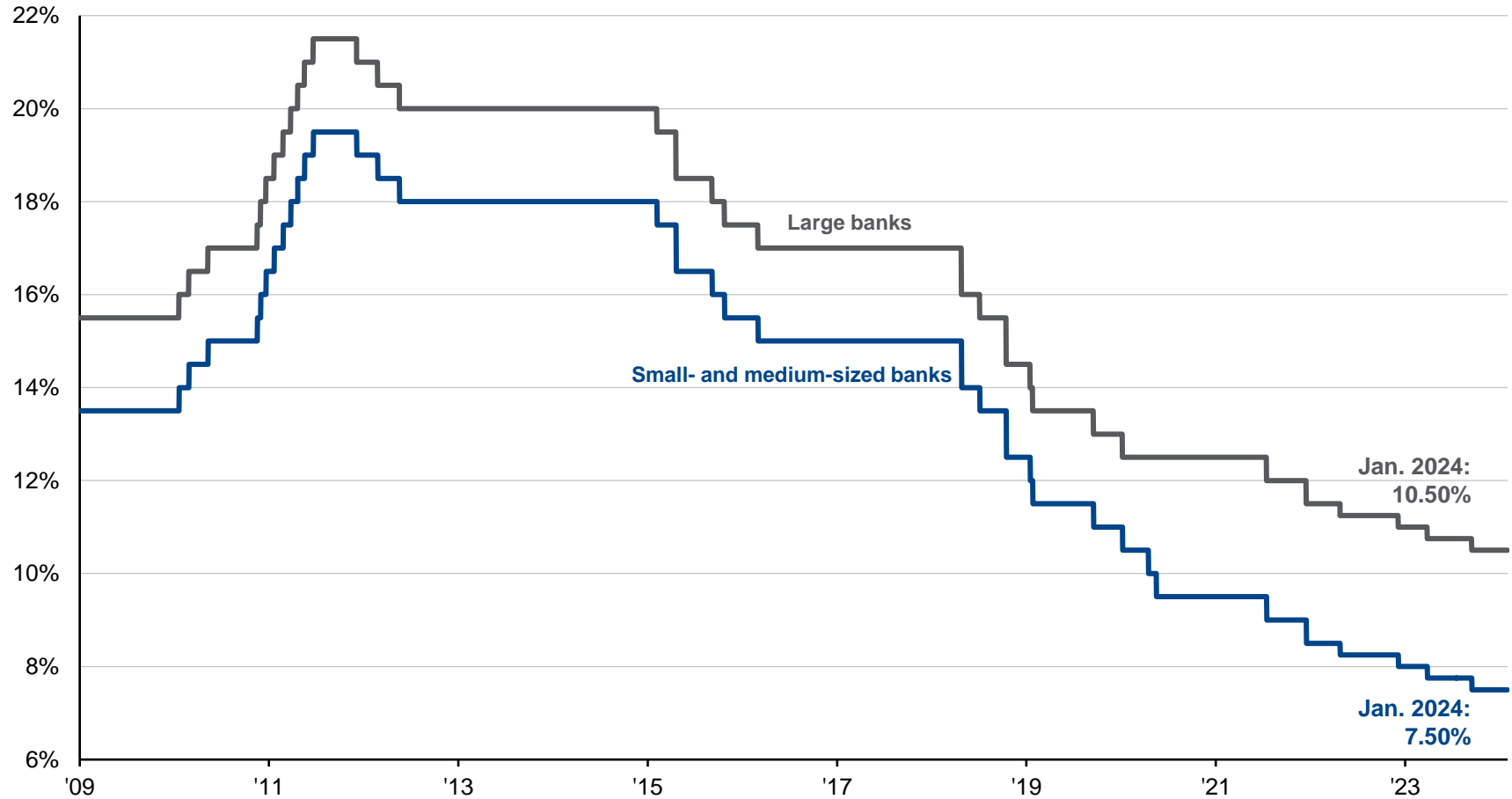
Central bank operations: Reserve requirements

GTM

GTC

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Reserve requirement ratio (RRR)



Source: CEIC, People's Bank of China (PBoC), J.P. Morgan Asset Management.

Large banks are six major banks in China, including Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, China Construction Bank, Bank of Communications, Postal Savings Bank of China. The other banks are categorized as small- and medium-sized banks. PBoC sets favorable required reserve ratio for banks which have met specific criteria, such as loans to small and medium-sized enterprises and agricultural sectors. These measures have significantly brought down the actual RRR for banks. Does not include the RRR cut effective February 5, 2024, of 50bps for both large and small- and medium-sized banks.

Guide to China. Data are as of January 31, 2024.



Credit conditions

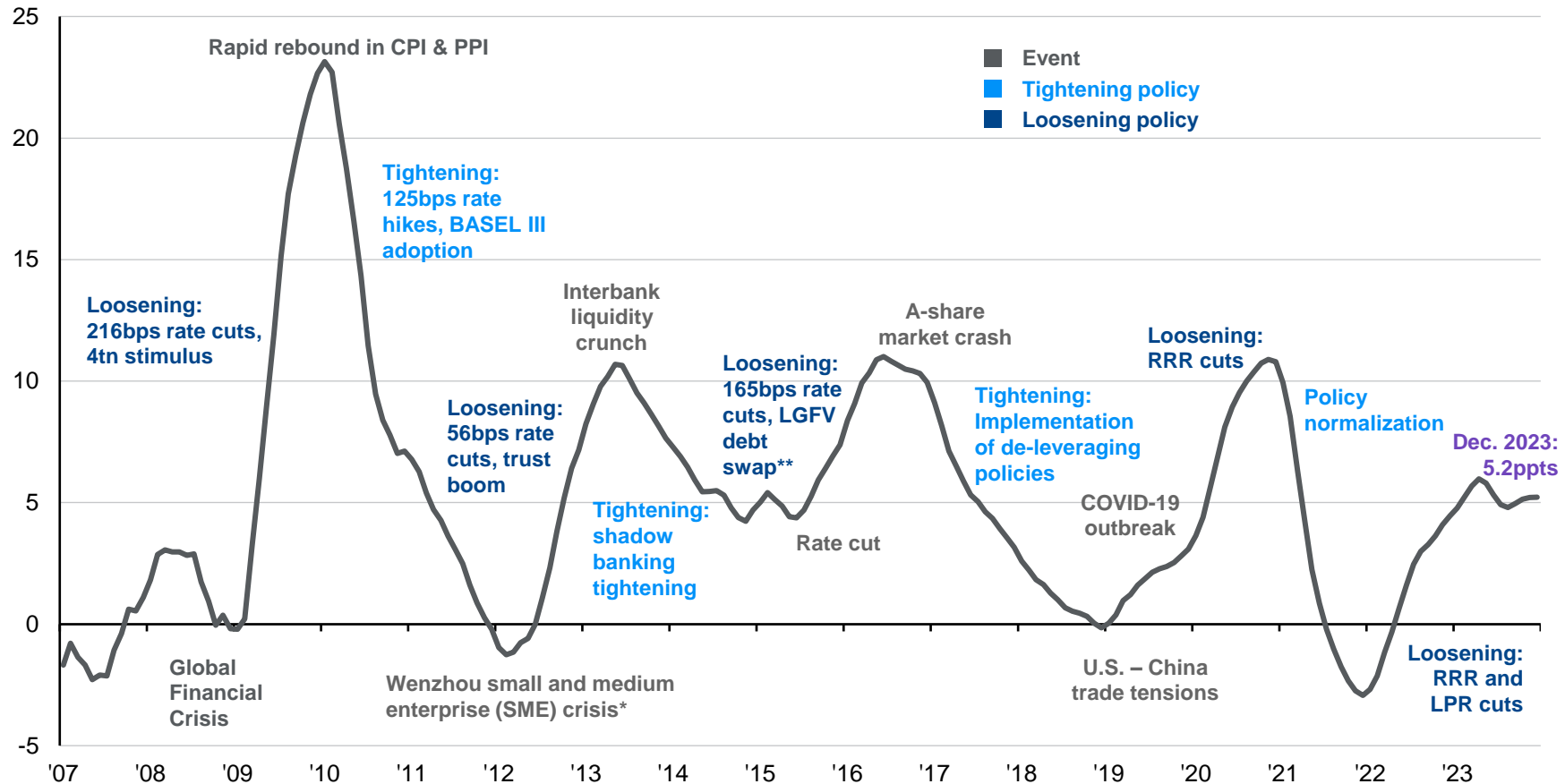
GTM

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Credit cycles

Percentage points, credit growth – nominal GDP growth, 3-month moving average



Source: CEIC, People's Bank of China, J.P. Morgan Asset Management.

Credit growth measures the year-over-year growth of outstanding total social financing. *Wenzhou SME crisis refers to the wave of bankruptcies and funding problems faced by a large number of SMEs in Wenzhou in 2011. **LGFV refers to local government financing vehicle. "RRR" = Reserve requirement ratio. "LPR" = Loan Prime Rate.

Guide to China. Data are as of January 31, 2024.



Credit impulse and commodity prices

GTM

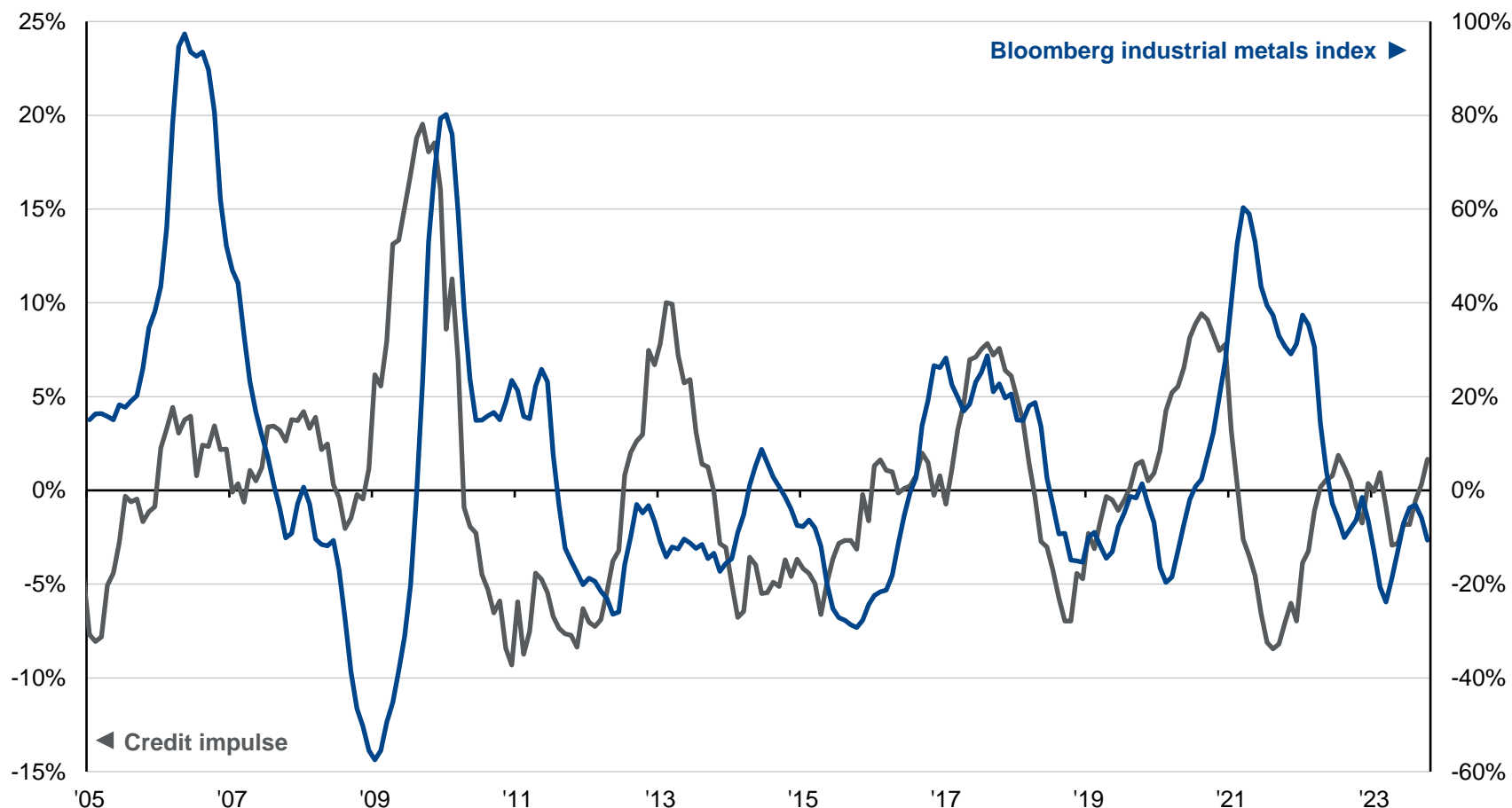
GTC

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Credit impulse and industrial metals' prices

Percentage points, year-over-year change, % of nominal GDP

Year-over-year change, 3-month moving average



Source: Bloomberg L.P., CEIC, People's Bank of China, J.P. Morgan Asset Management.

Credit impulse measures the year-over-year change in credit flow (net flow of total social financing) as a percentage of nominal GDP.

Guide to China. Data are as of January 31, 2024.

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Fiscal policy

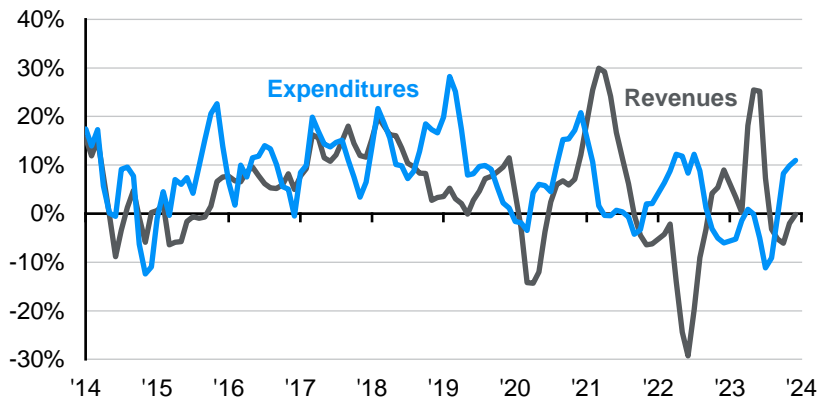
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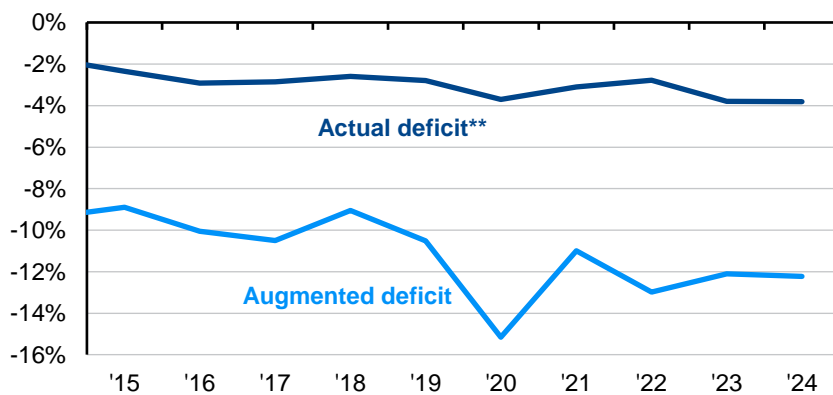
Fiscal revenues and expenditures*

Year-over-year change, 3-month moving average



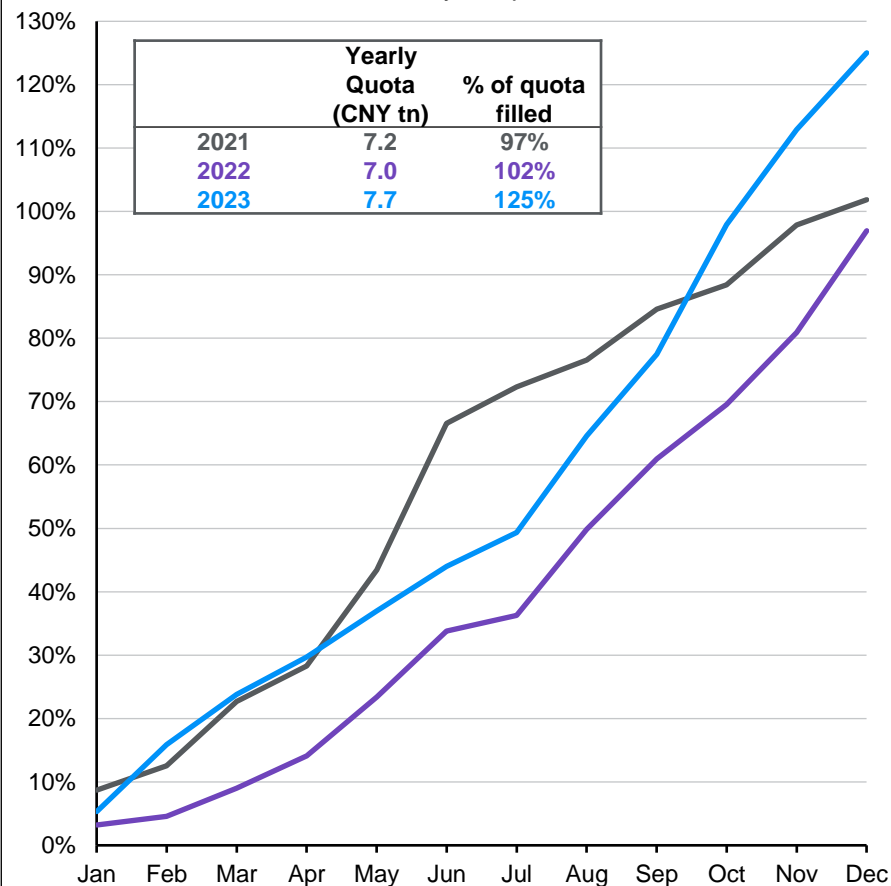
Fiscal balance

% of nominal GDP



Pace of central and local government bond issuance

Year-to-date issuance as a % of full-year quota



Source: J.P. Morgan Asset Management. (Top and bottom left) CEIC, Ministry of Finance of China (Bottom left) J.P. Morgan Economic Research. *Fiscal revenues include taxes, government funds, which are mostly derived from local government land sales, and other government revenues. Fiscal expenditures include government spending of funds raised from taxes, government funds and general bond issuance. **Actual deficit = fiscal revenues - fiscal expenditures (as shown in top left chart). Budget deficit = actual deficit adjusted with the fiscal stability fund. Augmented deficit is an estimate of all the fiscal resources used by the government to support economic growth, i.e., fiscal balance plus investment via local government financing vehicles, policy banks and other channels. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated. (Right) Wind, People's Bank of China, Ministry of Finance of China. Guide to China. Data are as of January 31, 2024.

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Yuan exchange rates

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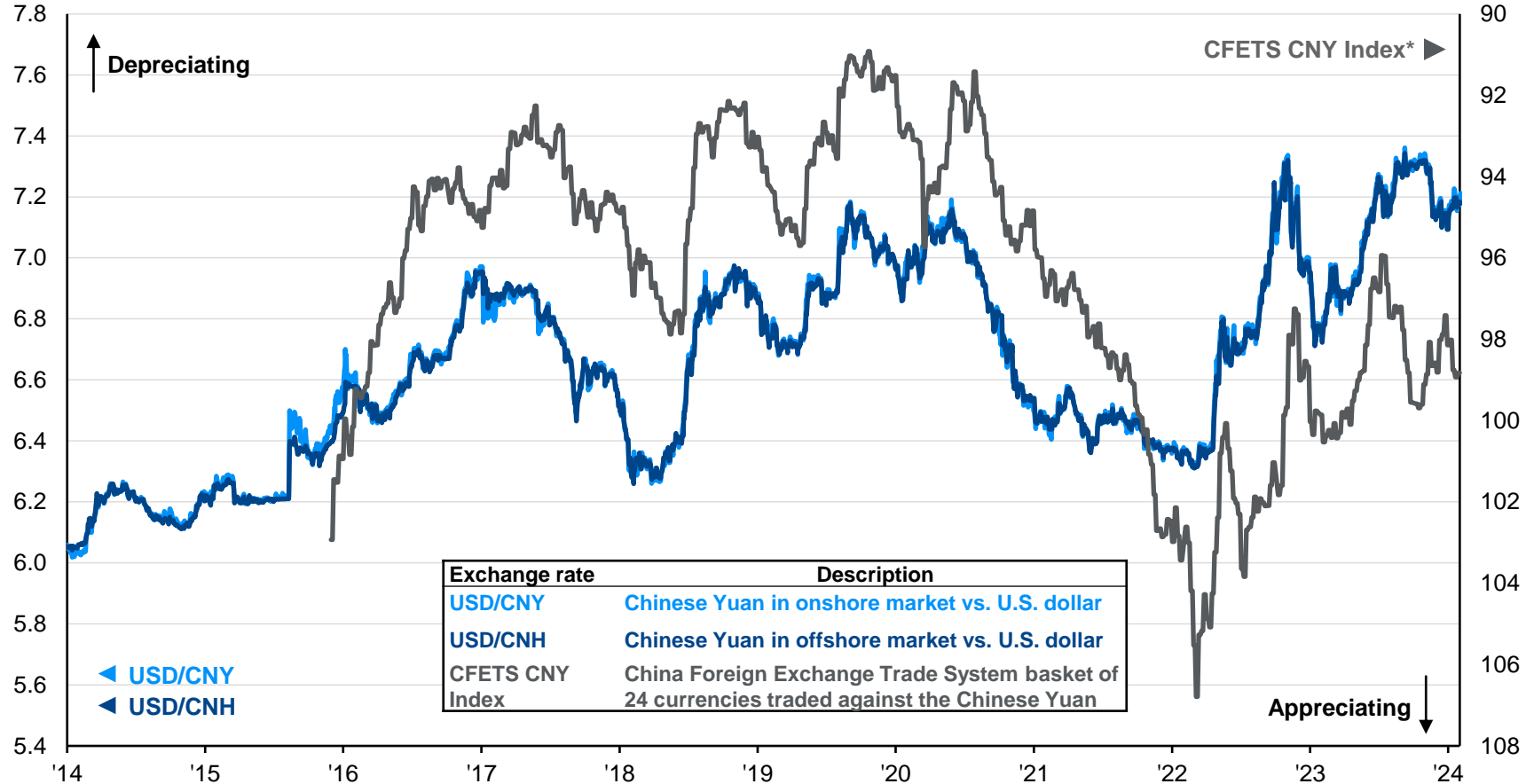
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Chinese yuan exchange rates

Price level

Index (inverted)



Source: FactSet, People's Bank of China, J.P. Morgan Asset Management.

*CFETS CNY Index data available as of December 2015.

Guide to China. Data are as of January 31, 2024.



