Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 20

MEETING DATE: **October 20, 2021**

SUBJECT: **Education: Investment Opportunities in China**

SUBMITTED FOR: ___ **Consent** ____ **Deliberation and Action** _X_ **Receive and File**

RECOMMENDATION

Staff recommends that the Board receive and file the education presentations provided by J.P. Morgan and SCERS' investment staff.

PURPOSE

This item supports the Annual Investment Plan to provide education to Board members.

SUMMARY

The objective of this meeting is to provide the Board with a market update, outlook, and background on the investable opportunity set within China. Staff believes that this presentation is important given the growing investable opportunity set within China, both within the public markets and private markets, combined with headlines often associated with the country.

J.P. Morgan, who is one of SCERS' investment managers (SCERS is invested in a 130/30 domestic equity extension strategy), has been invited to speak to the macro-economic environment, the investable universe, and unique risk factors to investing in China. Staff will follow the J.P. Morgan presentation with a summary of SCERS' current exposure to China across both public and private markets, the approach SCERS has taken to investing in China, and potential investable opportunities and risk considerations in the future.

Within the public equity markets, SCERS' current exposure to China is primarily through broad emerging markets mandates, with similar exposure to that of the global MSCI ACWI Index. As part of the recently approved changes to the Strategic Asset Allocation, Staff and Verus will be recommending adjustments in coming months to the renamed Global Equity asset class. This is expected to include flexibility within the asset class structure to include country specific allocations, such as to China. While SCERS' exposure to China within the private markets is minimal, Staff and consultants continue to explore investable opportunities, particularly within the real estate sector, where SCERS has existing exposure to the industrial/logistics property type within China. Recommendations on any potential investments will be presented to the Board at a future date under the existing protocols.

Presenting from J.P. Morgan will be Gabriel D. Santos, Executive Director and Global Market Strategist on the J.P. Morgan Asset Management Global Market Insights Strategy Team, and Lara Clarke, Managing Director and Client Advisor within J.P. Morgan Asset Management.

CHINA OVERVIEW

Over the years, China has become a more important component to the global economy. This can be seen within the data that J.P. Morgan has compiled, including China's growing contribution to global GDP. With the growth in China, there has also been a structural shift in the composition of China's economy. Historically, China's primary drivers of growth were the manufacturing and agriculture sectors, but with the emergence of the middle class, the services sector now makes up the majority of China's GDP. The middle class makes up 41% of the Chinese population, with that number expected to grow to 72% by 2030, according to J.P. Morgan data. The Chinese consumer is becoming more prevalent in the global economy with increasing urbanization rates within the economy, and its technological presence outpacing developed countries around the world.

There are distinct characteristics of the country that make it an attractive long-term strategic investment. Importantly and foremost, China is the second largest economy in the world behind the U.S., and with a population of 1.4 billion is projected to surpass the U.S. economy and become the largest economy by 2027. The country is also one of the world's most digitally savvy societies. According to McKinsey's 2019 China Economy research, China has an estimated 750 million internet active residents that spend an average of 27 hours online each week, with the digital economy contributing about a third of China's GDP.

China is in the early stages of structurally changing its economy from manufacturing and export-driven to domestic consumption and innovation-driven. When measured against the U.S service sector's share of the economy, income and consumption, size of the middle class, and urbanization rate, China is about two decades behind according to Oxford Economics' 2018 research on China's economy.

Recognizing the need to grow its economy in order to lift its people's living standards, the Chinese government has implemented a number of policy objectives to promote and support a high-value economy and in turn increase domestic consumption. These policy initiatives have been outlined within China's most recent 5-Year plans. China's policy initiative emphasizes domestic consumption and self-reliance by leveraging China's large domestic market while retaining the existing policy of opening-up the economy to create a more balanced growth trajectory. China's economic development over the next five years will come from increased domestic consumption and technological innovation. The government's goal is to raise incomes through furthering the growth of high value companies, particularly in technology, which will lead to greater urbanization and consumption, thus confirming China will be and remains a long-term attractive investment opportunity.

With the growth that China has experienced has come growing headlines and risk considerations, including environmental concerns, regulatory and geopolitical risks, trade wars and sanctions, human rights concerns, and potential military conflicts. While many of these risk considerations are not unique to China, they tend to garner significant attention.