Foreign exchange reserves and bond holdings

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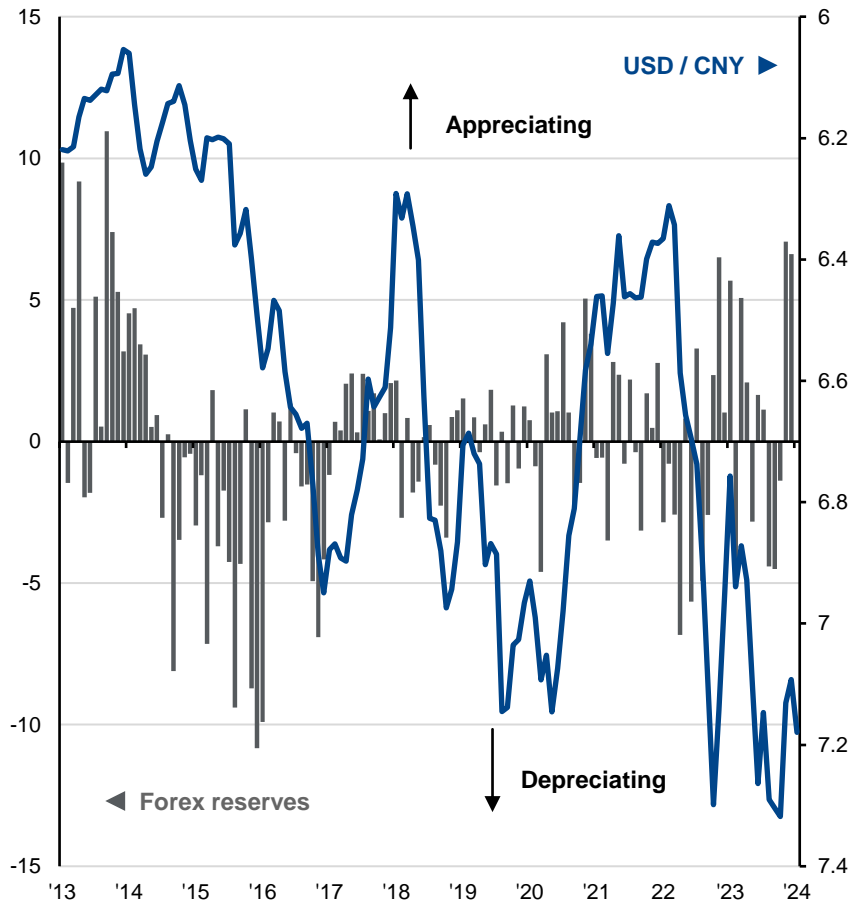
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USD/CNY and change in FX reserves

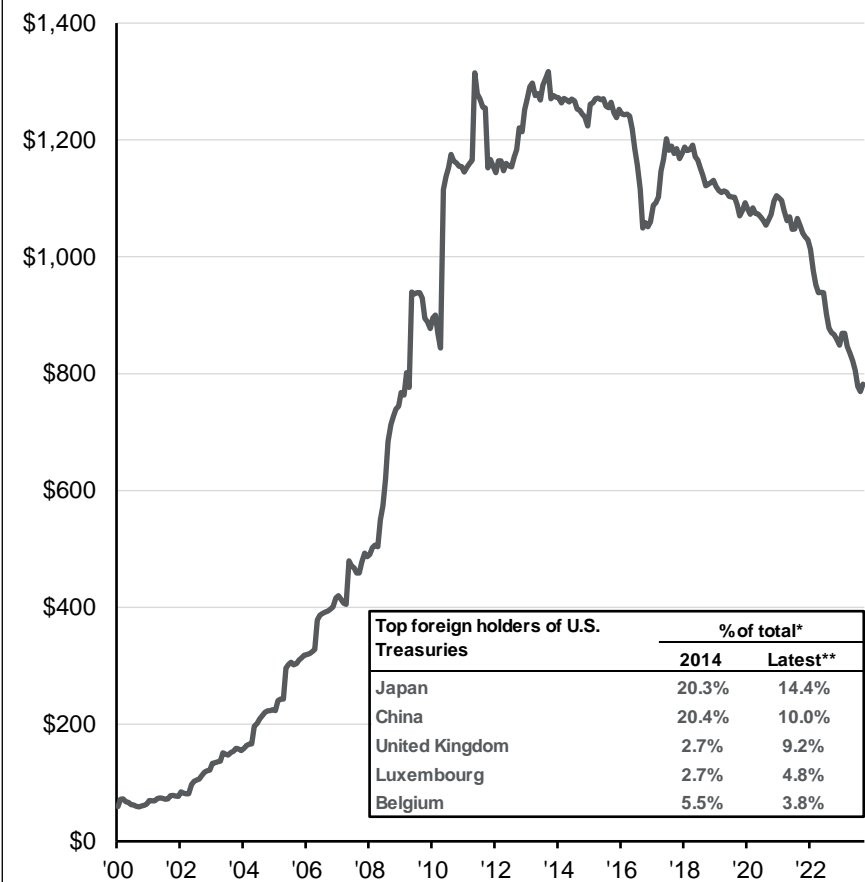
USD billions, month-over-month change

Price level (inverted)



China holdings of U.S. Treasuries

USD billions



Source: J.P. Morgan Asset Management. (Left) FactSet, Peoples' Bank of China, WM/Reuters. (Right) Bloomberg, U.S. Department of Treasury.

*Represents the % of total debt held by foreign holders. **Data are as of January 2024.

Guide to China. Data are as of January 31, 2024.



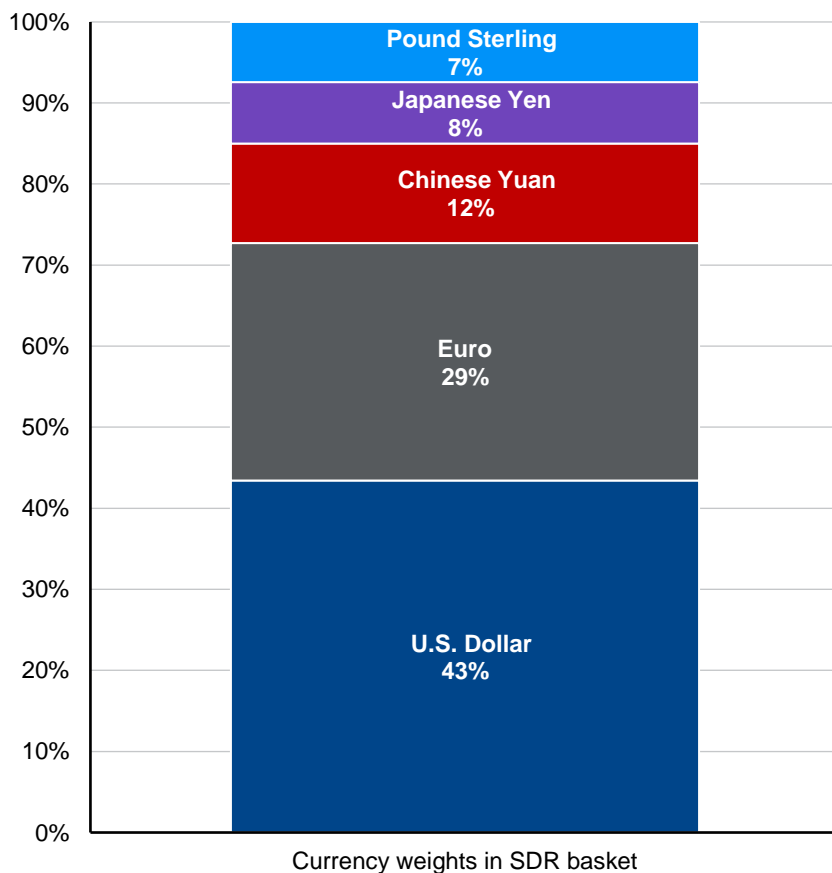
Chinese currency in global perspective

GTM

GTC

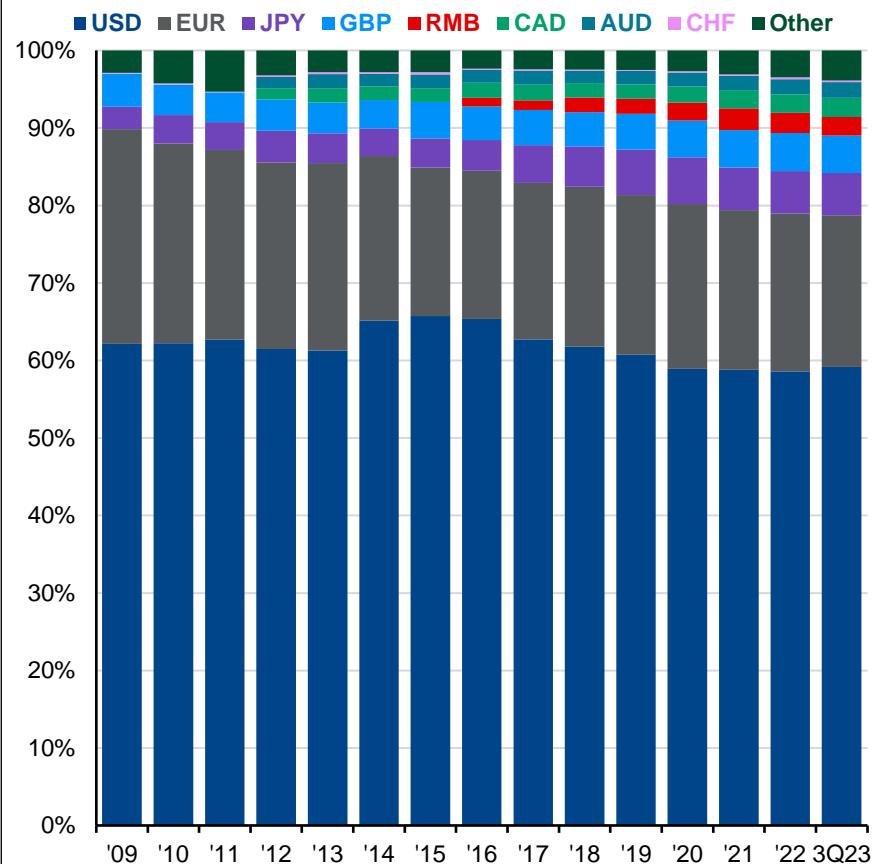
46

Currency weights in IMF's SDR basket



Global central bank reserve manager holdings

% of total



Source: IMF, J.P. Morgan Asset Management. Number may not add to 100% due to rounding. SDR refers to the IMF's Special Drawing Rights basket.

Guide to China. Data are as of January 31, 2024.



Size of Chinese and global equity markets

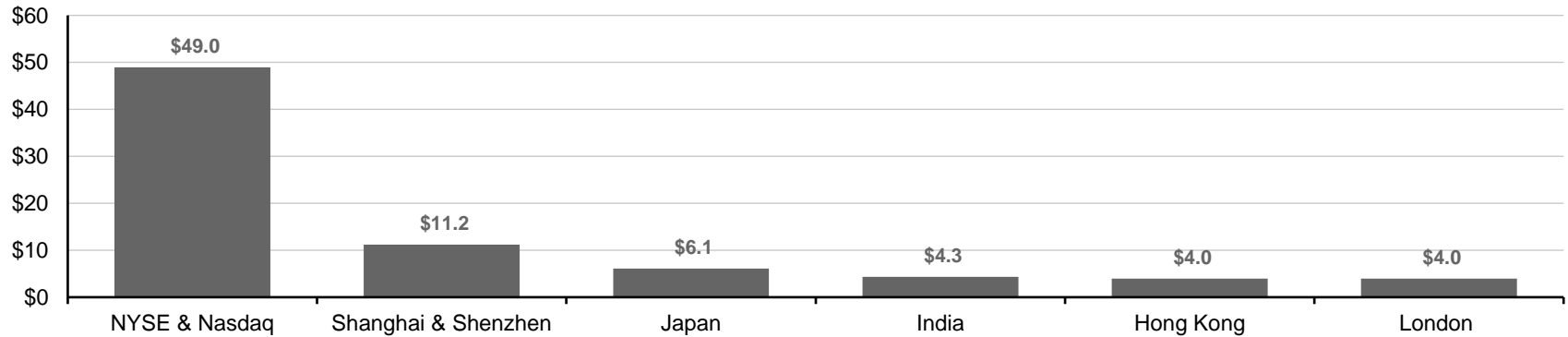
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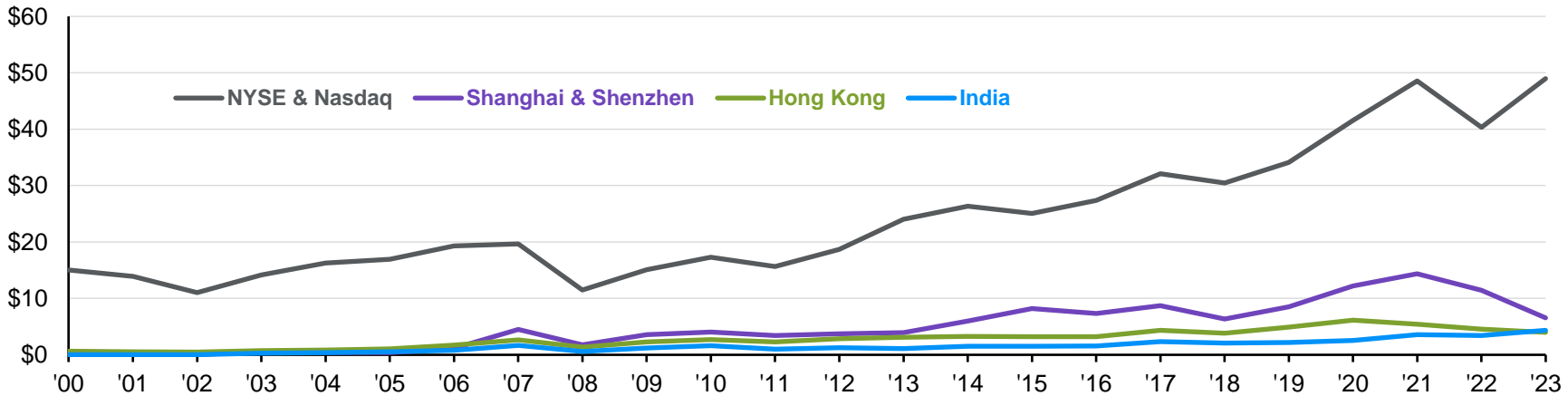
Stock exchange market capitalizations

USD trillions, 2023*



Stock exchange market capitalizations

USD trillions



Source: World Federation of Exchanges, J.P. Morgan Asset Management. *The data are the Shenzhen Stock Exchange and London Stock Exchange are as of 2022 due to a lack of data. Japan and London are not included in the bottom graph due to issues with data availability. Guide to China. Data are as of January 31, 2024.

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Types of and access to Chinese equities

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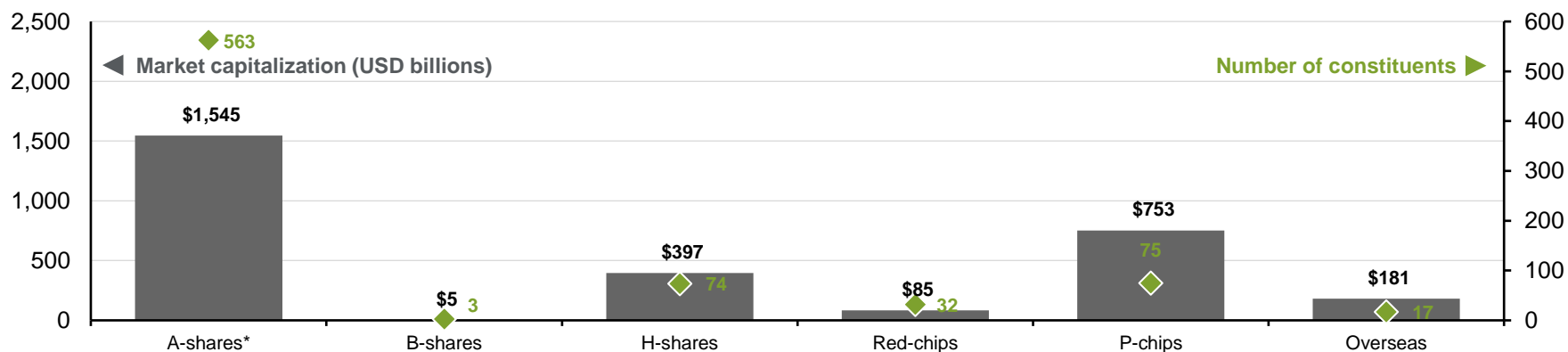
GTC

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Share class	Definition	Currency	Foreign investor access	Indices
Onshore	A-shares	CNY	QFII (CNY), RQFII (CNH), Northbound Stock Connect	SZSE Composite Index, Shanghai Composite Index, CSI 300, MSCI China A, MSCI China
	B-shares	USD (Shanghai), HKD (Shenzhen)	No restrictions	
Offshore	H-shares	HKD	No restrictions	Hang Seng Index, MSCI China
	Red-chips	HKD		
	P-chips	HKD		
	Overseas (N and S-shares)	USD, SGD		MSCI China

Market capitalization and constituents by market

MSCI indices, as of Jan. 2024



Source: MSCI, J.P. Morgan Asset Management. *A-shares data are as of December 2023. Guide to China. Data are as of January 31, 2024.



Chinese initial public offerings

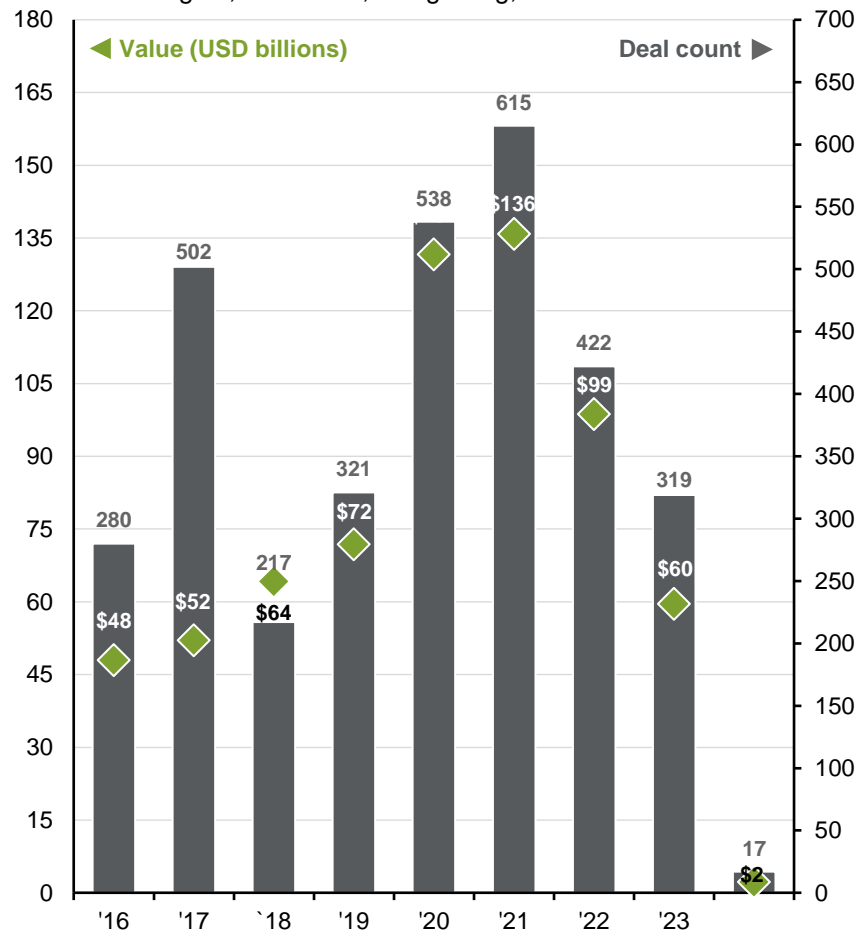
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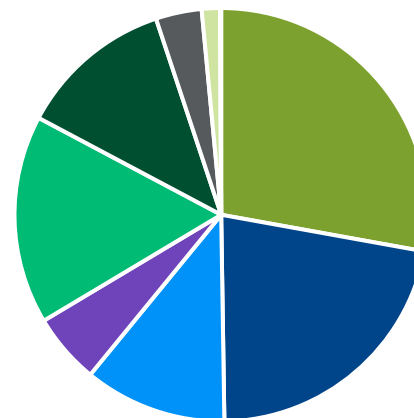
Initial public offerings

Includes Shanghai, Shenzhen, Hong Kong, and ADRs



IPO breakdown by sector

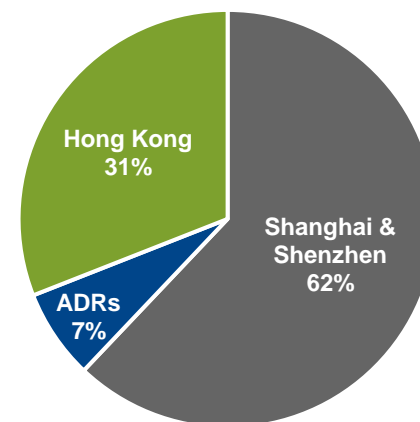
2016 – YTD 2024



Sectors	% of market value
Consumer	27.8%
Industrial	21.9%
Tech	11.2%
Materials	5.5%
Financials	16.3%
Comm. services	12.1%
Energy	3.6%
Utilities	1.4%
Diversified	0.1%

IPO breakdown by market

2016 – YTD 2024



Source: Bloomberg L.P., J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.

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Chinese stocks listed in the U.S.

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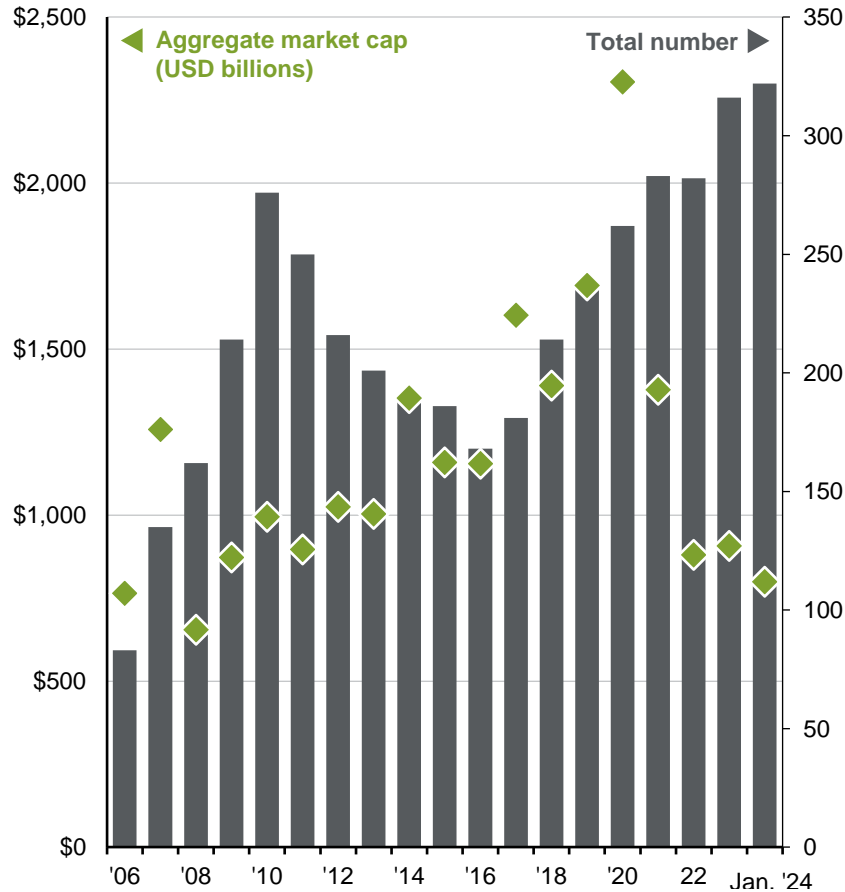
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Equities

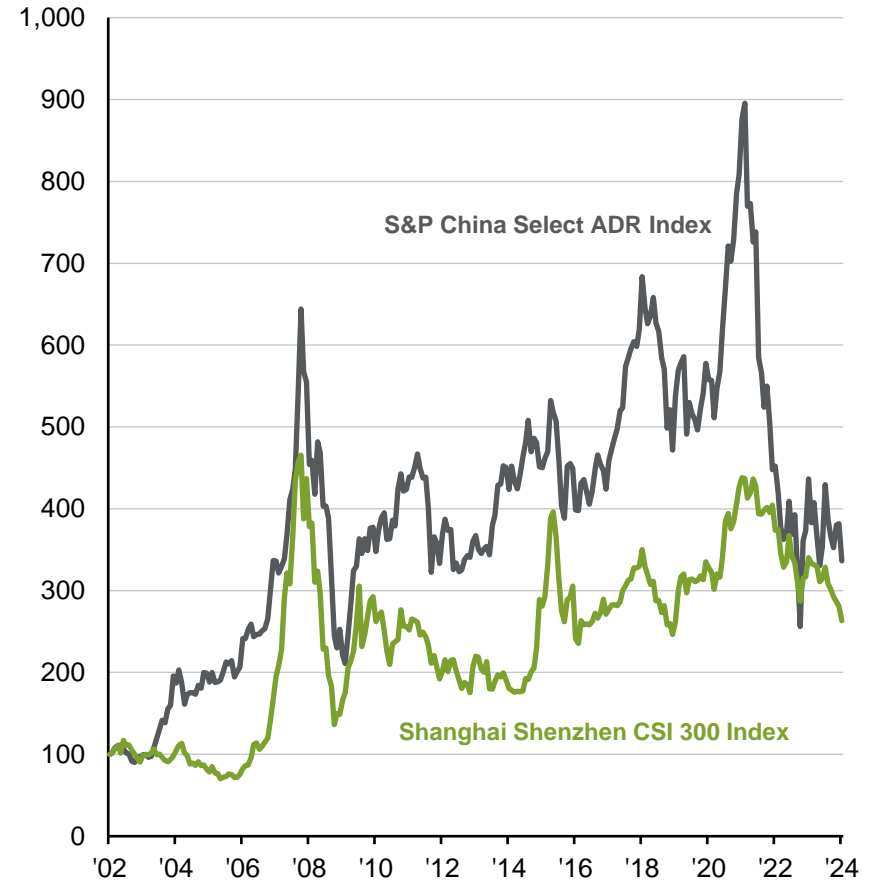
Chinese stocks listed on U.S. exchanges

Chinese ADRs*



Chinese stock performance by listing

Price index, Jan. 2002 = 100



Source: Bloomberg L.P., Wind, J.P. Morgan Asset Management.

*Chinese ADRs: American depository receipts that represent shares of U.S.-listed Chinese companies. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.

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Sector composition of offshore and onshore equities

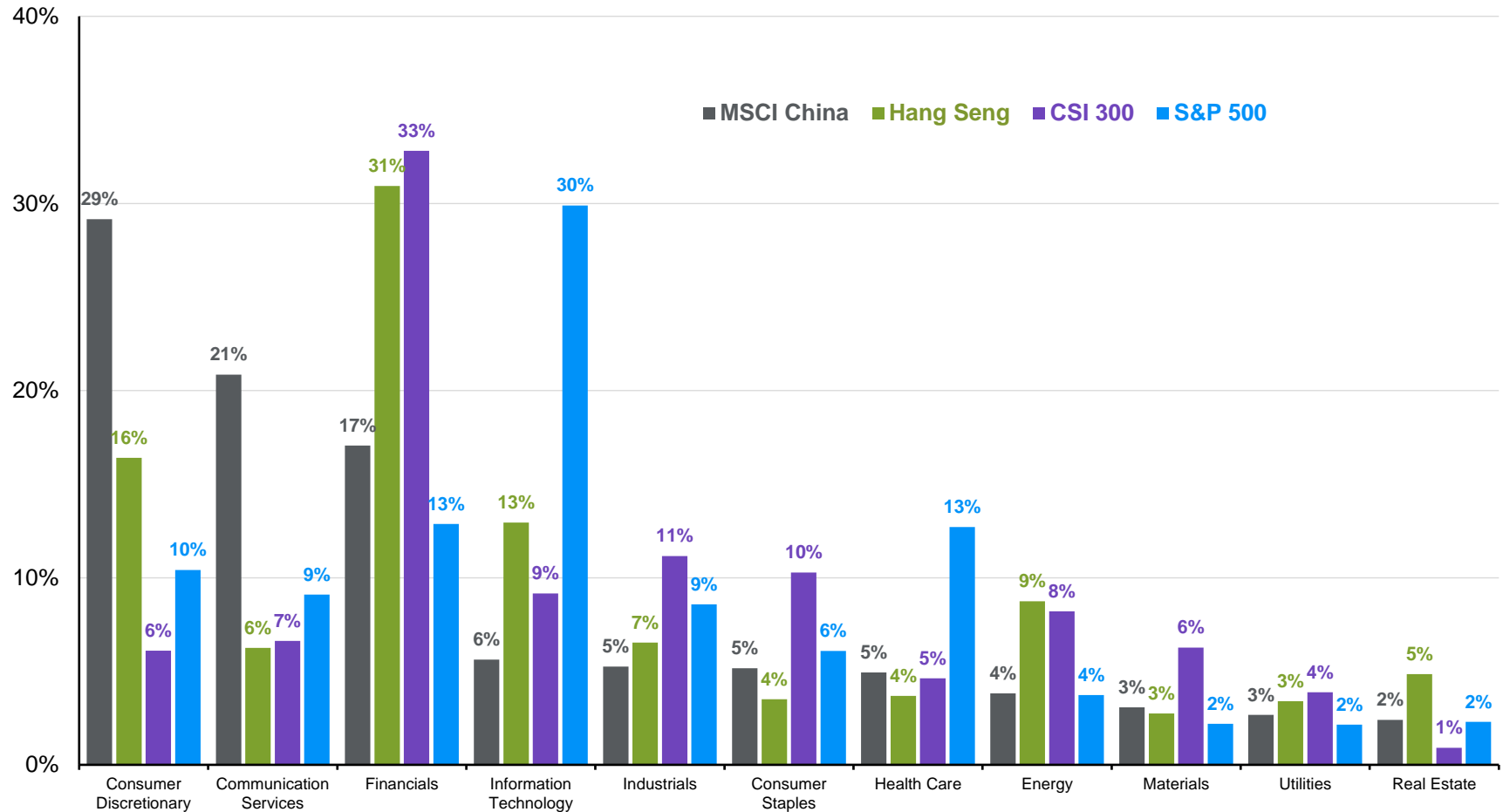
GTM

GTC

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Sector weights

% of index market capitalization



Source: China Securities Index, Hong Kong Exchange, FactSet, Standard & Poor's, MSCI, J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.



State-owned enterprise representation in key stock indices

GTM

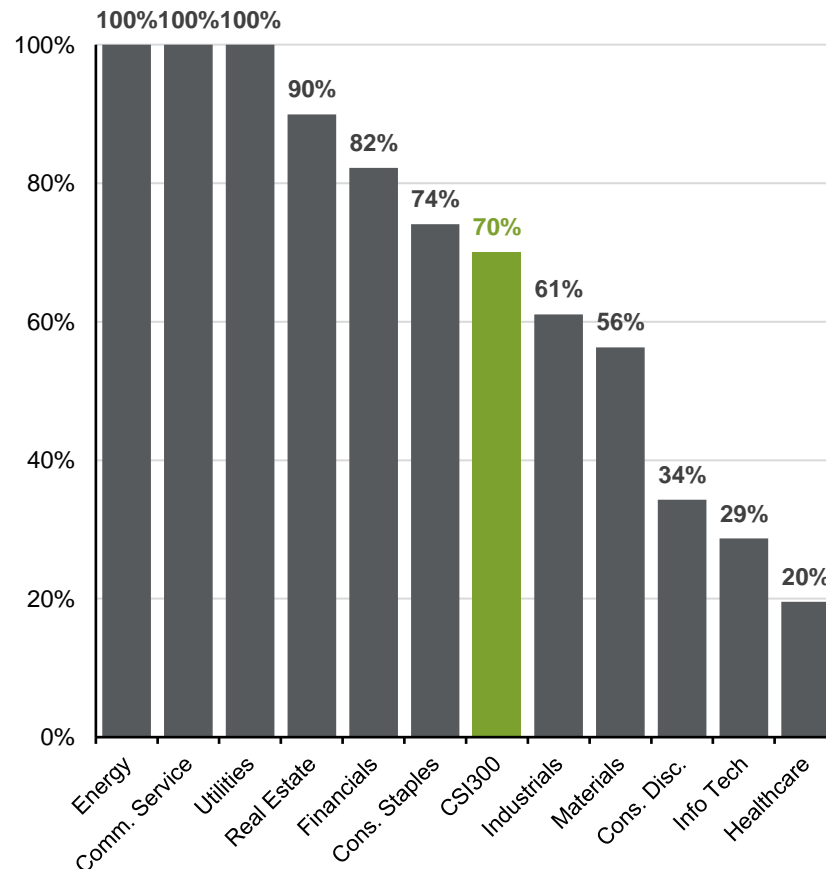
GTC

52

Equities

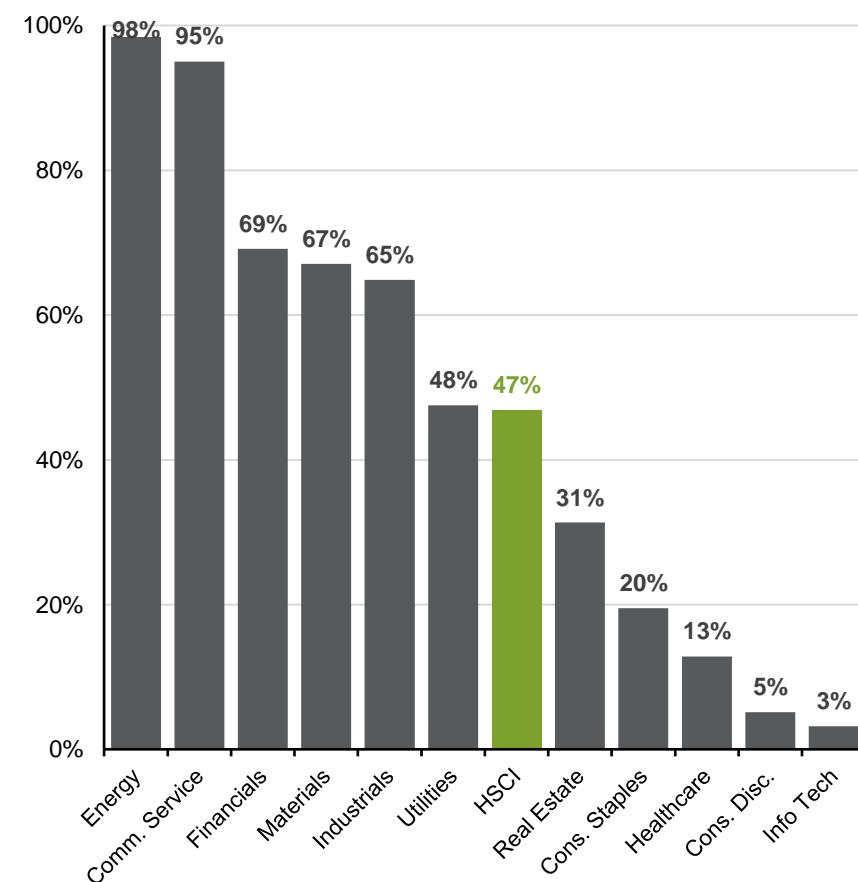
Hang Seng Composite Index (HSCI)

SOE as % of sector and % of overall index market capitalization



CSI 300 Index

SOE as % of sector and % of overall index market capitalization



Source: China Securities Index, Hang Seng Index, Wind, J.P. Morgan Asset Management.

SOE refers to state-owned enterprise, as defined by controlling stake owned by central and/or local governments and/or their subsidiaries.

"Comm. Services" = Communication Services. "Cons. Disc." = Consumer Discretionary.

Guide to China. Data are as of January 31, 2024.

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Market structure of offshore vs. onshore equities

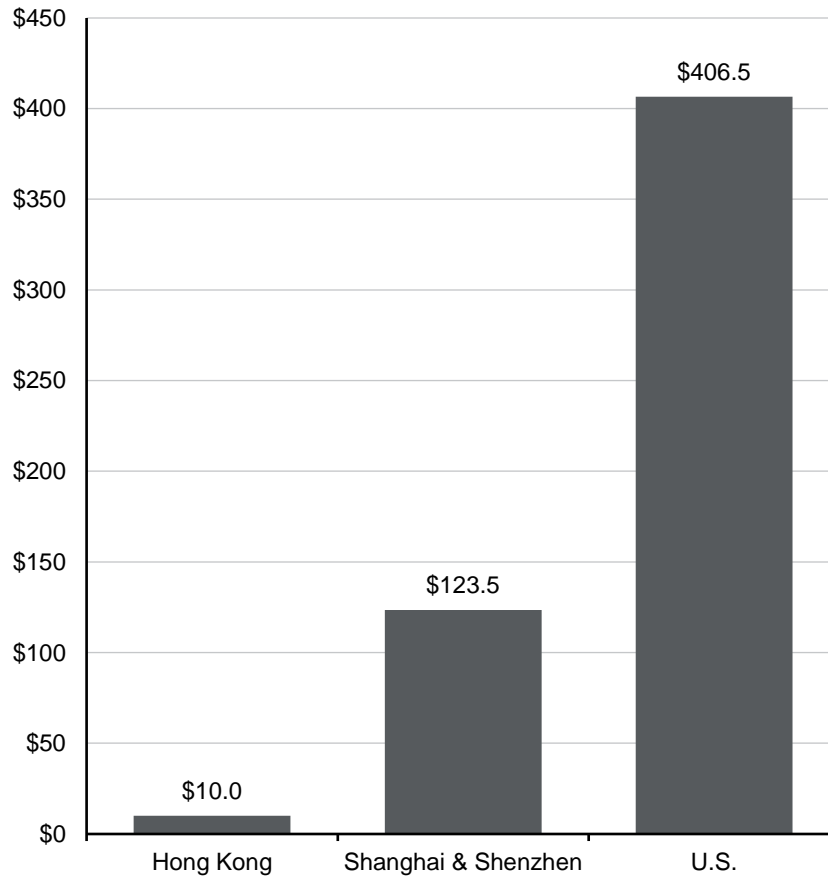
GTM

GTC

53

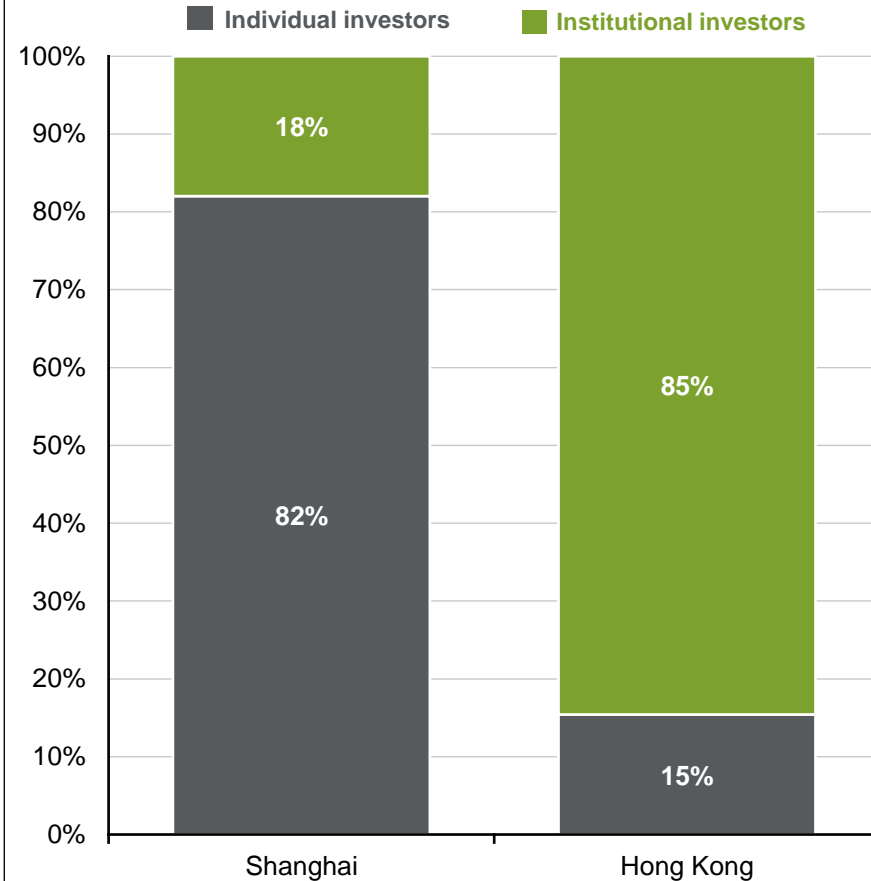
Average daily turnover

USD billions, 2023



Participation by type of investor

% of total trading value, latest*



Source: J.P. Morgan Asset Management; (Left) World Federation of Exchanges; (Right) CEIC, Hong Kong Exchanges and Clearing Limited, Shanghai Stock Exchange. Total value of share trading includes electronic order book, negotiated deals, and reported trades. *Latest is 2017 for Shanghai and 2020 for Hong Kong due to data availability. *Guide to China*. Data are as of January 31, 2024.



Annual returns and intra-year declines

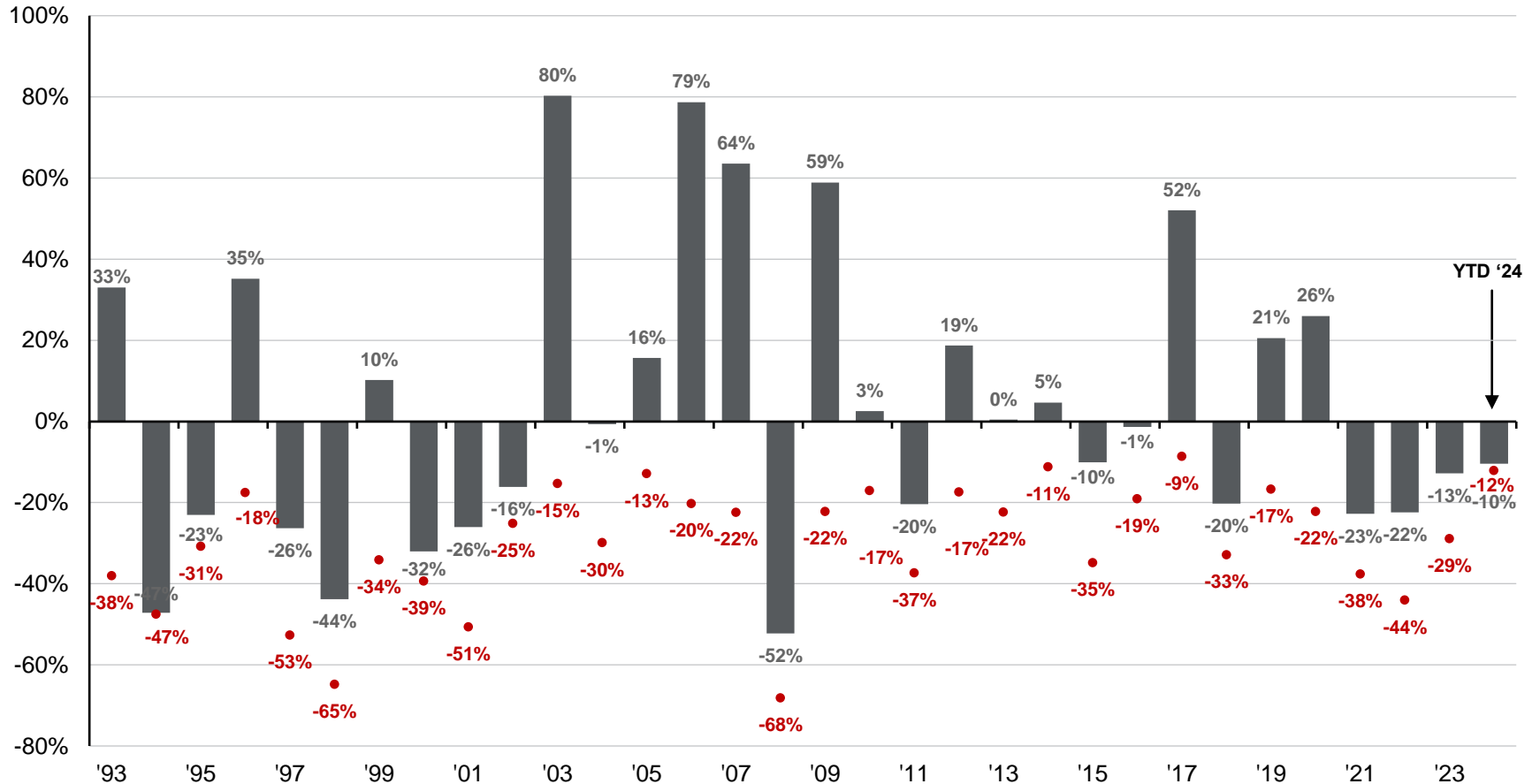
GTM

GTC

54

MSCI China intra-year declines vs. calendar year returns

Local currency, average intra-year drops of -30.4% (median: -28.9%) and annual returns positive in 15 of 31 years of an average of 4.0%



Source: FactSet, MSCI, J.P. Morgan Asset Management.

Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year (represented by the red dots). For illustrative purposes only. Returns are calendar year returns from 1993 to YTD 2024 for the MSCI China. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.