With the macro level growth has come rapid growth within the investable markets within China, both public markets and private markets. J.P. Morgan will speak to the growth and size of the Chinese equity markets, including the rapid growth of the local A-shares market, which are stock shares of mainland China-based companies that trade on Chinese stock exchanges. These shares historically were only available for purchase by mainland Chinese citizens, but over recent years have been made available for purchase by institutions outside of China. They also have an increasing presence within U.S. institutional investor portfolios. J.P. Morgan will also speak to the debt and bond markets in China, where China has a growing weight within global bond indexes. In addition, J.P. Morgan will speak to the private markets in China, in particular to that of private equity, which has seen a larger number of funds investing in the country, both through global asset managers and local China based funds. With its increasing global technology presence, the venture capital universe has seen rapid growth within China as well.

SCERS' EXPOSURE IN CHINA

The Staff presentation will cover SCERS' current exposure to China across both public and private markets, the approach SCERS has taken to investing in China, and the potential investable opportunity set and risk considerations investing in public and private markets in China**.**

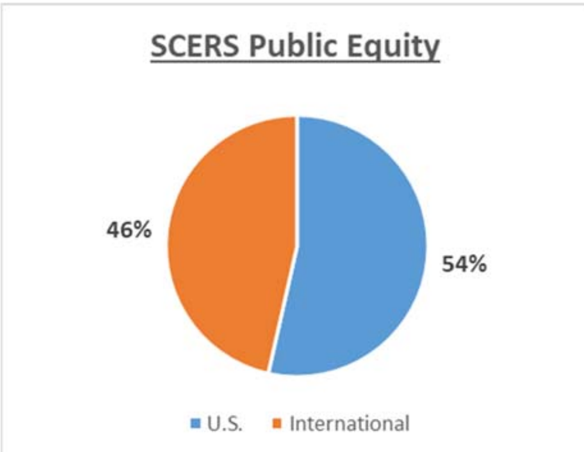
SCERS has minimal exposure to Chinese markets. Within the public markets, as described below, the exposure is primarily through broad emerging markets exposure, and SCERS' overall exposure is less than that of the global MSCI ACWI Index. SCERS does not have any dedicated mandates within the China markets for the public equity or bond markets.

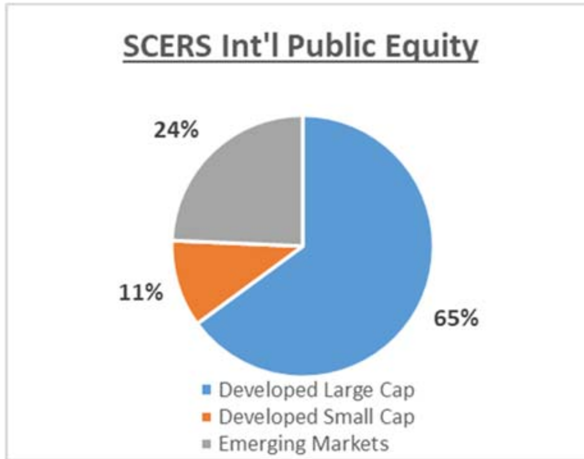
SCERS has historically approached the private markets through a macro and thematic lens. Given the illiquidity within the private markets and unique risk considerations to investing in China, Staff and SCERS' consultants have generally viewed China from a macro view in identifying investment opportunities in China. If there is a strong thematic view that has been formulated, the evaluation of an underlying investment opportunity centers on whether there is enough of a return premium over a similar investment in the U.S. or developed market to compensate SCERS for the illiquidity risk and other risk considerations. An example of this is in SCERS' Real Estate portfolio, which contains SCERS' only dedicated private markets exposure to China. As described below, SCERS invested in two funds that develop and/or acquire logistics facilities within China that are benefitting from China's growing consumer led economy and lack of logistics supply to meet demand. Within SCERS' other private markets asset classes, SCERS' exposure to China is minimal and any exposure is through funds invested in multiple regions that include China, as described below.