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Chinese equity market corrections and subsequent performance

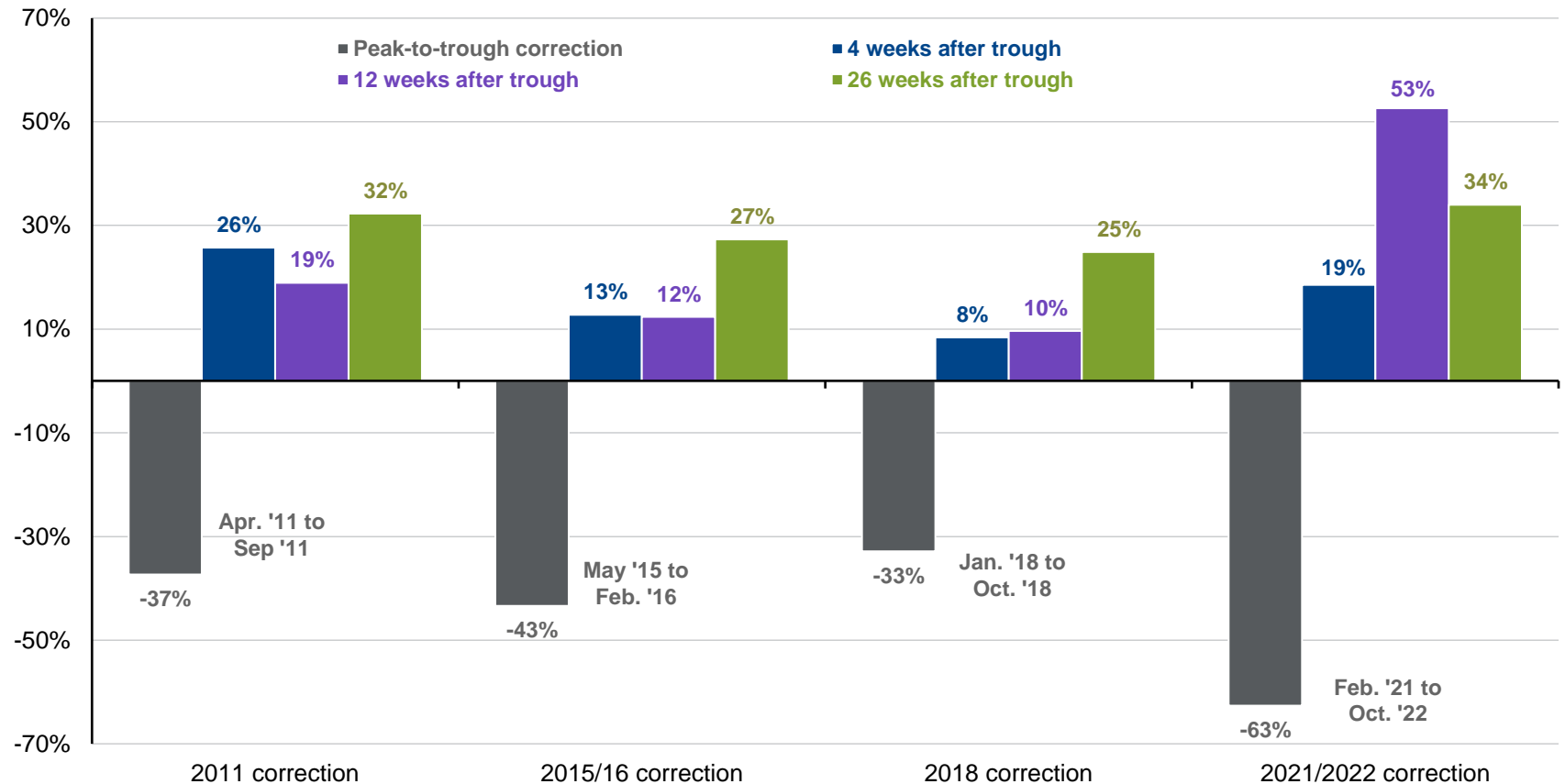
GTM

GTC

55

Previous vs. current Chinese equity market corrections

MSCI China



Source: Bloomberg L.P., J.P. Morgan Asset Management.

Chinese market performance is based on the MSCI China price index only and do not include dividends.

The periods above were chosen to illustrate particular market moving events in China and the recovery 4, 12, and 26 weeks after market trough. The April 2011 to September 2011 period represents a period in which global fears were heightened due to China's perceived growth slowdown. Fears culminated in a dramatic market sell-off in August 2011. The May 2015 to February 2016 period represents the currency crisis in China. The January 2018 to October 2018 represents the beginning of the default cycle. The February 2021 to October 2022 period represents the recent regulatory tightening campaign in China. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.

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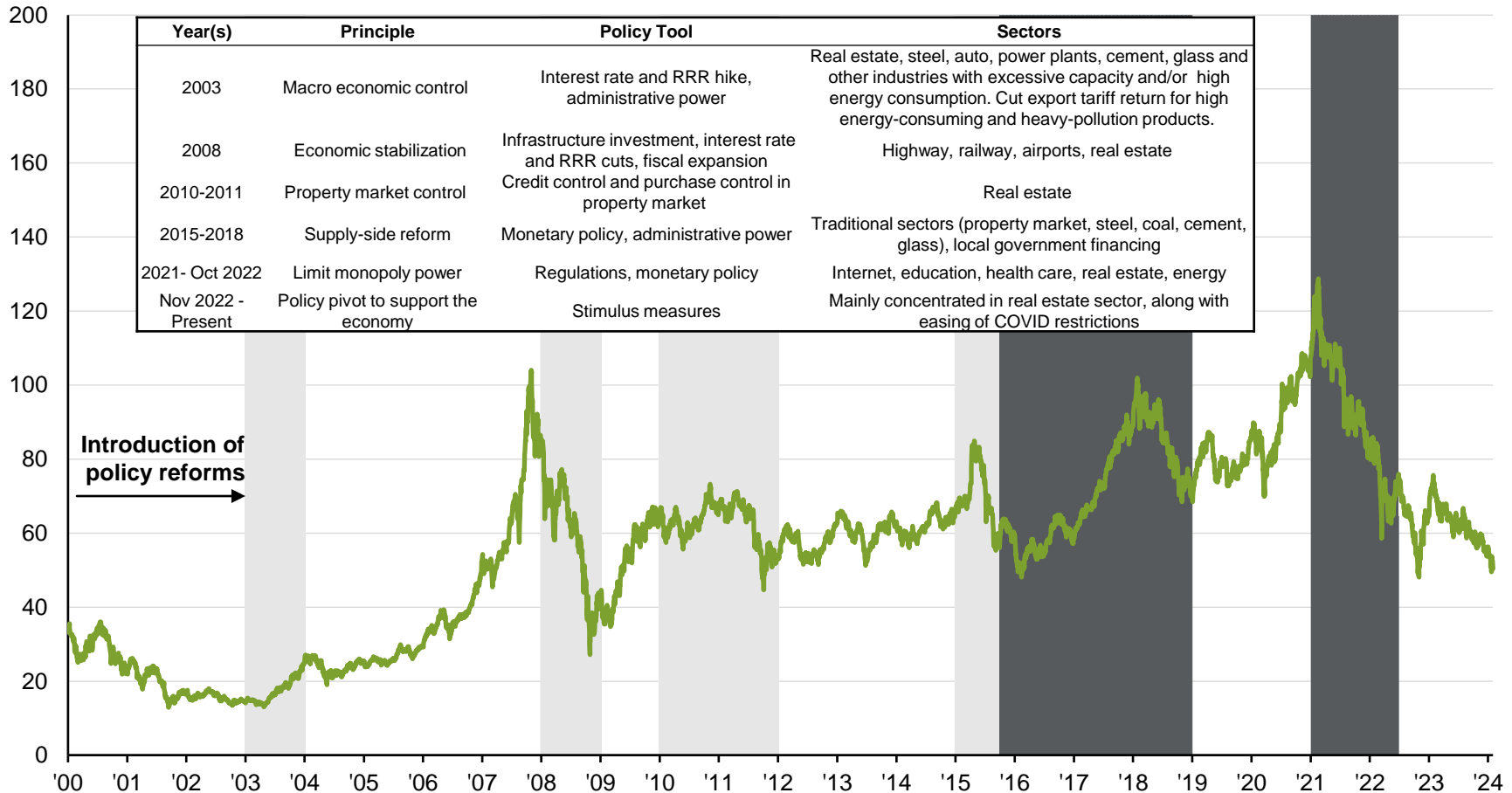
Reform cycle policy principles

GTM

GTC

56

MSCI China price index



Source: Bloomberg L.P., MSCI, PBoC, J.P. Morgan Asset Management. PBoC: People's Bank of China; SAMR: State Administration for Market Regulation oversees all manner of market controls, including regulating anti-competition behavior, intellectual property rights, drug safety supervision and issuance of business licenses, etc. *Guide to China*. Data are as of January 31, 2024.



Property reforms and real estate stock performance

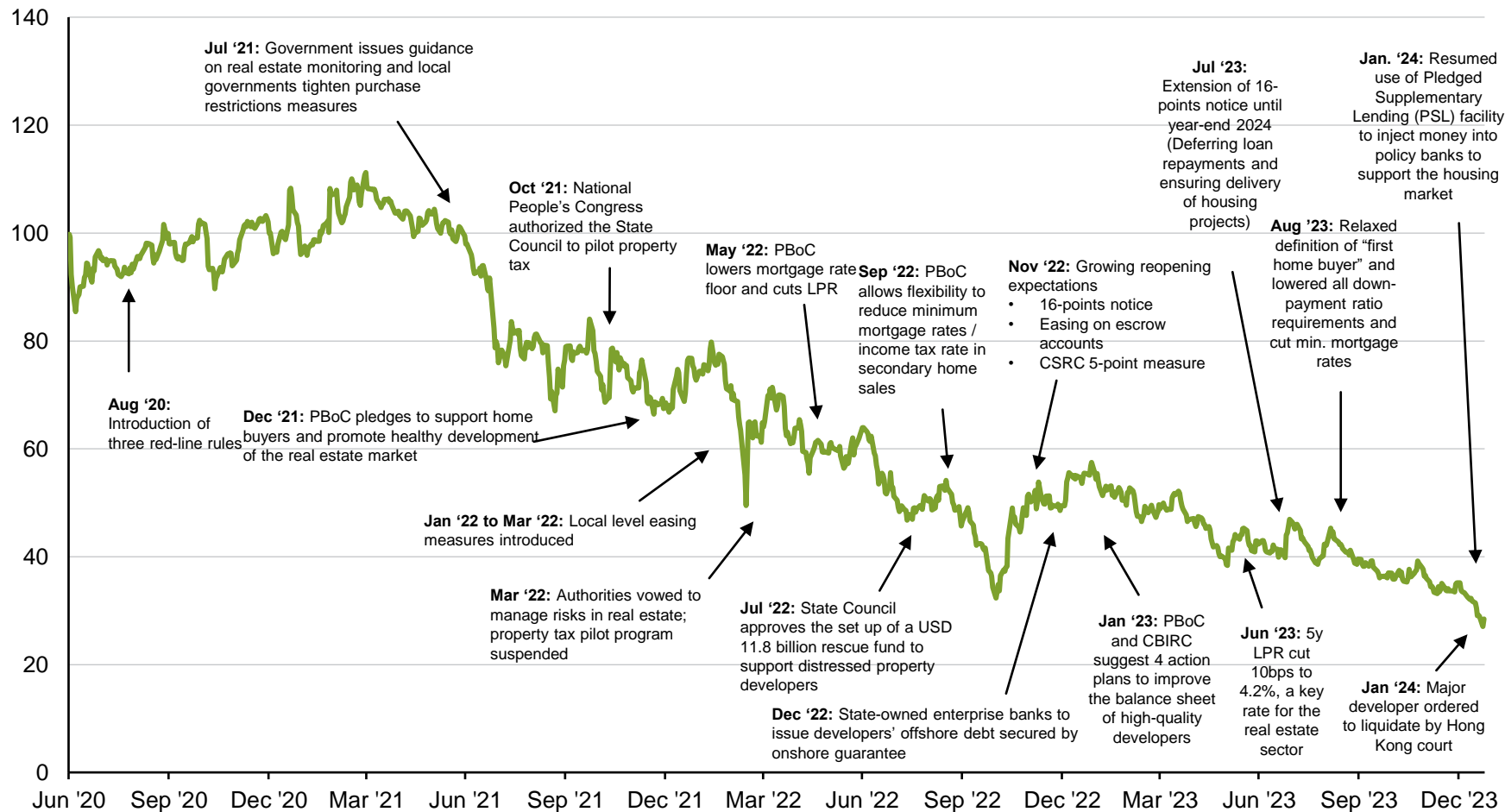
GTM

GTC

57

MSCI China Real Estate Index

June 2020 = 100



Source: FactSet, various news sources, J.P. Morgan Asset Management.

PBoC stands for People's Bank of China. LPR stands for Loan Prime Rate. CSRC stands for China Securities Regulatory Commission. CBIRC stands for China Banking and Insurance Regulatory Commission. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.



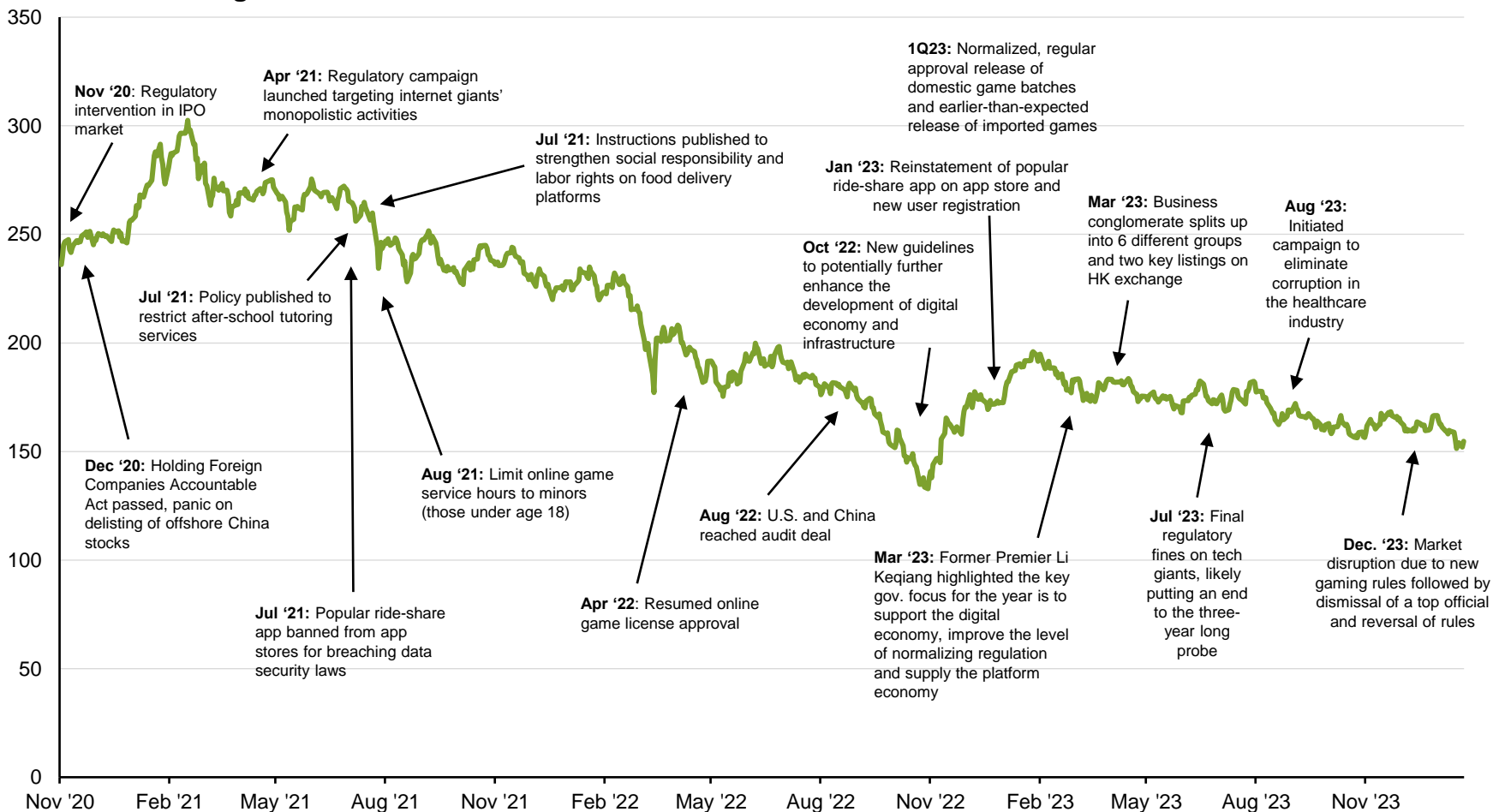
Regulation and offshore China stock performance

GTM

GTC

58

MSCI Golden Dragon index



Source: Bloomberg L.P., MSCI, various news sources, J.P. Morgan Asset Management. The MSCI Golden Dragon Index captures the equity market performance of large and mid-cap China securities (H shares, B shares, Red-Chips and P-Chips) as well as securities classified in Hong Kong and Taiwan. Currently, the index also includes A stock connect large and mid-cap shares. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.

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Chinese equity market dispersion

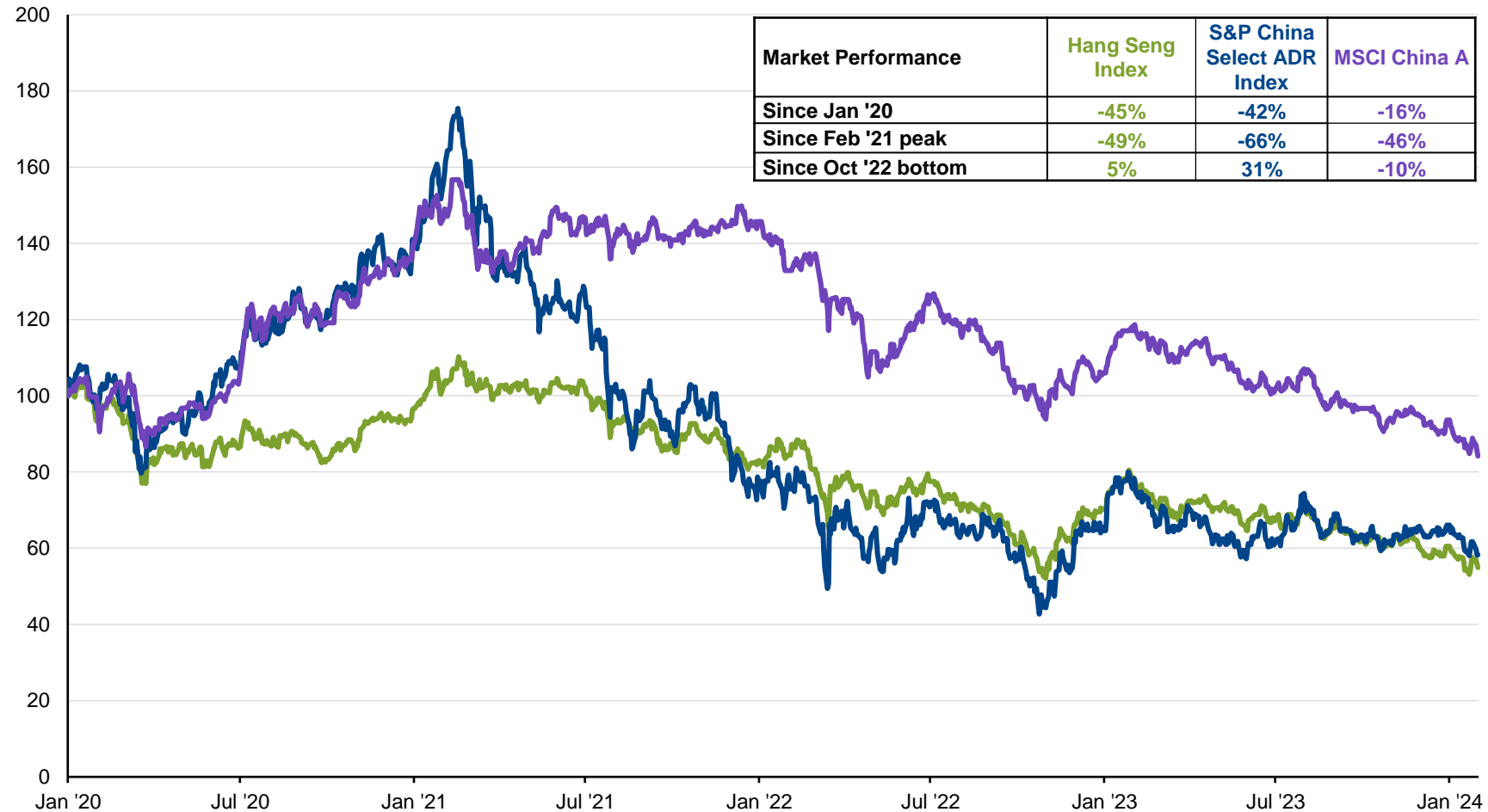
GTM

GTC

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Share type dispersion

USD, price index, Jan. 2020 = 100



Source: Bloomberg L.P., MSCI, J.P. Morgan Asset Management. Past performance is not indicative of current or future results. Guide to China. Data are as of January 31, 2024.

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Equities



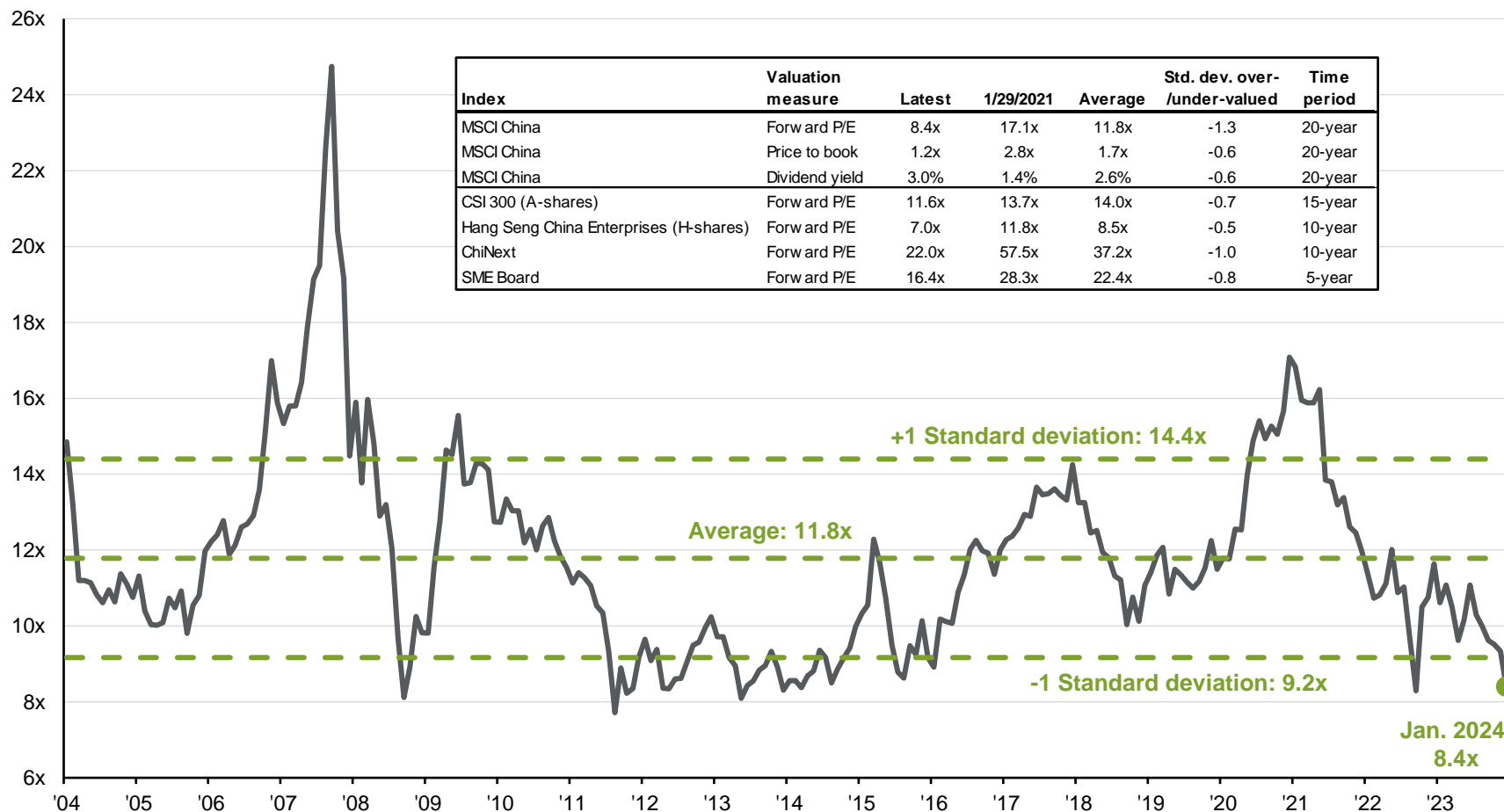
Chinese equities: Valuations

GTM

GTC

60

MSCI China: Forward P/E ratio



Source: Bloomberg L.P., MSCI, J.P. Morgan Asset Management.

Price-to-earnings ratio based on next twelve months earnings estimates. Dividend yield based on next twelve months dividend estimates.

Price-to-book based on trailing 12 months bookvalue. "Std. dev" = Standard deviation.

Guide to China. Data are as of January 31, 2024.



Chinese vs. U.S. equities: Relative valuations and performance

GTM

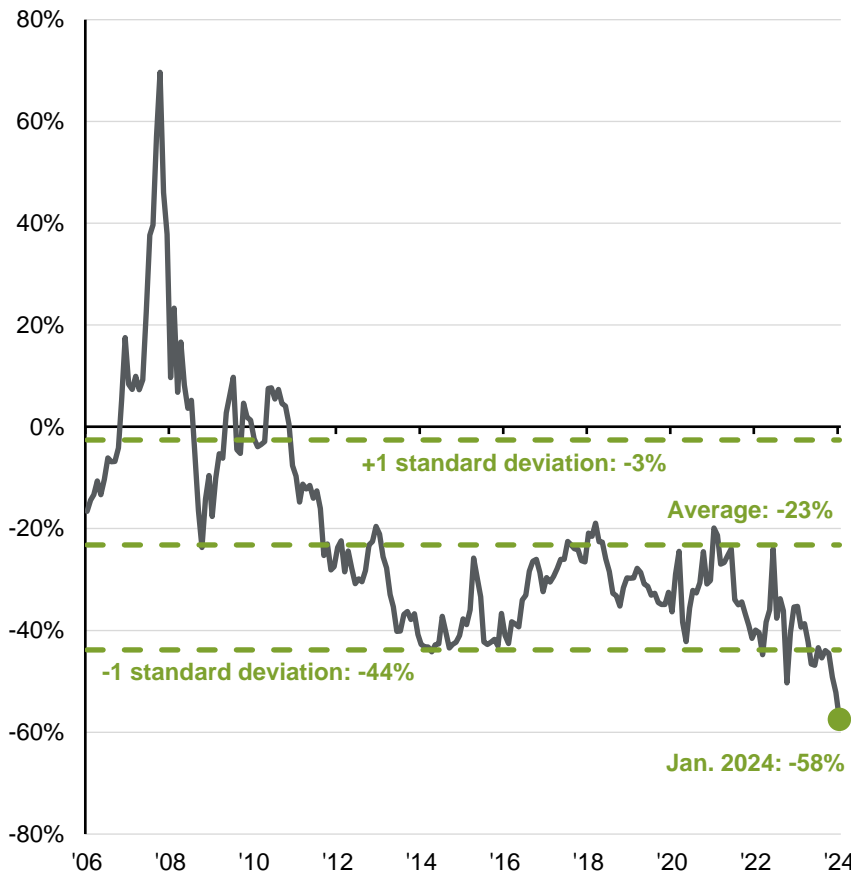
GTC

61

Equities

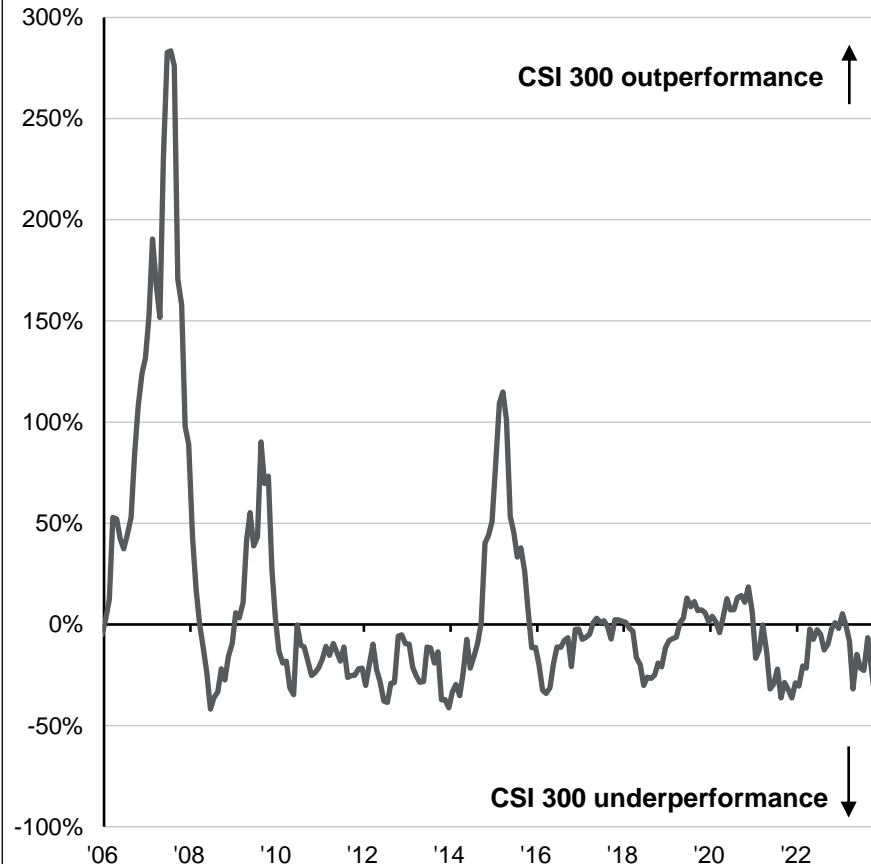
MSCI China: Price-to-earnings relative to U.S.

MSCI China vs. S&P 500, price to next 12-month earnings



CSI 300: Performance relative to U.S.

CSI 300 vs. S&P 500, difference in 12-month price returns



Source: FactSet, J.P. Morgan Asset Management; (Right) China Securities Index, Standard & Poor's. Past performance is not indicative of current or future results.

Guide to China. Data are as of January 31, 2024.

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China: Sector earnings and valuations

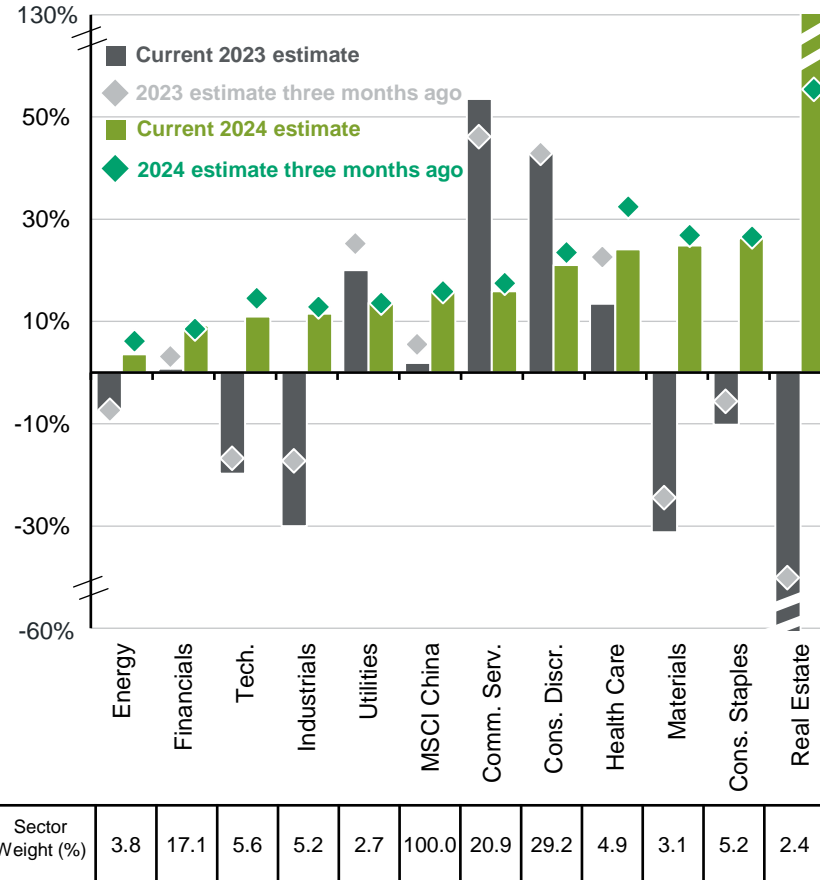
GTM

GTC

62

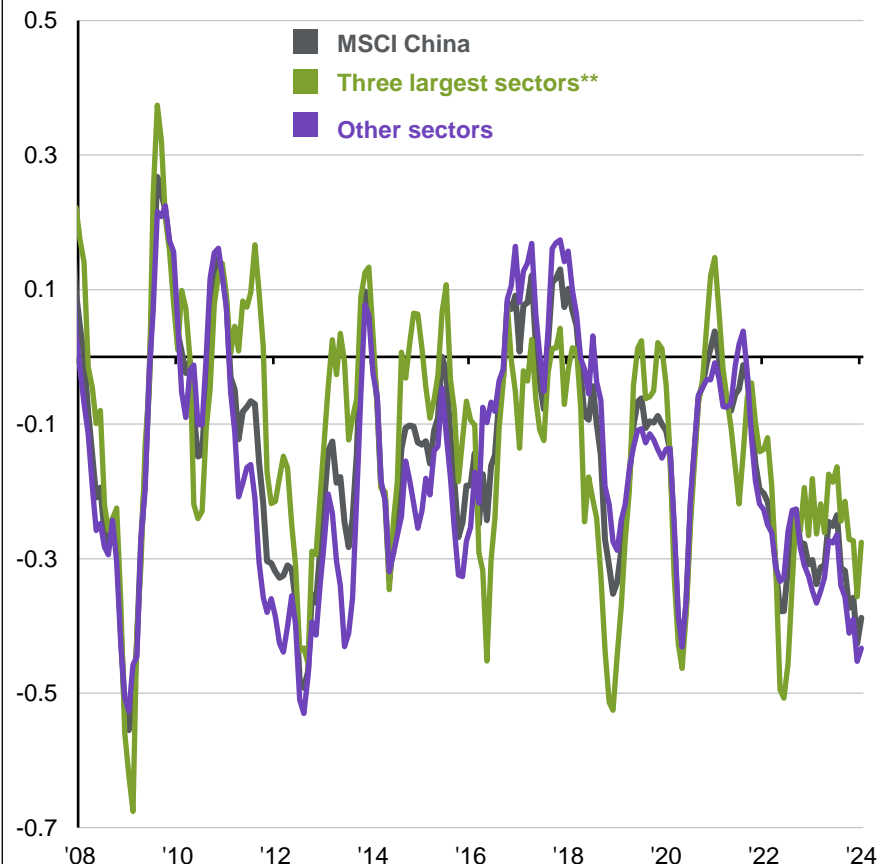
Earnings growth of MSCI China*

Year-over-year change, earnings per share, consensus estimates



Earnings revision ratio of MSCI China

Net earnings revisions to consensus estimates, 3-month moving avg.



Source: FactSet, MSCI, J.P. Morgan Asset Management. *Sector indices used are from the MSCI China Index. Consensus estimates used are calendar year estimates from FactSet. Past performance is not a reliable indicator of current and future results. **Three largest sectors include Consumer Discretionary, Communication Services and Financials. "Comm. serv." = communication services. "Consum. discr" = consumer discretionary.

Guide to China. Data are as of January 31, 2024.



Onshore equities: Sector performance

GTM

GTC

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Equities

Returns (%)						10-yr. ('14-'23) annualized		Price-to-earnings*		
2019	2020	2021	2022	2023	YTD '2024	Return (%)	Volatility (%)	2022	2023	YTD '2024
Con. staples 61.8	Con. staples 70.4	Utilities 39.7	Energy 12.7	Utilities 0.3	Energy 22.1	Con. staples 13.2	IT 29.0	Con. staples 35.9	IT 38.2	IT 30.6
IT 57.6	Health Care 51.3	Energy 38.1	Financials -12.3	Energy -1.1	Utilities 6.8	Materials 6.3	Telecom 28.3	IT 33.7	Health Care 29.7	Health Care 24.8
Health Care 35.7	Industrials 38.8	Materials 30.3	Con. staples -13.4	IT -1.7	Telecom 6.8	All A-Share 6.0	Energy 25.5	Health Care 26.2	Con. staples 26.4	Con. staples 23.9
Financials 34.8	Con. disc. 34.2	Industrials 25.4	Utilities -15.4	Health Care -2.0	Financials -4.0	Health Care 5.7	Materials 24.5	Con. disc. 23.1	Telecom 18.3	Telecom 17.6
Telecom 34.6	Materials 30.2	Telecom 8.4	Con. disc. -17.0	All A-Share -4.2	Con. disc. -14.3	Utilities 5.5	Health Care 24.3	Industrials 19.7	Con. disc. 17.1	Con. disc. 15.7
All A-Share 33.4	All A-Share 26.9	IT 8.0	All A-Share -18.9	Materials -6.0	All A-Share -17.1	Financials 5.3	Industrials 23.9	Utilities 19.4	Materials 15.1	Utilities 14.8
Con. disc. 26.4	IT 18.6	All A-Share 7.7	Materials -19.6	Con. staples -6.5	IT -18.8	Industrials 4.6	Con. staples 23.5	Telecom 17.7	All A-Share 14.4	Materials 13.7
Materials 25.6	Utilities 3.7	Con. disc. -3.1	Health Care -20.3	Con. disc. -6.5	Materials -22.4	IT 4.1	Con. disc. 22.7	All A-Share 14.1	Utilities 13.6	All A-Share 13.2
Industrials 18.8	Financials 3.2	Health Care -7.0	Industrials -21.4	Telecom -6.8	Health Care -26.0	Telecom 3.7	Financials 22.0	Materials 13.6	Industrials 13.6	Industrials 12.5
Energy 11.6	Energy -5.6	Con. staples -7.9	Telecom -21.7	Financials -8.4	Con. staples -26.3	Con. disc. 3.5	Utilities 21.8	Financials 6.4	Energy 8.3	Energy 9.3
Utilities 6.9	Telecom -6.5	Financials -7.9	IT -33.1	Industrials -9.3	Industrials -27.3	Energy 2.8	All A-Share 21.1	Energy 6.2	Financials 6.4	Financials 6.6

Source: Wind, China Stock Index, Shanghai Stock Exchange, Shenzhen Stock Exchange, J.P. Morgan Asset Management.

*Price-to-earnings refer to forward P/E ratios. Annual returns are total returns based on CSI all share index and CSI all share sector indices. Past performance is not a reliable indicator of current and future results.

Guide to China. Data are as of January 31, 2024.



China equities: Growth vs. Value

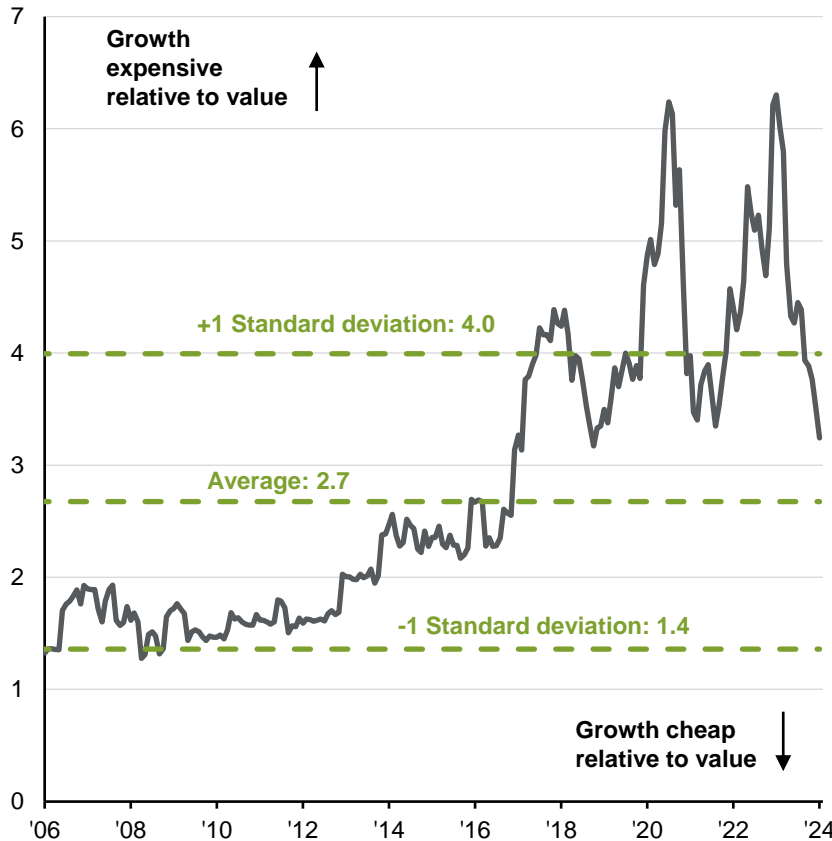
GTM

GTC

64

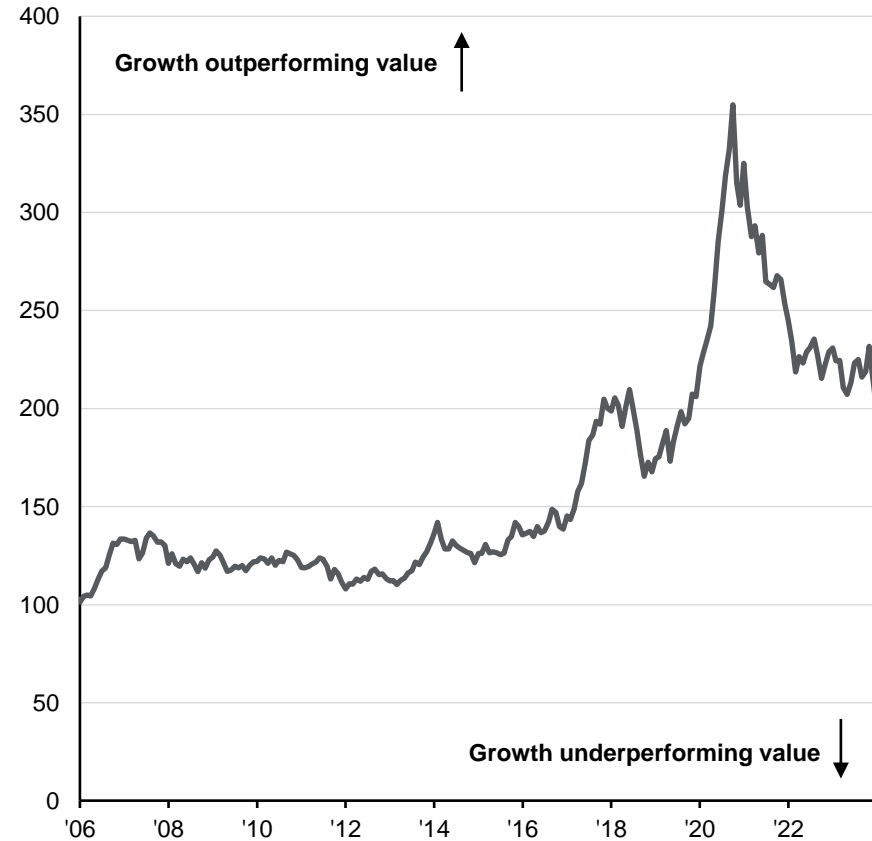
Growth vs. Value valuations*

MSCI China Growth fwd. P/E ratio/Value fwd. P/E ratio



Growth vs. Value relative performance

MSCI China Growth/Value performance, Jan. 2006 = 100



Source: FactSet, MSCI, J.P. Morgan Asset Management.

*Growth is the MSCI China Growth index and Value is the MSCI China Value index. Past performance is not a reliable indicator of current and future results.