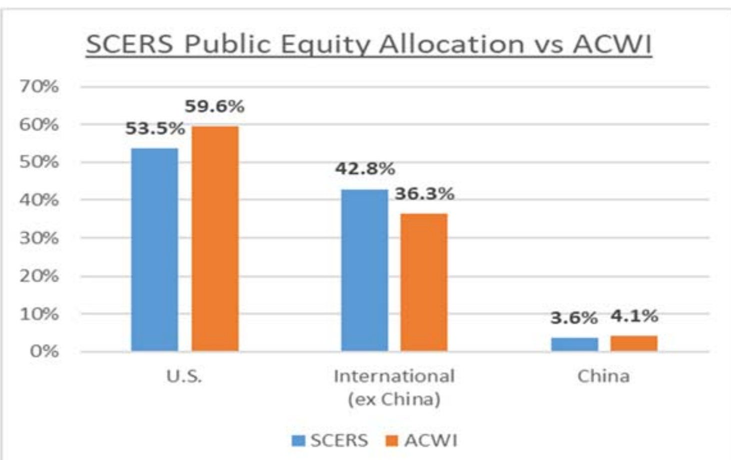
The remainder of this memo provides a summary of SCERS' exposure to China within each major asset class, and a macro overview of the opportunity set for China within certain asset classes.

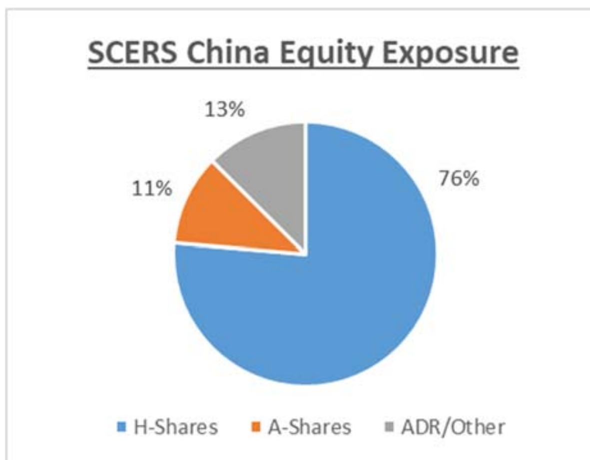
PUBLIC EQUITY

As a global investor, SCERS has exposure to China's public equity markets. SCERS' current exposure to China public equity is predominately through commingled funds with SCERS' emerging markets managers, although there is some direct exposure through SCERS' international small cap portfolio. SCERS' managers hold a mix of investments in China equity markets. The following charts detail SCERS' public equity exposure, as of July 2021, and contrasts the exposure versus the MSCI ACWI index, which represents the universe of stocks across both developed and emerging global markets.







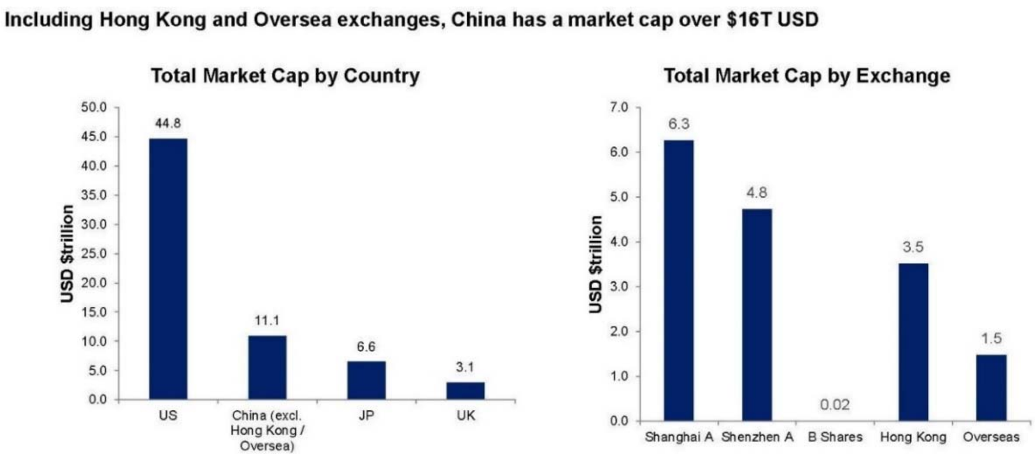


China – Public Equity Investment Opportunity:

China presents an interesting investment opportunity in public equity markets, with unique risk and reward characteristics, and opportunities for active management strategies that could potentially generate excess returns above public equity benchmarks. The J.P. Morgan presentation will provide further details on these subjects.