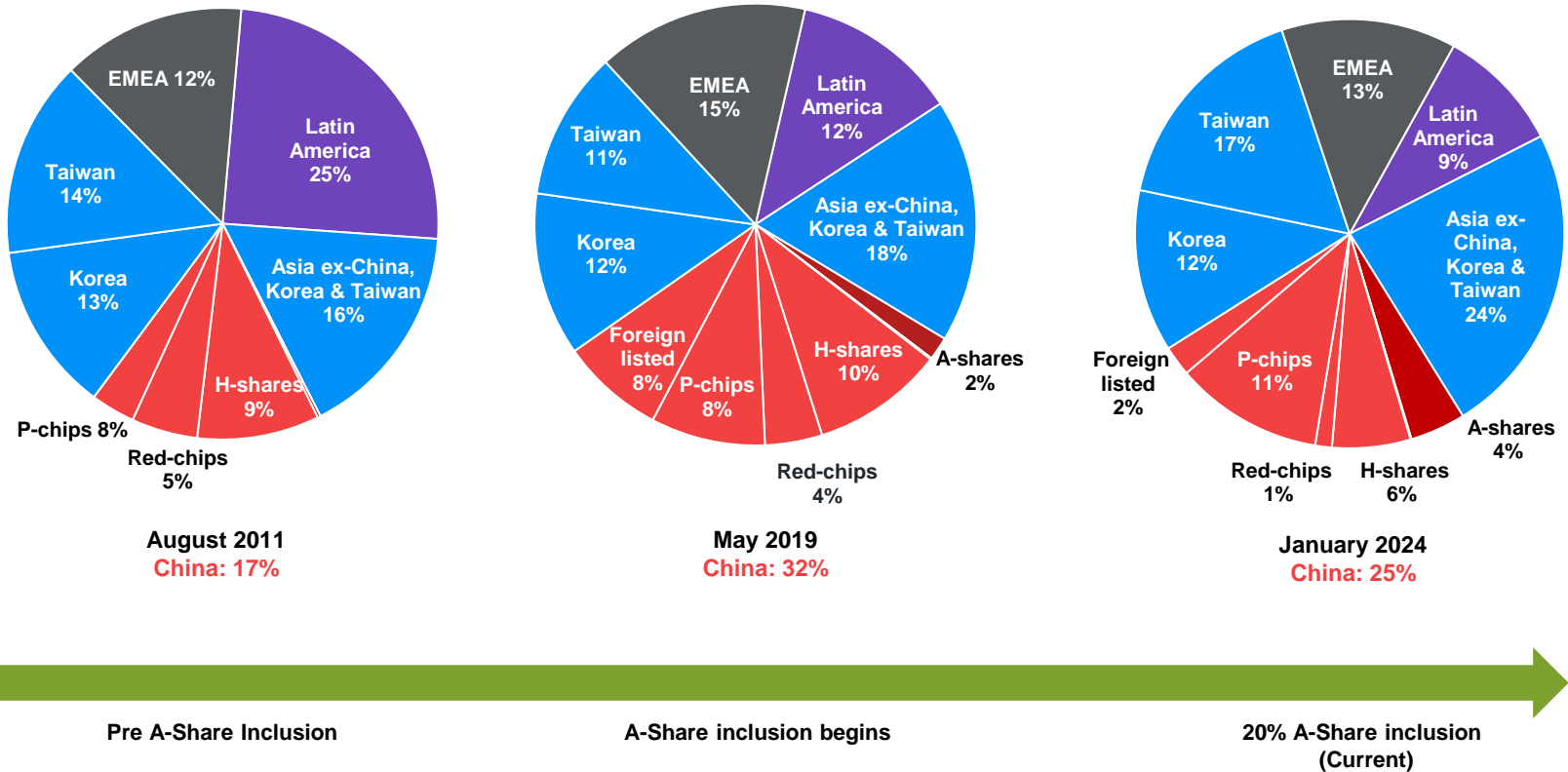
Guide to China. Data are as of January 31, 2024.



MSCI Emerging Markets Index: Inclusion of China A-Shares

GTM GTC 65

MSCI Emerging Markets Index: Inclusion of China A-Shares



Equities

Source: FactSet, MSCI, J.P. Morgan Asset Management.
Guide to China. Data are as of January 31, 2024.

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Onshore equities: Market opening

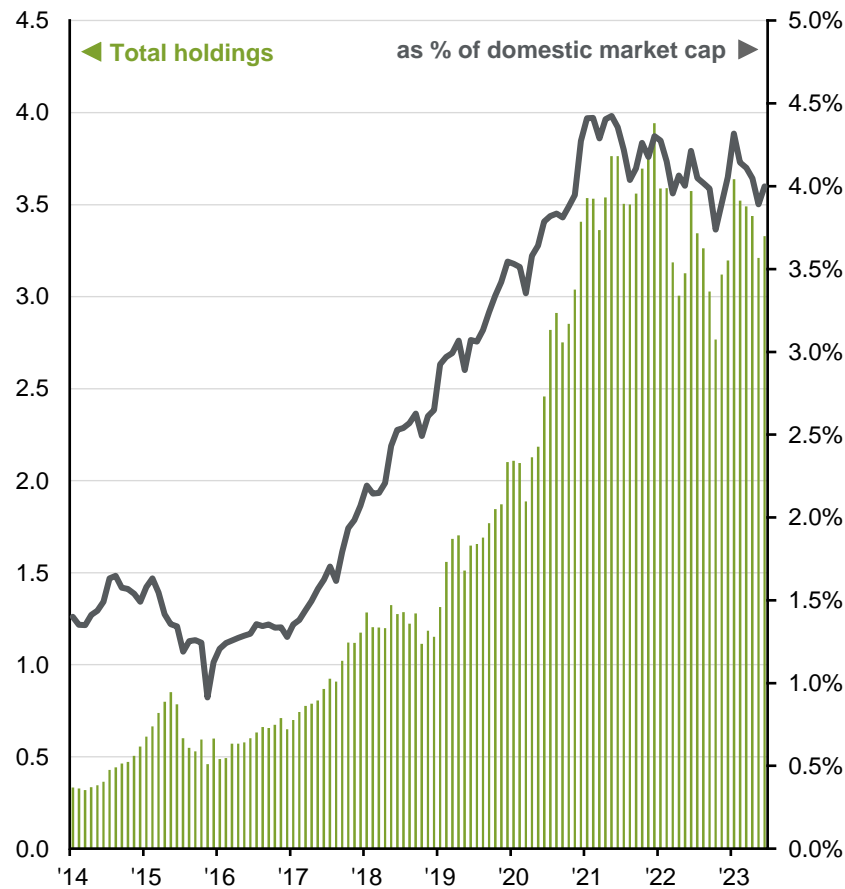
GTM

GTC

66

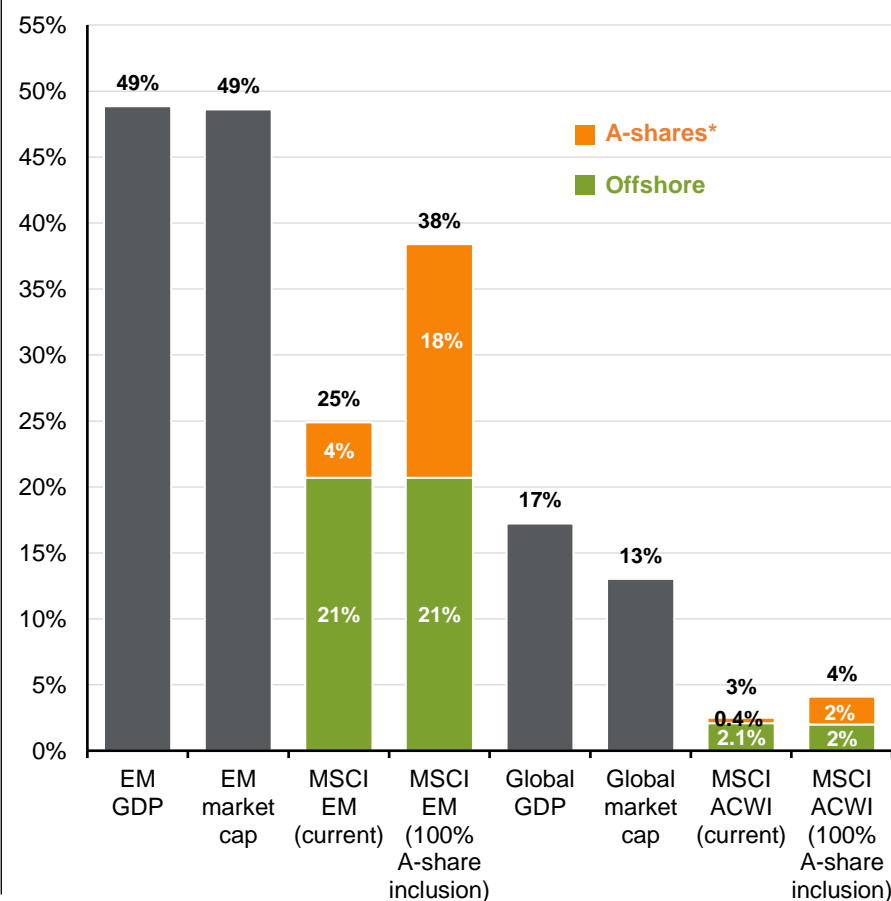
Foreign investors' holdings of onshore Chinese equities

CNY trillions



China's weight in selected indicators

% of total



Source: J.P. Morgan Asset Management; (Left) CEIC, People's Bank of China, Shanghai Stock Exchange, Shenzhen Stock Exchange; (Right) Bloomberg L.P., MSCI, World Bank. Share of EM GDP is for 2022 and is calculated as Chinese nominal GDP in U.S. dollars as a percentage of all emerging markets within the MSCI EM index and as a percentage of the global GDP. Share of EM market cap is for 2020 and is calculated as China's market capitalization of listed domestic companies as a percentage of all emerging markets' capitalization of listed domestic companies within the MSCI EM index and as a percentage of global market capitalization. *Currently, an index inclusion factor (IIF) of 20% is applied to China A Large Cap, ChiNext Large Cap and China A Mid Cap (including eligible ChiNext shares) within MSCI ACWI and MSCI EM Index. 100% A-share inclusion is shown for illustrative purposes only. Guide to China. Data are as of January 31, 2024.

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Onshore equities and global portfolios

GTM

GTC

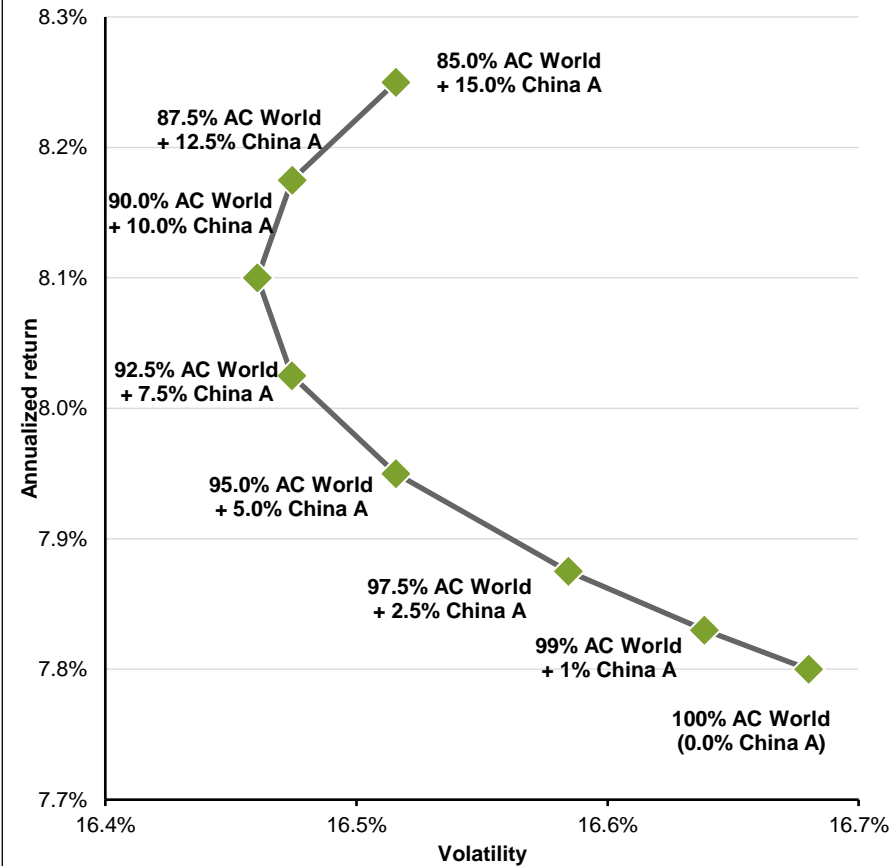
67

Correlation between A-shares and global equities

	S&P 500	MSCI ACWI	MSCI EM	MSCI EAFE	MSCI China	CSI 300
S&P 500	1.00					
MSCI ACWI	0.98	1.00				
MSCI EM	0.76	0.83	1.00			
MSCI EAFE	0.89	0.94	0.87	1.00		
MSCI China	0.53	0.61	0.85	0.66	1.00	
CSI 300	0.39	0.45	0.59	0.44	0.73	1.00

Efficient frontier

MSCI All Country World and China A-shares



Source: MSCI, J.P. Morgan Asset Management; (Left) FactSet, China Securities Index, Standard & Poor's. Correlations are based on monthly price return data in U.S. dollar terms for the period 1/31/2009–1/31/2024. The efficient frontier returns and volatility are based on the J.P. Morgan 2024 Long-term Capital Market Assumptions (LTCMA) estimates. Past performance is not indicative of current or future results. Guide to China. Data are as of January 31, 2024.

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Global investor positioning in Chinese assets

GTM

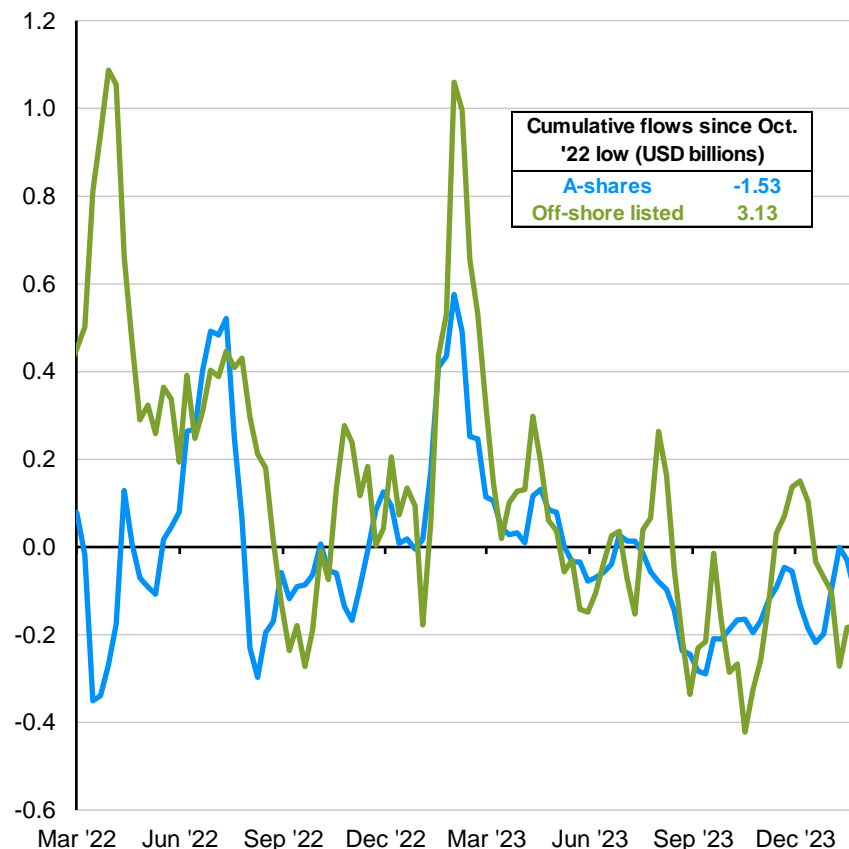
GTC

68

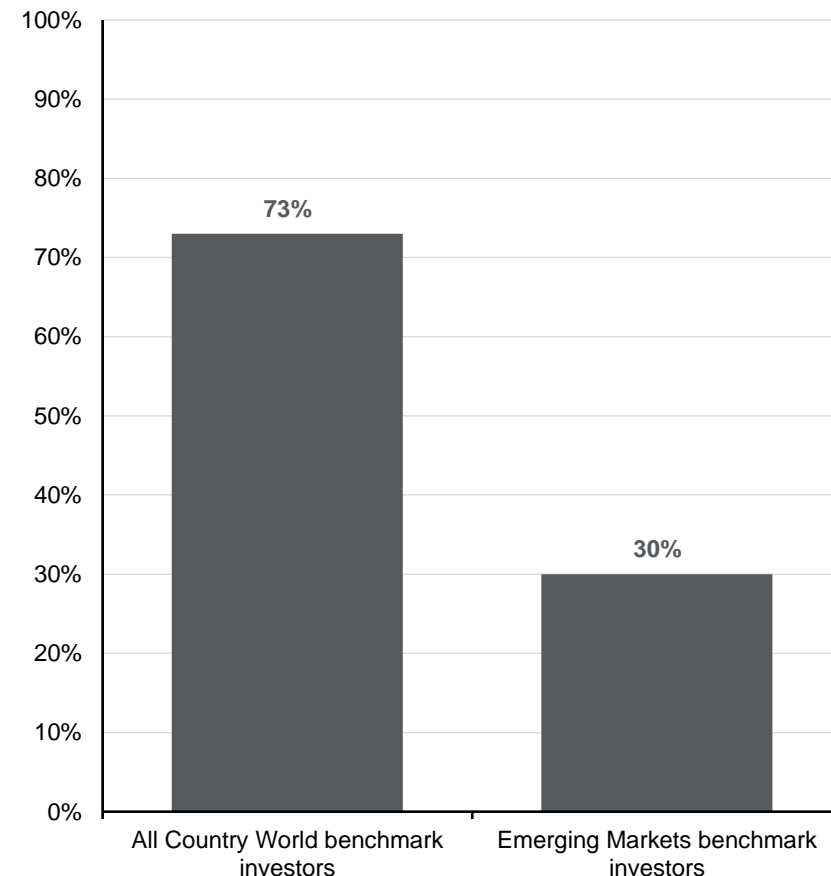
Equities

Total net flows into China equities

USD billions, active and passive, 4-week moving average



% of investors with no China A-share exposure



Source: J.P. Morgan Asset Management; (Left) EPFR, J.P. Morgan Global Economic Research; (Right) "Crafting the Optimal China Allocation Strategy: The Asset Owner's Perspective," Greenwich Associates, Q2 2020. Includes Chinese equities listed on Hong Kong and U.S. stock exchanges. *Guide to China*. Data are as of January 31, 2024.

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Onshore sentiment tracker

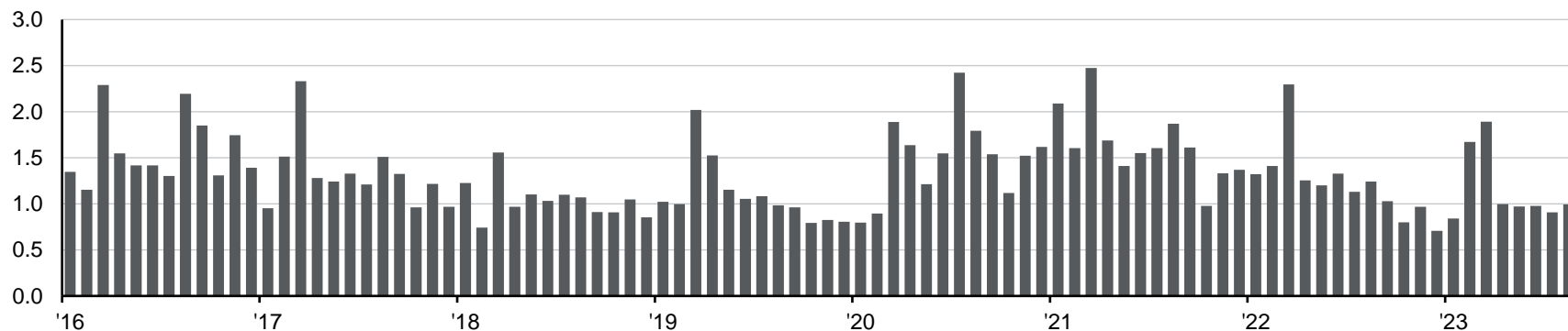
GTM

GTC

69

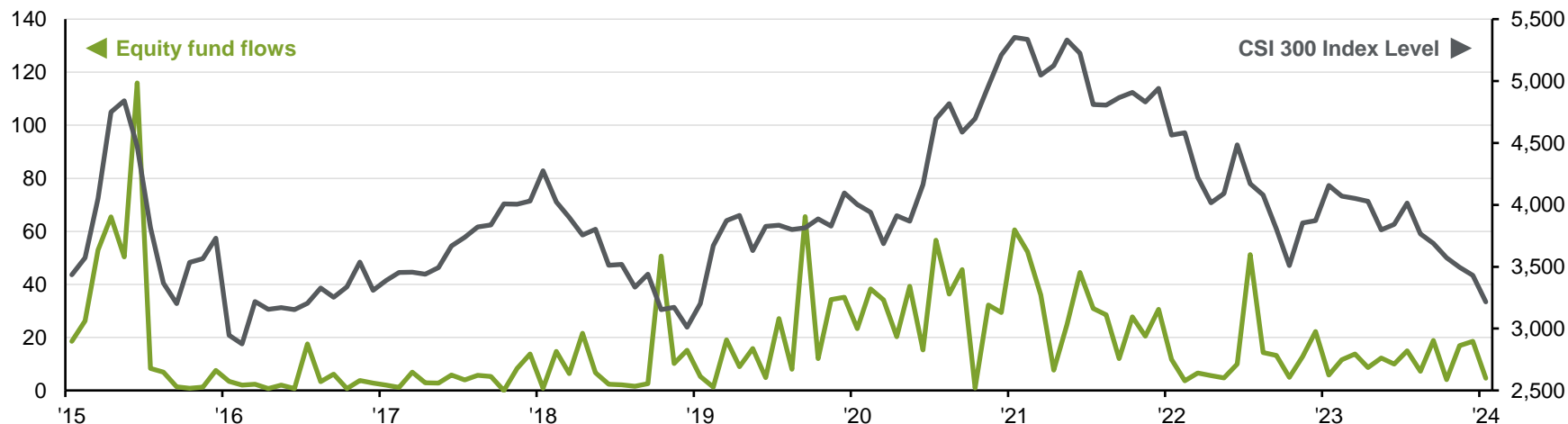
Number of new investor accounts

In millions



Funds raised in newly issued mutual funds and equity market movements

CNY billion



Source: J.P. Morgan Asset Management. (Top) CEIC, China Securities Depository and Clearing Corporation Limited. (Bottom) FactSet, Wind. Guide to China. Data are as of January 31, 2024.