China Representation in Public Equity Markets:

Chinese onshore and offshore public equity markets represent the second largest equity markets, behind only the U.S. based on market capitalization. Including local onshore (China A and B share) markets and offshore (Hong Kong H-Share and overseas) markets, China public equity markets have a market cap of approximately $16 trillion. This compares to the U.S. market cap of approximately $45 trillion, Japan at $7 trillion, and the U.K. at $3 trillion. The tables below provide details of the different onshore and offshore markets for China public equity, as well as market capitalization by exchange, as of the second quarter 2021.



Source: AQR, Understanding and Investing in Chinese Equity Markets, Second Quarter 2021

Despite the increasing size of China's equity markets, the country is still under-represented in public equity market indices, both as a percentage of its contribution to economic activity and based on the market capitalization of its equity markets. China is the second largest economy in the world, and the largest contributor to global economic growth over the past decade, with China estimated to have contributed over one quarter of all global economic growth[1]. Even with a lower estimated growth rate going forward, China is still estimated to contribute approximately one-fifth of the total increase in the world's gross domestic product in the five years through 2026[2]. However, despite China's contribution to global economic activity, the country's equity markets still only represent a small percentage of global equity markets, especially compared to the U.S. China's weight in the global MSCI ACWI index is less than 5%, while the U.S. is almost 60% of the index.

One reason for the under-representation in global equity indices is that China has relatively young equity and capital markets, with markets only being opened and available to global investors over the past few decades. While economic reforms began in the 1970's to move China to a more market-oriented economy, the establishment and development of capital markets took quite some time. China's capital markets began to emerge in the early 1990's with the establishment of the Shenzhen and Shanghai stock exchanges in December 1990, and the

China Securities Regulatory Commission (CSRC) being formed in October 1992, which began to establish a centralized regulatory framework for capital markets. China then began to open

[1] https://www.reuters.com/article/us-economy-global-kemp-column/china-has-replaced-u-s-as-locomotive-of-global-economy-kemp-idUSKBN1XF211
[2] https://www.bloomberg.com/news/articles/2021-04-06/china-s-growth-set-to-drive-world-economy-in-post-pandemic-years

up capital markets to foreign ownership, allowing foreign ownership of renminbi-denominated shares (B-Shares) and then allowing listing of domestic companies in Hong Kong (H-Shares). Since then, China has continually taken steps to open their capital markets to foreign investment and joined the World Trade Organization in 2011. As the regulatory environment and corporate governance in China has improved, the country has earned greater inclusion in global equity market indices. For example, MSCI included China in its MSCI Emerging Markets index in 1996 and added China A-Shares to the MSCI EM Index in 2018. However, despite these additions, the China A-Shares only has a 20% inclusion rate in the equity markets. If China A-Shares were included at a 100% rate, the country's weighting in equity market indices would increase significantly, potentially up to 50% of the MSCI EM Index and up to 8% of the MSCI ACWI Index.

China Public Equity Markets – Attractive Alpha Opportunity:

China public equity markets offer an attractive investment opportunity for active management, particularly the China A-Shares market. As noted previously, the Chinese equity markets are relatively new, with development occurring over the past few decades. This has led to markets that are relatively inefficient versus other more developed markets. For example, trading activity in the China A-Shares market is dominated by retail investors, which represent approximately 80% of trading volume. This compares to less than 20% of trading volume by retail investors in the U.S. equity markets. Additionally, the China A-Share market has significantly lower levels of analyst coverage, with a significant number of listed stocks having none or limited sell-side analyst coverage. The combination of factors present an attractive opportunity for active managers to generate excess returns versus broad market benchmarks.

Despite the relatively short history for Chinese equity markets, they have grown significantly in size, with liquidity and depth that rivals the U.S. markets. For example, the average daily turnover (as measured in USD) is approximately $80 billion for the China A-shares market, compared to just over $100 billion for the U.S. The third largest global equity market, Japan, has daily turnover of approximately $20 billion. Additionally, the number of listed companies in China A has doubled since 2010, compared to the U.S., which has increased by 22% over the same time. In total, the number of listed companies in the U.S. is approximately 6,000 versus 4,000 for the China A-shares market.

Attractive Valuations:

Both the broader emerging markets and China have historically traded at valuations below those of the U.S. There are a number of factors that contribute to the lower valuation levels including:

- Sector and industry differences
- Volatility and risk
- Political and Governance concerns
- Currency

The combination of these factors has led to a higher risk premium, and lower valuations, for China and other emerging markets compared to the U.S. However, while valuation differences may be expected to persist, despite higher growth rates (compared to the U.S.) and improving corporate governance and transparency, the valuation for China equity markets is attractive based on historical levels and relative to the U.S. The MSCI China index typically trades at a 22% valuation discount to the U.S. (based on price-to-earnings ratio). The current valuation discount, as of July 2021, is approximately 34%, with the MSCI China index at 13.5x forward P/E multiple versus the S&P 500 at approximately 21x.

Diversification Benefits and Historical Returns:

China equity markets have delivered attractive returns, especially compared to broader emerging markets, and even compared to broad international market indices (ex-U.S.). Additionally, the Chinese equity markets, particularly the China A-share market, have had historically low correlation to other global equity markets. China A-share markets (CSI 300 Index) have correlation less than 0.5 with U.S. equity markets (S&P 500) and other developed international equity markets (MSCI ACWI and MSCI EAFE).

The China A-share market has historically restricted access and ownership to foreign investors, leading to equity market performance that was dictated more by local drivers than global forces, leading to low correlation with other global equity markets. With the market opening up to foreign ownership, and increased weight in market indices, it could reasonably be expected that the correlation will increase over time. However, this process could take some time, as the market still has relatively low foreign ownership and high retail participation. Therefore, the diversification benefits offered from low correlation offers investors an opportunity for potentially higher annualized returns with lower overall portfolio volatility. The historical performance, volatility, and Sharpe ratio of the MSCI China indices compared to other equity markets is shown below.

Performance	1-Year	3-Year	5-Year	10-Year
MSCI China A	11.8%	20.5%	10.8%	7.7%
MSCI China	-5.1%	7.3%	10.8%	7.3%
MSCI Emerging Markets	21.1%	9.9%	10.4%	4.9%
MSCI ACWI ex US	24.9%	9.4%	9.9%	6.6%

Annualized Std Dev	3-Year	5-Year	10-Year
MSCI China A	21.0%	19.2%	24.0%
MSCI China	21.4%	19.2%	20.9%
MSCI Emerging Markets	19.2%	16.5%	17.6%
MSCI ACWI ex US	17.6%	14.5%	14.8%

Sharpe Ratio	3-Year	5-Year	10-Year
MSCI China A	0.93	0.56	0.40
MSCI China	0.38	0.57	0.41
MSCI Emerging Markets	0.52	0.61	0.32
MSCI ACWI ex US	0.53	0.64	0.45

Source: MSCI, as of August 31, 2021

China Market Risks:

China equity markets have been subject to rather extreme bouts of volatility. Even during calendar years that posted strong overall returns, the equity markets often experienced intra-year declines of 20-30%. As noted in the performance table above, despite the higher volatility, equity markets in China have delivered long-term returns that have exceeded broader emerging and developed international markets, with equivalent Sharpe ratios. However, investing in China equities requires an expectation for higher levels of volatility.

Regulatory and geopolitical risks are prevalent, whether implemented by either U.S. or China's government authorities, and can have a meaningful impact on the investment landscape. Some recent examples include:

- Holding Foreign Companies Accountable Act (passed by U.S. in December 2020), which requires enhanced disclosure by foreign companies and requires compliance with PCAOB audits.
- Executive Order issued by Trump administration in November 2020, which restricts investment in Chinese companies closely linked to China's military and surveillance agencies.
- China's crackdown on Technology companies, particularly those listed in the U.S. via ADRs and VIE structures, over concerns around data privacy and cybersecurity.