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Equities



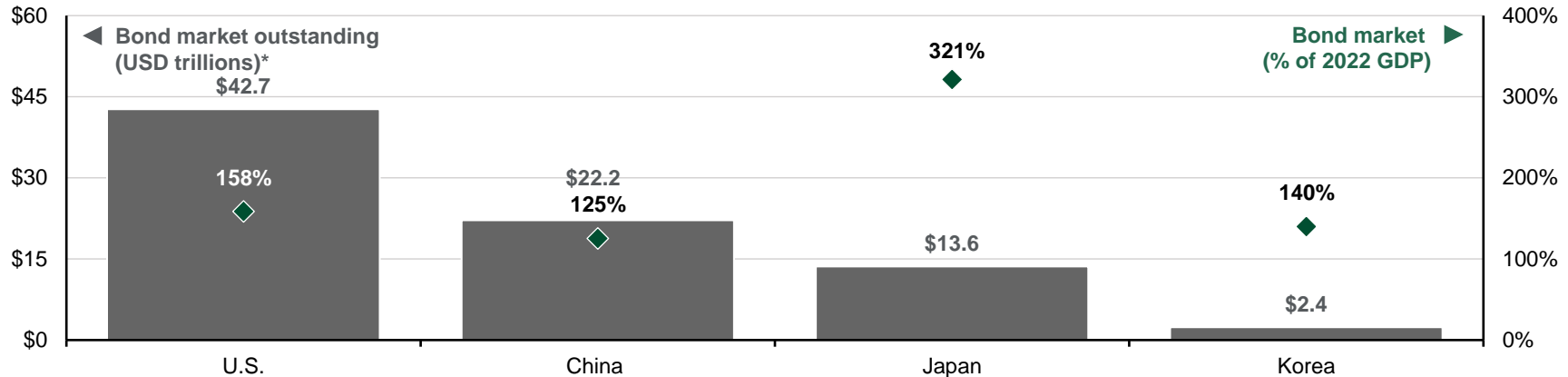
Debt and bond markets

GTM

GTC

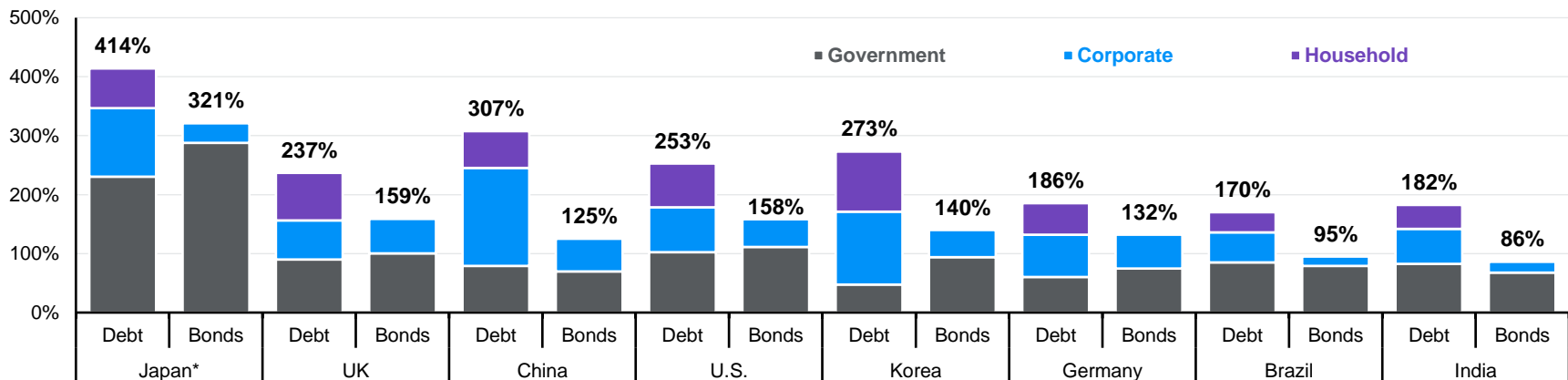
70

Bond market size in value and as % of GDP



Debt and bonds as % of GDP

Total market value of total debt and bonds* as % of nominal GDP, 2022



Source: BIS, Bloomberg L.P., IMF, World Federation of Exchanges, J.P. Morgan Asset Management. Debt valuation is as of 2Q23, bond valuation is as of January 31, 2024. Bond market outstanding refers to the total U.S. dollar value of bonds (corporate and government) in the market and does not reflect mandatory prepayment. *The difference in Japan's government borrowing in debt and in bonds is due to the differing valuation dates. *Government bonds include onshore listed central and local government bonds for all countries. Corporate debt is borrowing by non-financial corporations; Corporate bonds are all onshore listed corporate bonds. Household borrowing is only accounted for in total debt as individuals do not issue bonds. Guide to China. Data are as of January 31, 2024.

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Bonds and yields by market

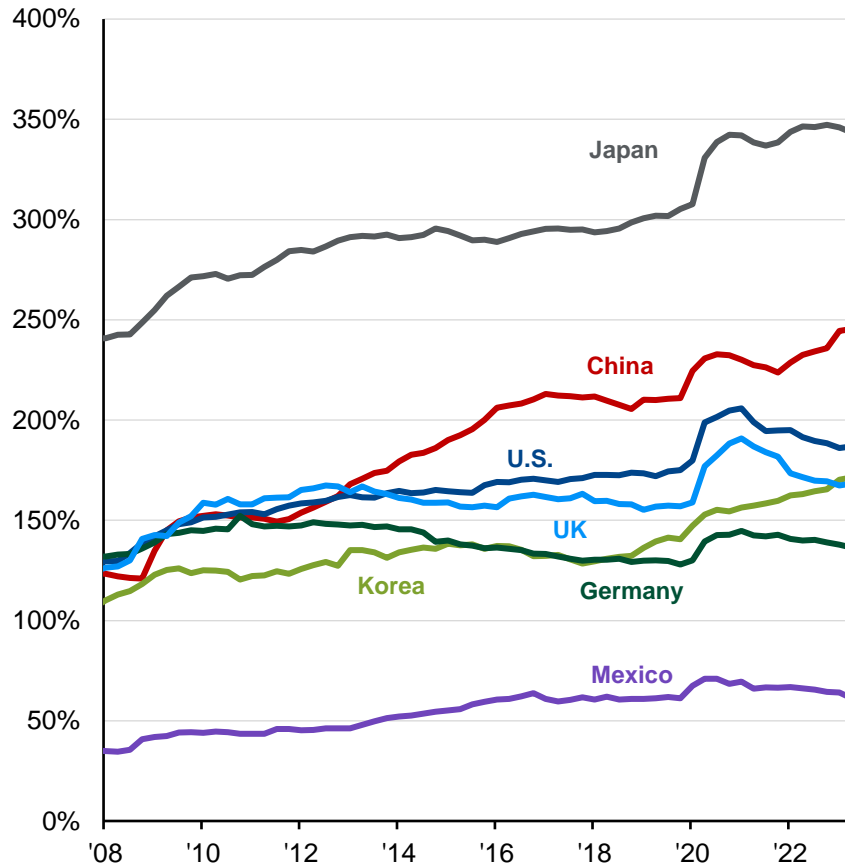
GTM

GTC

71

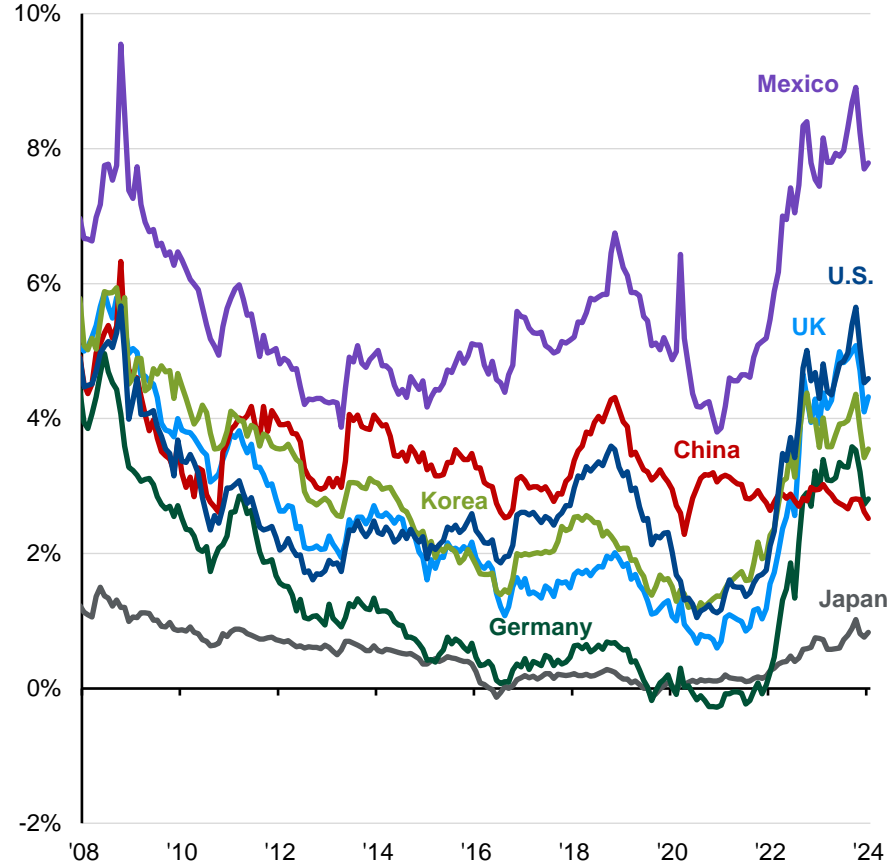
Debt by market

% GDP, includes government and corporate debt



Yields by market

Government and corporate bond indices



Source: BIS, Bloomberg L.P., FactSet, J.P. Morgan Asset Management.

Yields by market are provided by Bloomberg L.P. and are represented by the global aggregate for each market, except for U.S. which is based on Bloomberg U.S. Aggregate. Yield is not guaranteed. Positive yield does not imply positive return.

Guide to China. Data are as of January 31, 2024.

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Bond market in China

GTM

GTC

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China's three different bond markets

As of January 31, 2024



Value: USD\$8.3 trillion (the largest)
Average credit rating: A+
Average yield-to-maturity: 2.70%



Value: USD\$343 billion (the middle)
Average credit rating: A-
Average yield-to-maturity: 7.34%

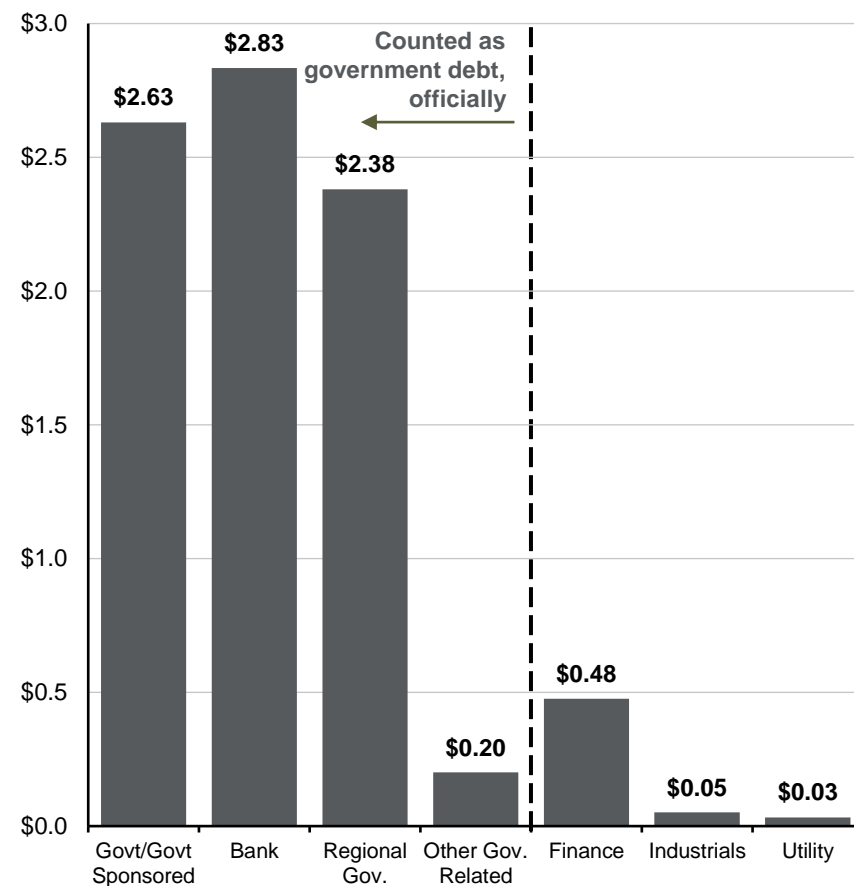


Value: USD\$40 billion (the smallest)
Average credit rating: AA-
Average yield-to-maturity: 3.14%

Fixed Income

China's onshore bond market by type of issuer

USD trillions, as of December 31, 2023



Source: Bloomberg L.P., FTSE Russell, Wind, J.P. Morgan Global Economic Research, J.P. Morgan Asset Management.

*FTSE Chinese (Onshore CNY) Broad Bond Index is used as a proxy for China onshore universe statistics. **J.P. Morgan Asia Credit Index (JACI) China is used as a proxy for Chinese foreign currency-issued bond universe statistics. ***FTSE Dim Sum (Offshore CNY) Bond Index is used as a proxy for China offshore universe statistics. Credit ratings are based on ratings from Moody's Analytics.
Guide to China. Data are as of January 31, 2024.

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Onshore government bonds

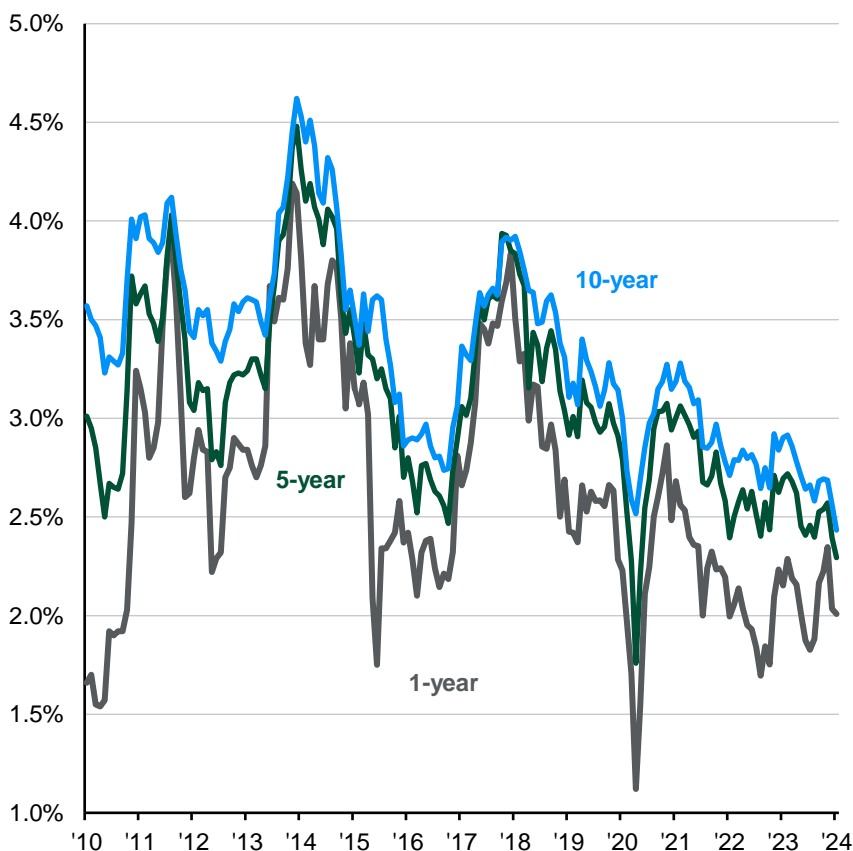
GTM

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73

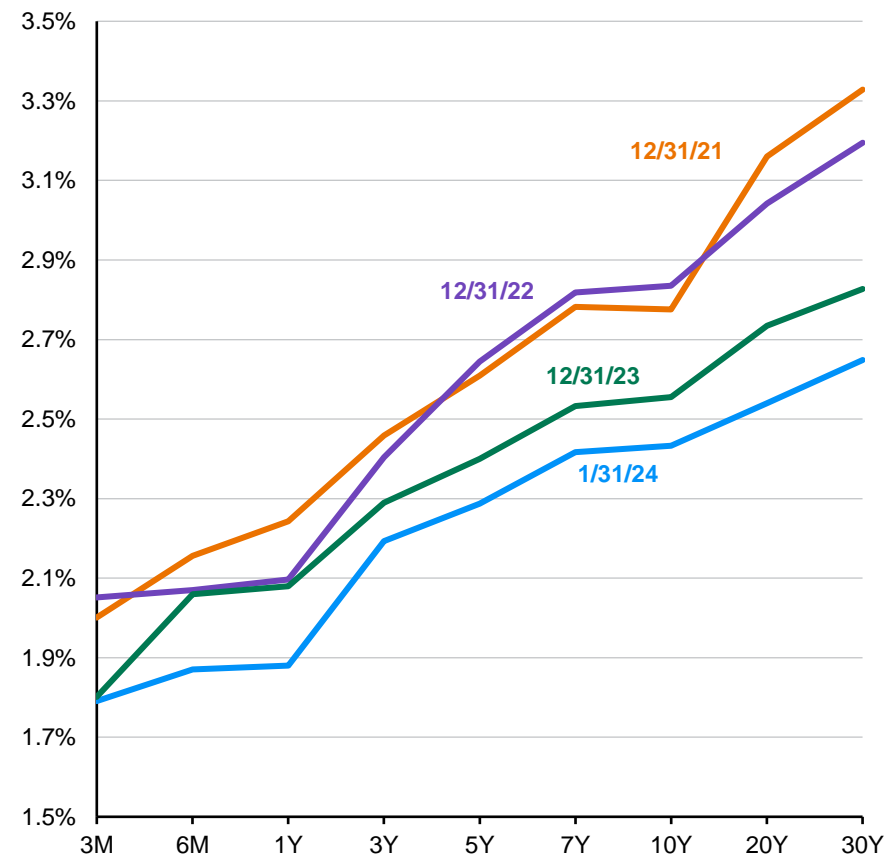
Onshore government bond yields

% per annum



Government bond yield curve

Yield to maturity





Onshore corporate bonds

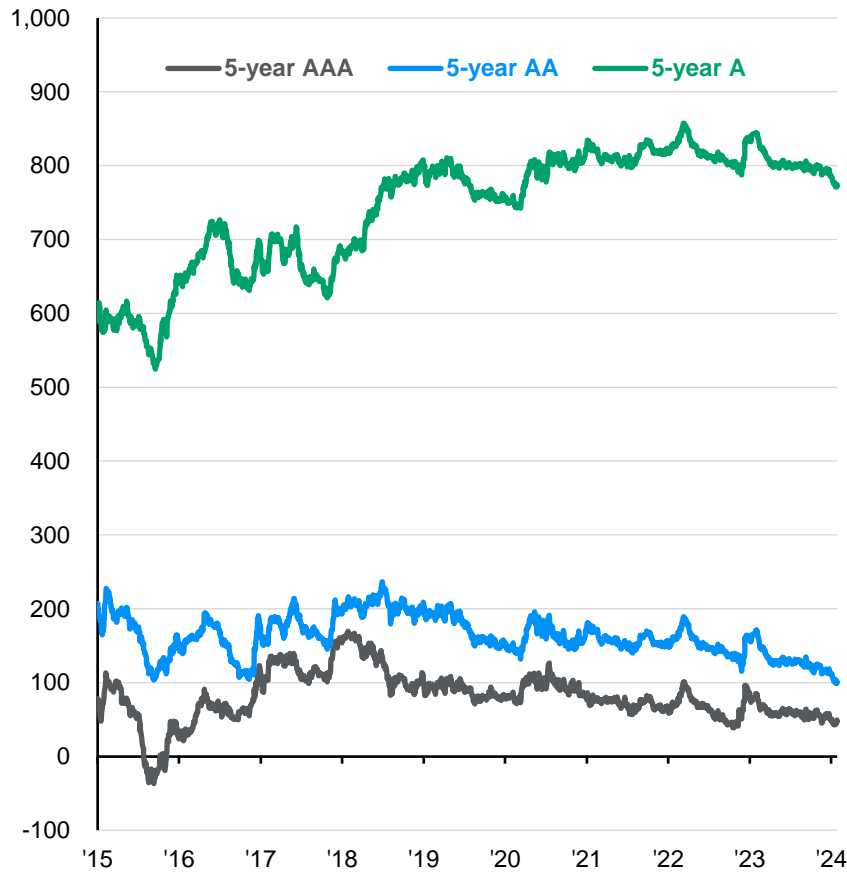
GTM

GTC

74

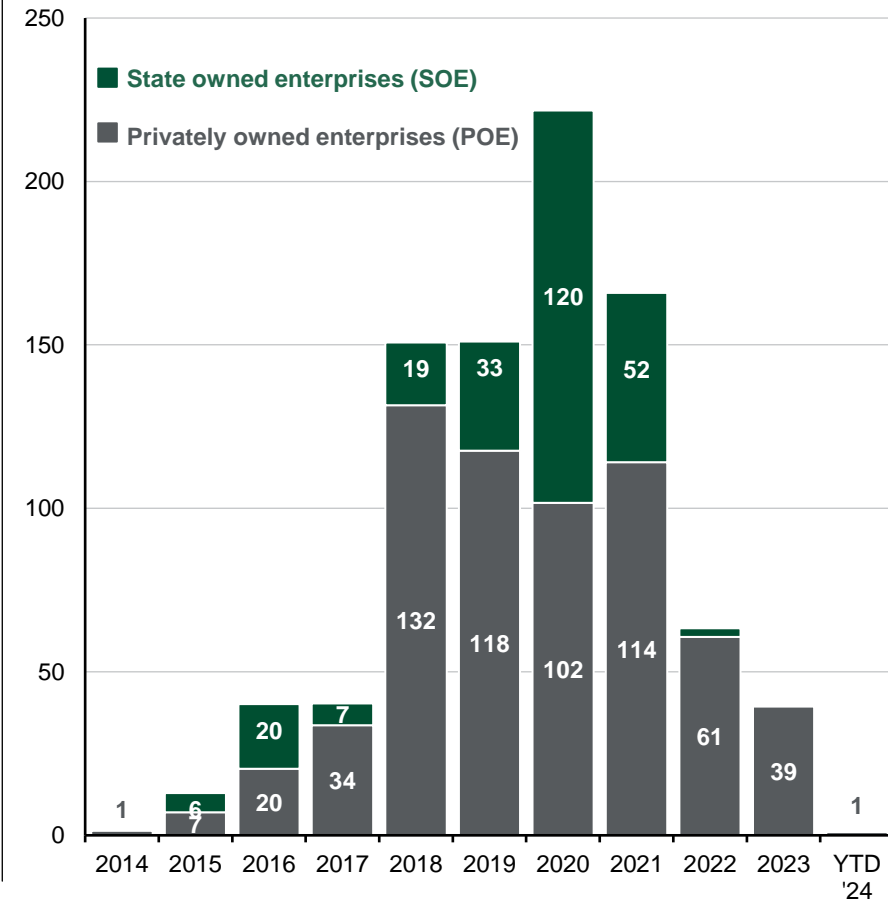
Spreads of onshore corporate bonds*

Basis points



Value of defaults in onshore market

CNY billion



Source: J.P. Morgan Asset Management. (Left) Wind. (Right) China Securities Index Co., Ltd.

*Credit rating in Chinese onshore bond market may be inflated, given the absence of international rating agencies.

Guide to China. Data are as of January 31, 2024.