Other regulatory and geopolitical concerns include issues surrounding foreign currency, trade wars or sanctions, human rights concerns, and military conflicts. While these concerns are significant, in many instances, they are not unique to China but apply to other emerging and international countries. A key consideration in investing in China equity markets is determining if the reward, including performance and portfolio diversification benefits, helps to compensate for the additional risk exposure. In addition, active management with a presence in local markets, can better understand and navigate the risks, to hopefully avoid major industry and company specific issues.

FIXED INCOME

Within SCERS' Fixed Income portfolio, SCERS has minimal exposure to China. One of SCERS' core plus managers has one bond position (Tencent corporate bond) which equates to 0.13% of that portfolio. The other core plus manager also has one bond positon (Sinopec Group corporate bond) which equates to 0.11% of that portfolio. SCERS' global fixed income mandate has approximately 3% exposure to Chinese bonds within that strategy; however, the global fixed allocation was eliminated as part of the revised strategic asset allocation that was recently approved by the Board. SCERS' other strategies (treasury and public credit) do not have any exposure to China. Going forward, while the core plus and public credit mandates have some flexibility to invest in global bonds, China is not expected to make up any meaningful component of SCERS' Fixed Income portfolio going forward.

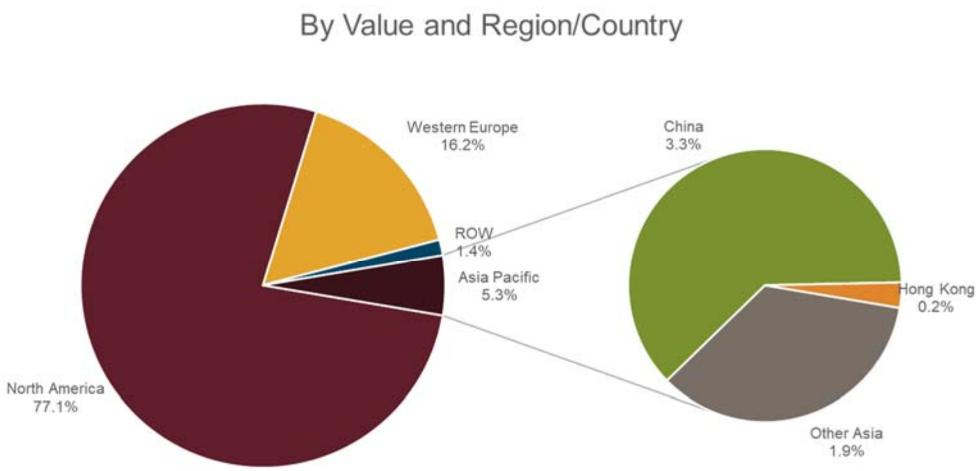
ABSOLUTE RETURN

SCERS has a small amount of exposure to China within the Absolute Return portfolio. The combined exposure across Growth and Diversifying strategies, on a gross and net basis, is approximately 4.4% and 1.8%, respectively, of the total Absolute Return allocation. As a reminder, the Gross exposure represents both long and short exposure, while the net exposure is the difference between the long minus short exposure. Approximately 40% of the gross exposure and 60% of the net exposure is within Growth oriented absolute return strategies. This segment was eliminated as part of the revised strategic asset allocation recently approved by the Board, which will reduce some of the Absolute Return exposure to China.

PRIVATE EQUITY

Asia-focused private equity funds, including regional, country-specific, and sector-focused, as well as across buyouts and venture capital, have fared well over the last decade. Funds targeting Asia and, more specifically, China have generally worked out well for investors on an absolute basis. However, despite some well-publicized success at the deal level, most funds have performed in line with U.S. and European funds. When making private market investments, including private equity, Staff considers many risk factors such as regional risks, country-specific risk, currency fluctuations, illiquid premium, and potential exit options. Therefore, investing in Asia or China should have higher return expectations to account for the additional risks.

To date and as shown below, SCERS has limited expose to Asia or China. The total exposure is approximately 3.3% of the total Private Equity portfolio, and it is through some U.S venture capital funds, which have a small allocation to China. In addition, a local legacy group in the SCERS portfolio had some “China” aspects, but the investment has by and large been liquidated. Returns for the region have been reasonable but still lower than those generated in the U.S. The top performing funds in China generally have a queue of potential limited partners seeking access to their funds, and therefore typically don’t market to new LPs. Until private equity in Asia and specifically China demonstrate a track record of delivering a premium to U.S. returns, Staff believes continuing to focus on the U.S. and Europe is the best approach to implementing SCERS’ Private Equity portfolio. Without the local, on-the-ground views from dedicated resources, including that of SCERS’ consultants, Staff does not foresee any meaningful allocation to private equity in China.



PRIVATE CREDIT

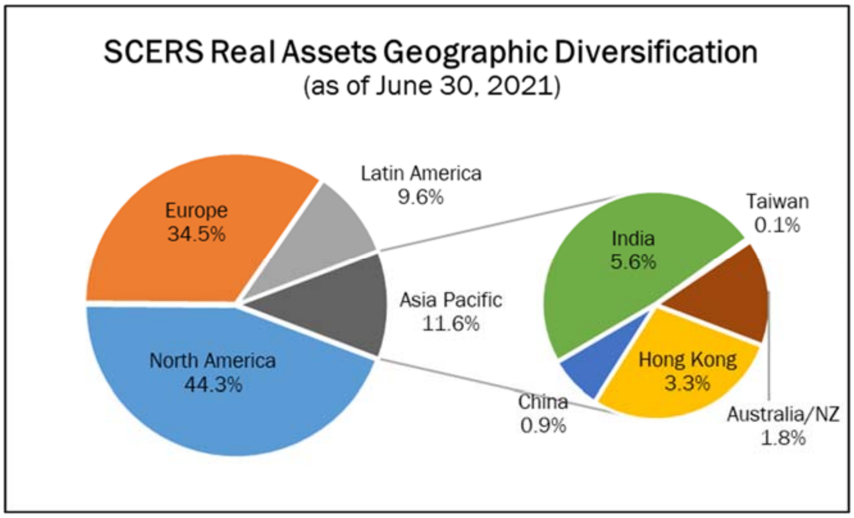
The traditional lending source for small to middle-market private companies, the banking sector, began to scale back lending in the aftermath of the Global Financial Crisis (GFC). As the banking sector began to retrench, private equity firms entered the market to fill the void. It was during this transitional period post-GFC that private credit/direct lending began to take off as an institutional asset class, primarily in the U.S. Although Europe suffered the same impacts from the GFC, banks continued to be the main source of lending. However, over the last 5-7 years, Europe has also seen a retrenchment the banking sector resulting in the growth in private credit lending. The developing Asian countries, such as China, have not seen the same banking retrenchment despite the central government's strict regulatory oversight. Private credit lending as we know it in the U.S. has not taken hold in China and may not for some time. SCERS does not have any private credit exposure in China.

REAL ASSETS

Although SCERS does not specifically target China for its Real Assets portfolio, Asia Pacific is a target region. The Asia Pacific region includes the high growth developing countries of China/Hong Kong, Taiwan, Southeast Asia, and India. Many infrastructure managers include Australia and New Zealand in their Asia Pacific investments despite these countries being more developed.

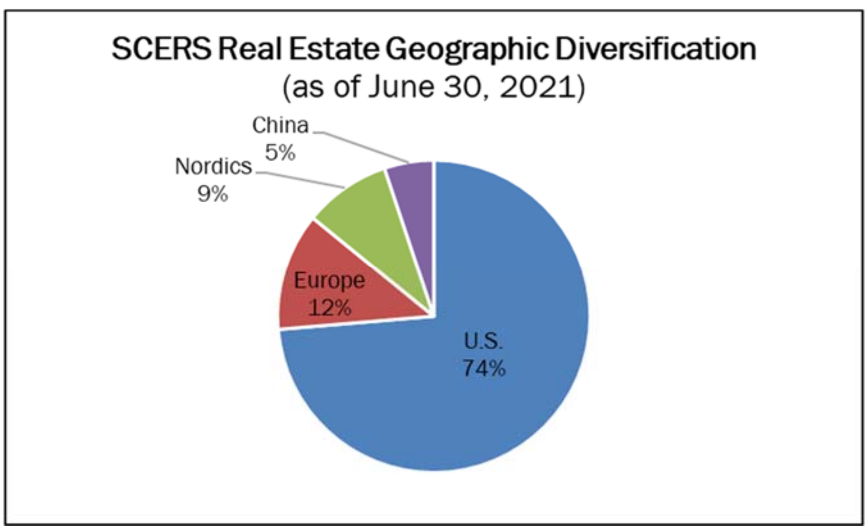
The Real Assets asset class is comprised of investments in infrastructure, energy, agriculture, timber, and other natural resources, through a combination of equity and debt investments. The investment objective of the Real Assets portfolio is to generate moderate income with lower volatility and diversification to SCERS' overall portfolio, and also serve as a hedge against inflation. In constructing the Real Assets portfolio, Staff and Cliffwater continue to refine portfolio construction around a 'Core and Satellite' structure, where traditional core infrastructure investments remain the Core (beta) foundation from which emanate the Satellite (alpha) opportunities, whether defined by attribute, niche strategy, growth markets (Asia Pacific and Latin America), or otherwise non-core in execution.