Chinese offshore credit spreads and bond market returns

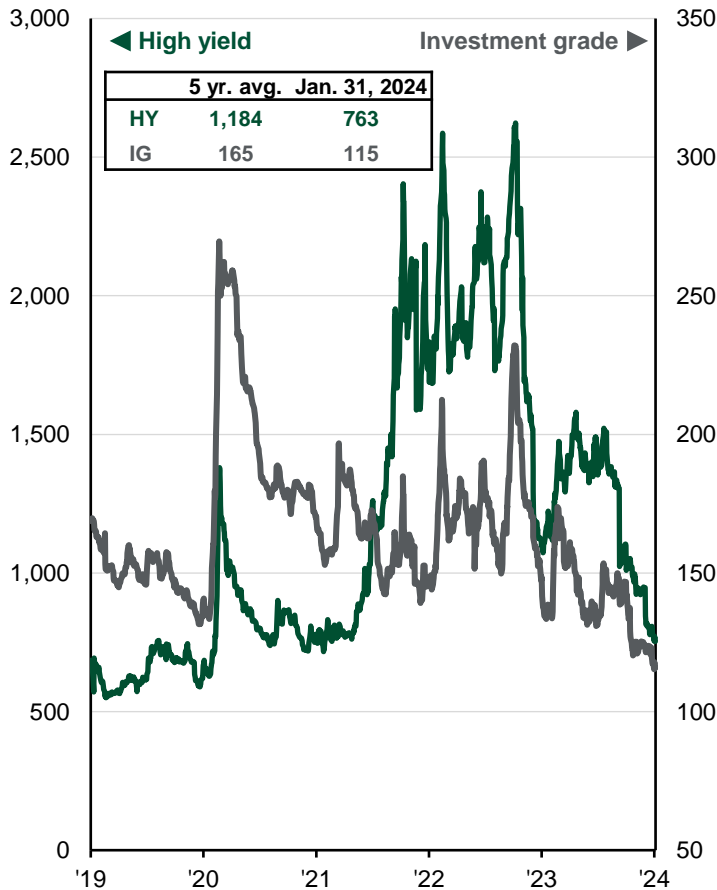
GTM

GTC

75

Chinese offshore corporate credit spreads

Basis points, daily



2019	2020	2021	2022	2023	YTD	2019-2023 Ann.
China Real Estate HY 14.9%	China Agg 9.8%	China Govt. 8.7%	China Govt. - 5.2%	Asian Bonds 7.0%	China Real Estate HY 8.6%	China Agg 3.8%
China HY 12.7%	China Govt. 9.3%	China Agg 8.4%	China Agg - 5.2%	China IG 7.0%	China HY 2.9%	China Govt. 3.7%
Asian Bonds 11.3%	Global Bonds 9.2%	China IG - 0.1%	China IG - 10.1%	Global Bonds 5.7%	China IG 0.4%	China IG 2.7%
China IG 10.2%	China Real Estate HY 8.7%	Asian Bonds - 2.4%	Asian Bonds - 11.0%	China Govt. 3.0%	Asian Bonds 0.3%	Asian Bonds 2.2%
Global Bonds 6.8%	China HY 7.5%	Global Bonds - 4.7%	Global Bonds - 16.2%	China Agg 2.7%	China Govt. 0.1%	Global Bonds 0.2%
China Agg 3.4%	China IG 6.6%	China HY - 26.3%	China HY - 22.5%	China HY - 11.9%	China Agg - 0.2%	China HY - 8.1%
China Govt. 2.8%	Asian Bonds 6.3%	China Real Estate HY - 37.2%	China Real Estate HY - 36.0%	China Real Estate HY - 50.3%	Global Bonds - 1.4%	China Real Estate HY - 20.1%

Source: Bloomberg Finance L.P., FactSet, J.P. Morgan Economic Research, J.P. Morgan Asset Management.

Left graph indices used are: Bloomberg Asia ex-Japan USD Credit China High Yield (China HY) and Bloomberg Asia ex-Japan USD Credit China IG (China IG). Right graph based on Bloomberg China Aggregate Index (China Agg), Chinese Central Government Bonds Index (China Gov't), Bloomberg Asia ex-Japan China High Yield Credit (China HY), Bloomberg Asia ex-Japan China Investment Grade Credit Index (China IG), Markit Asia ex-Japan China High Yield Real Estate Credit (China Real Estate HY), J.P. Morgan Asia Credit Index (JACI) (USD Asian Bonds), Bloomberg Global Aggregate (USD Global Bonds). Returns are in U.S. dollars. 5-year annualized returns are from January 31, 2019 to January 31, 2024. Past performance is not a reliable indicator of current and future results.

Guide to China. Data are as of January 31, 2024.

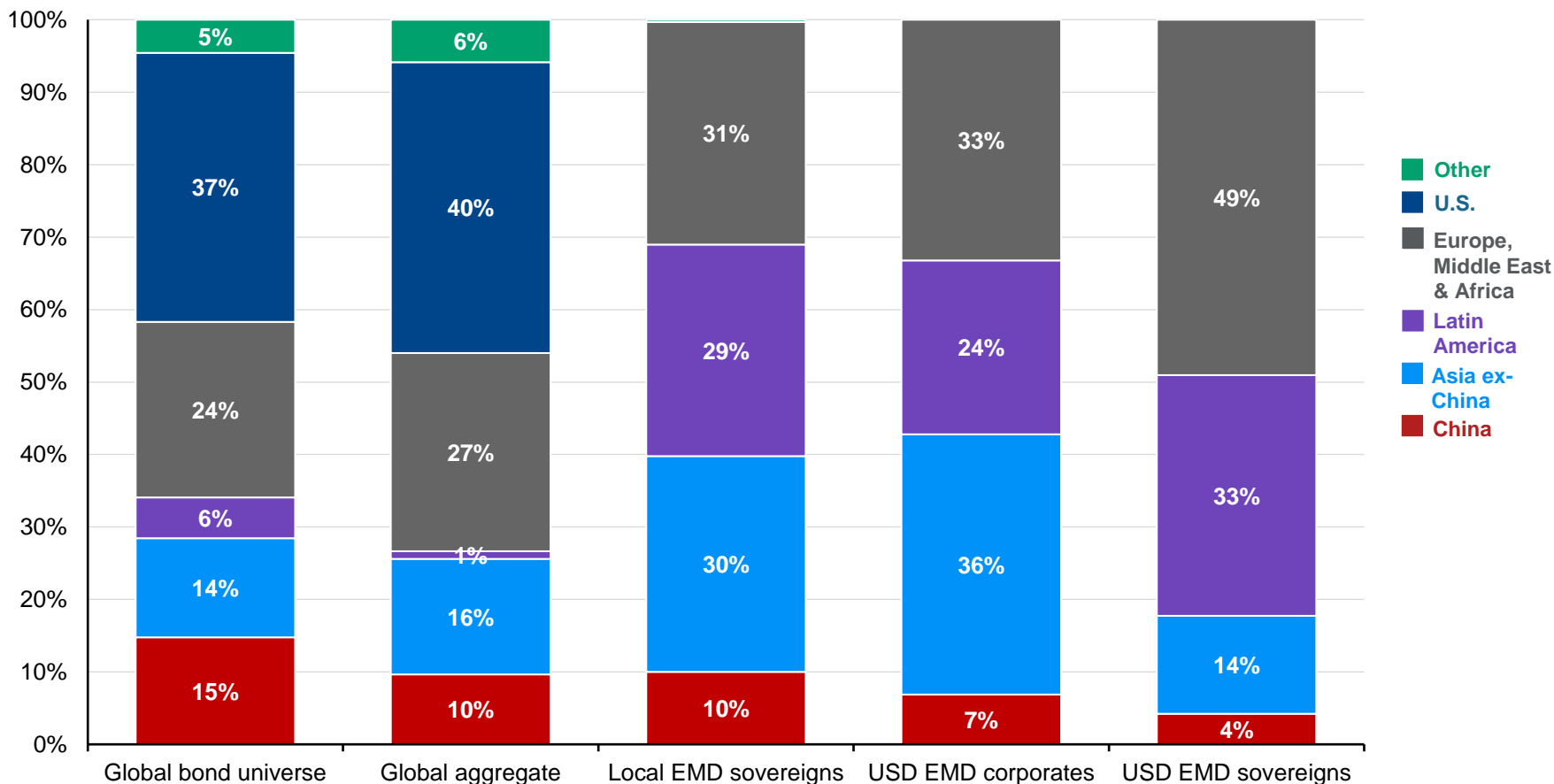
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Bond index weightings to China

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Weight of China in bond universe and bond indices



Source: BIS, Bloomberg L.P., FactSet, J.P. Morgan Economic Research, J.P. Morgan Asset Management. Based on J.P. Morgan CEMBI Broad Index (USD EMD corporates), J.P. Morgan EMBIG Broad Diversified Index (USD EMD sovereigns), J.P. Morgan GBI-EM Global Diversified Index (Local EMD sovereigns), Bloomberg Global Aggregate (Global Aggregate). Global bond universe data from the BIS are as of 2Q23. If the total debt figure was not available, international debt + domestic debt was used as a proxy. *Guide to China*. Data are as of January 31, 2024.



Returns, volatility and correlation of Chinese bonds

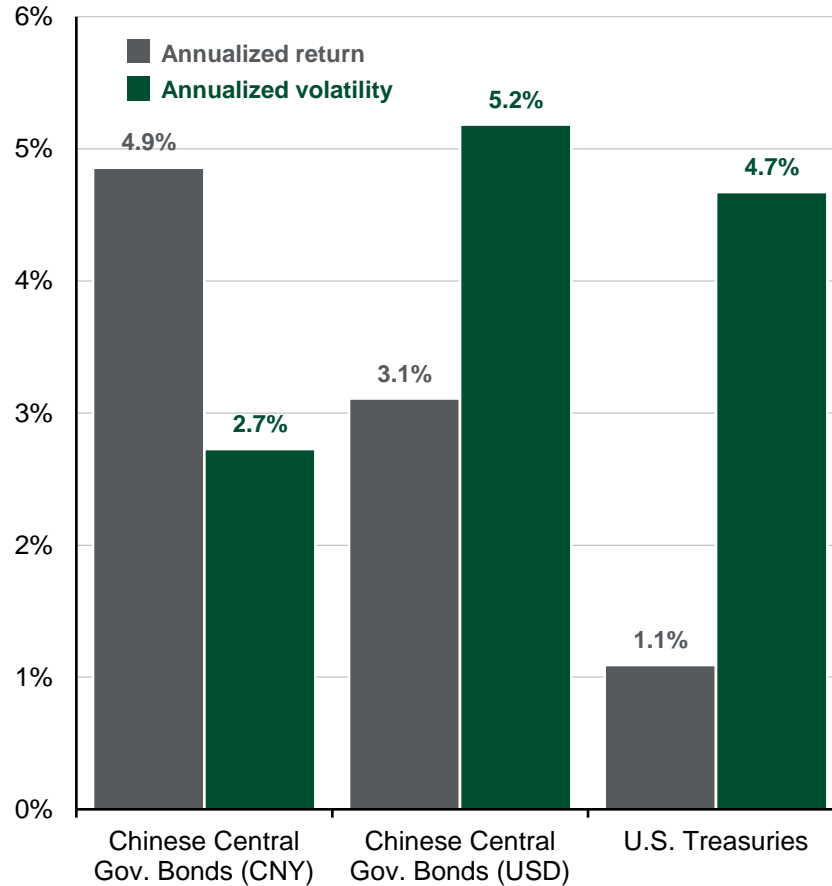
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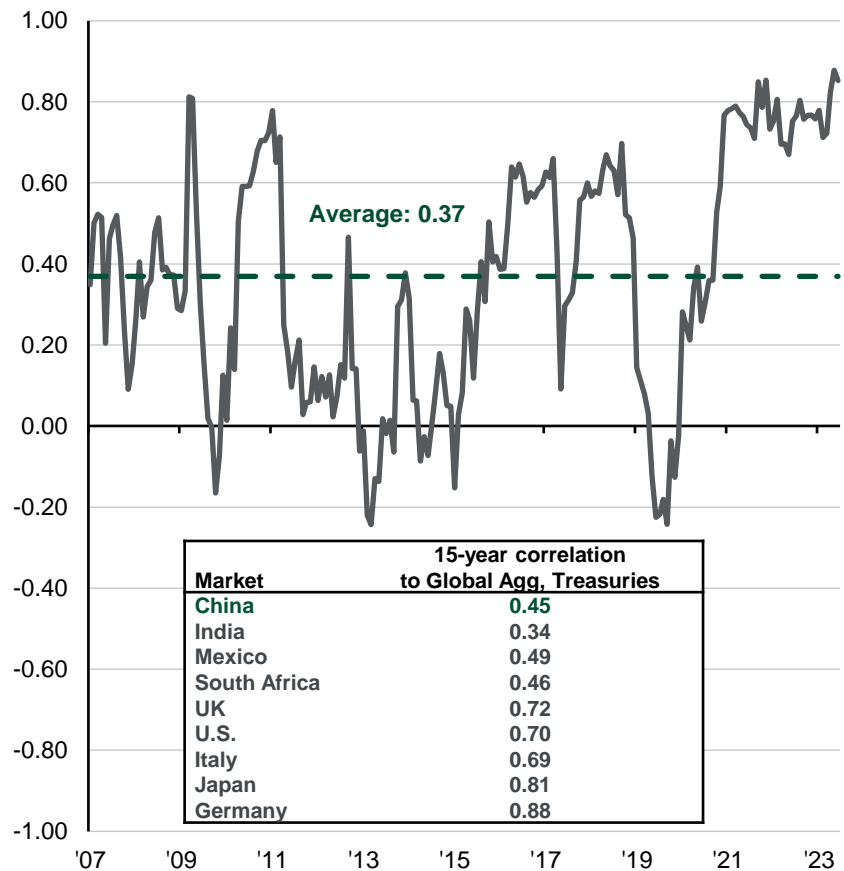
Return and volatility of government bonds

Annualized total return and volatility, Jan. 2014 – Jan. 2024



Correlation between Chinese and global government bonds

Total return index in USD*, 12-month rolling correlations



Source: Bloomberg L.P., J.P. Morgan Asset Management. (Left) Central government bonds and U.S. Treasury bonds returns are unhedged and calculated for the period between 1/31/2014 and 1/31/2024. Volatility calculated based on monthly price changes. Chinese and benchmark bond returns shown are calculated for the period between 1/31/2019 and 1/31/2024. (Right) J.P. Morgan Global Economic Research. *Indices are Bloomberg Global Aggregate Treasuries Total Return Index and Bloomberg China Treasury Total Return Index. Market correlations use monthly total returns in U.S. dollar terms from 1/31/2009–1/31/2024. Past performance is not a reliable indicator of current and future results. Diversification does not guarantee investment returns and does not eliminate the risk of loss. *Guide to China*. Data are as of January 31, 2024.



Appendix: Key facts about China

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Basics

Official name: People's Republic of China (PRC)

Formation: c. 2070 B.C. (first pre-imperial dynasty)

Founding of the State: 1949

Demographics

Population: 1.4 billion (2022)

56 ethnic groups, with the majority of the population (92%) being Han

Official language: Mandarin

Median age: 38.4 (2021)

Geography

Capital: Beijing

Largest cities by population: Shanghai, Beijing, Tianjin, Guangzhou, Shenzhen, Wuhan

Land area: 9.7 million sq. km or 3.7 million sq. mi

Economy

Type: Socialist market economy

Nominal GDP: US\$18.32 trillion (2022)

Nominal GDP per capita: \$12,733 (2021)

Gini coefficient: 0.47 (2021)

Government

Ruling party: Chinese Communist Party (CCP)

General Secretary of CCP, President of PRC: Xi Jinping

Premier of PRC: Li Qiang

Legislative body: National People's Congress (NPC)

The General Secretary of the CCP is elected by the Party Congress every 5 years. The President of PRC and the Premier of PRC are elected by the NPC every 5 years. The Premier has a two term limit while the President of the PRC and the General Secretary of the CCP have no term limit.

Central Bank

The central bank is the **People's Bank of China (PBOC)**

Target/goal: Maintain stability of the value of the currency and promote economic growth through tools such as open market operations, reserve requirement ratios, interest rates and lending facilities to banks

Policy: Mix of quantity and price control

Currency

Renminbi (CNY) or Chinese Yuan (¥) is the official currency

In foreign exchange markets:

CNY is the onshore CNY traded within China, managed by the PBOC

CNH is the offshore currency traded outside of China at a free-floating rate

Equity markets

Size: \$11.4 trillion (2022)

The **onshore market** is comprised of Chinese companies listed in Shanghai and Shenzhen stock exchanges

The **offshore market** is comprised of Chinese companies listed in the Hong Kong Stock Exchange and overseas

Fixed income markets

Size: \$18.3 trillion (2022)

Onshore bonds are listed in Mainland Chinese exchanges and denominated in CNY

Offshore bonds or “**dim sum bonds**” are primarily traded in Hong Kong and denominated in CNH

Offshore foreign currency bonds are traded in Hong Kong dollars, U.S. dollars or euros.



J.P. Morgan Asset Management: Index Definitions

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All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

Equities:

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. The index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. The **S&P 500 Index** focuses on the large-cap segment of the market; however, since it includes a significant portion of the total value of the market, it also represents the market.

The **MSCI® EAFE** (Europe, Australia, Far East) Net Index is recognized as the pre-eminent benchmark in the United States to measure international equity performance. It comprises 21 MSCI country indexes, representing the developed markets outside of North America.

The **MSCI Europe Index**SM is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe. As of June 2007, the MSCI Europe Index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The **MSCI ACWI (All Country World Index) Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of June 2009 the **MSCI ACWI** consisted of 45 country indices comprising 23 developed and 22 emerging market country indices.

The **MSCI ACWI ex USA Index** captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 27 Emerging Markets (EM) countries*. With 2,357 constituents, the index covers approximately 85% of the global equity opportunity set outside the US.

The **MSCI Emerging Markets Index**SM is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of June 2007, the MSCI Emerging Markets Index consisted of the following 25 emerging market indices: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The **MSCI China Index**SM captures large and mid cap representation across China H shares, B shares, Red chips and P chips. With 148 constituents, the index covers about 84% of this China equity universe. The MSCI China Index was launched on December 31, 1992.

The **MSCI China A Index** captures large and mid-cap representation across China securities listed on the Shanghai and Shenzhen exchanges. The index covers only those securities that are accessible through "Stock Connect". The index is designed for international investors and is calculated using China A Stock Connect listings based on the offshore CNY exchange rate (CNH).

The **MSCI China Growth Index** captures large and mid cap securities exhibiting overall growth style characteristics across the Chinese equity markets. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

The **MSCI China Value Index** captures large and mid-cap Chinese securities exhibiting overall value style characteristics. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

The **Shanghai Stock Exchange Composite Index** is a capitalization-weighted index. The index tracks the daily price performance of all A-shares and B-shares listed on the Shanghai Stock Exchange. The index was developed on December 19, 1990 with a base value of 100.

The **China Shenzhen Composite Index** is an actual market-cap weighted index that tracks the stock performance of all the A-share and B-share lists on Shenzhen Stock Exchange. The index was developed on April 3, 1991 with a base price of 100.

The **Hang Seng Index** ("HSI") is the most widely quoted gauge of the Hong Kong stock market. It includes the largest and most liquid stocks listed on the Main Board of the Stock Exchange of Hong Kong. Stocks are free-float-adjusted for investability representation, and a 10% capping is applied to avoid single stock domination. The index was developed on November 24, 1969 with a base price of 100.

The **Shanghai Shenzhen CSI 300 Index** ("CSI Index") is a free-float weighted index that consists of 300 A-share stocks listed on the Shanghai or Shenzhen Stock Exchanges. The Index has been calculated since April 8, 2005, with a base level of 1000 on 12/31/2004.

The **SZSE Composite Index** is a stock market index of Shenzhen Stock Exchange. It includes all companies listed on the exchange.

The **Hang Seng China Enterprises Index** ("HSCIEI") serves as a benchmark that reflects the overall performance of Mainland securities listed in Hong Kong. The index comprises the largest and most liquid Mainland securities listed in Hong Kong. Stocks are free float-adjusted for investability representation, with a 10% capping to avoid single stock domination. The index was launched on August 8, 1994.

The **SME Index** comprises the 100 largest and most liquid A-share stocks listed and trading on the SME Board Market. The index aims to reflect the performance of the Small and Medium Enterprise (SME) Board level. The index is free-floating, with a base date of May 31, 2010.

The **ChiNext Index** comprises the 100 largest and most liquid A-share stocks listed and trading on the ChiNext Market of the Shenzhen Stock Exchange. The index aims to reflect the performance of ChiNext Market level. The index free-float capitalization-weighted. The index has a base value of 1000 on May 31, 2010.

Fixed income:

The **Bloomberg Global Aggregate Index** is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

The **J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI)**: The CEMBI tracks total returns of US dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries, and consists of an investable universe of corporate bonds.

The **J.P. Morgan GBI EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **J.P. Morgan Emerging Markets Bond Index Global Diversified (EMBI Global Diversified)** tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, Eurobonds. The index limits the exposure of some of the larger countries.

The **FTSE Chinese (Onshore CNY) Broad Bond Index** measures the performance of a subset of bonds from the FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI) which tracks onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt issued in mainland China. The index includes bonds that are traded on the China Interbank Bond Market (CIBM).

The **J.P. Morgan Asia Credit Index Core (JACI Core)** consists of liquid US-dollar denominated debt instruments issued out of Asia ex-Japan. The JACI Core is based on the composition and established methodology of the J.P. Morgan Asia Credit Index (JACI), which is market capitalization weighted. JACI Core includes the most liquid bonds from the JACI by requiring a minimum \$350 million in notional outstanding and a minimum remaining maturity of 2 years. JACI Core also implements a country diversification methodology. Historical returns and statistics for the JACI Core are available from December 30, 2005.



J.P. Morgan Asset Management: Index Definitions

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Fixed income cont.:

The **J.P. Morgan Asia Diversified (JADE) Indices** track local currency government bonds issued by countries within the Asia region (excluding Japan). The two main composite series are the JADE Broad and the JADE Global which provide Diversified exposure to the countries within the region. The JADE Global excludes countries with capital controls and those not accessible by foreign investors. Launched in March 2016, the JADE Broad/Global indices have daily historical index levels and statistics starting from Dec 31, 2004.

The **Bloomberg Global Aggregate - Corporate Index** is a flagship measure of global investment grade, fixed-rate corporate debt. This multi-currency benchmark includes bonds from developed and emerging markets issuers within the industrial, utility and financial sectors.

The **Bloomberg Global Treasury Index** tracks fixed-rate, local currency government debt of investment grade countries, including both developed and emerging markets. The index represents the treasury sector of the Global Aggregate Index and contains issues from 37 countries denominated in 24 currencies.

The **CSI Corporate Bond Index** selects eligible corporate bonds listed at Shanghai Stock Exchange and Shenzhen Stock Exchange, with remaining term to final maturity over 1 year. The index was launched on June 9, 2003 and is based at 100 to Dec 31, 2002.

Other asset classes:

The Bloomberg Industrial Metals Subindex is composed of futures contracts on aluminum, copper, nickel and zinc. It reflects the return of underlying commodity futures price movements only. It is quoted in USD.

Definitions:

Price to forward earnings is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise.

The price of **equity** securities may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

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J.P. Morgan Asset Management – Risks & disclosures

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