The following chart details SCERS' real assets geographic exposure, as of June 30, 2021. SCERS' exposure to China is minimal at 0.9% of the total Real Assets portfolio, and is held within a couple of global infrastructure funds. Unlike the public equity markets where there is a representative index, the MSCI ACWI index, real assets and specifically the infrastructure index, Cambridge Associates Private Infrastructure index, only includes the developed markets of North America, Europe, and Australia.



REAL ESTATE

The following chart details SCERS' Real Estate geographic exposure, as of June 30, 2021. China makes up 5% of SCERS' Real Estate asset class. Unlike the public equity markets where there is a representative index, real estate does not have a representative index that includes China.



Unlike Real Assets, SCERS has specifically targeted China for the Real Estate portfolio. Staff began to target China in 2014 from a macro and thematic view, when it identified the global emergence of e-commerce and the future need for modern logistics.

In order to achieve a consumer-led economy, China's government identified early on the need to urbanize its cities and to invest in transportation infrastructure to connect its population. The government's efforts are beginning to pay off as China's key economic growth engine over the past few years has come from its urban centers and is the main source of China's domestic consumption trends. China's urban growth trends can be seen by 22 of its cities with populations over 5 million people compared with just one city in the U.S and four in Europe.

The rise of China's middle class is highly correlated with the rising urbanization of its cities. As the middle-class incomes have grown, there has been a profound transition from basic needs to high-quality products and global brands as disposable incomes have increased. This is in line with China's efforts to transition to a high-value economy that relies more on the services sector as a key component of a domestic driven consumption-based economy.

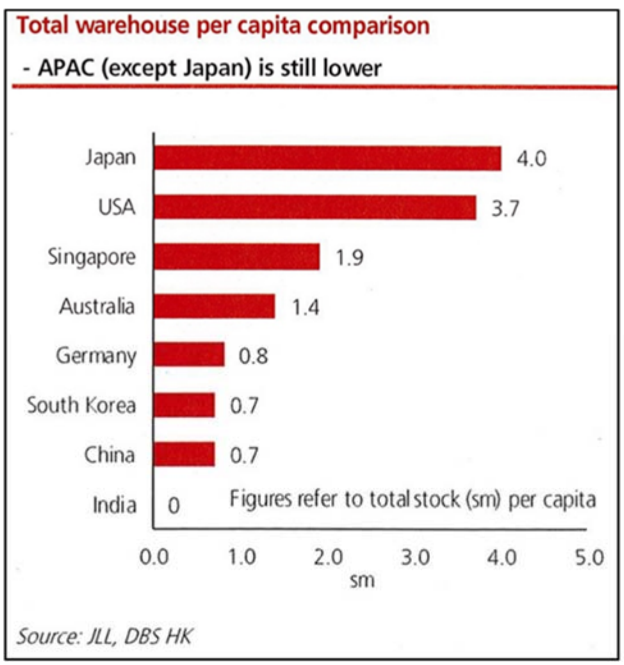
According to Morgan Stanley Research (MSR), China's annual per capita income could more than double by 2030, supported by China's government emphasizing greater urbanization and ultimately transitioning its economy to a more consumer-led economy.

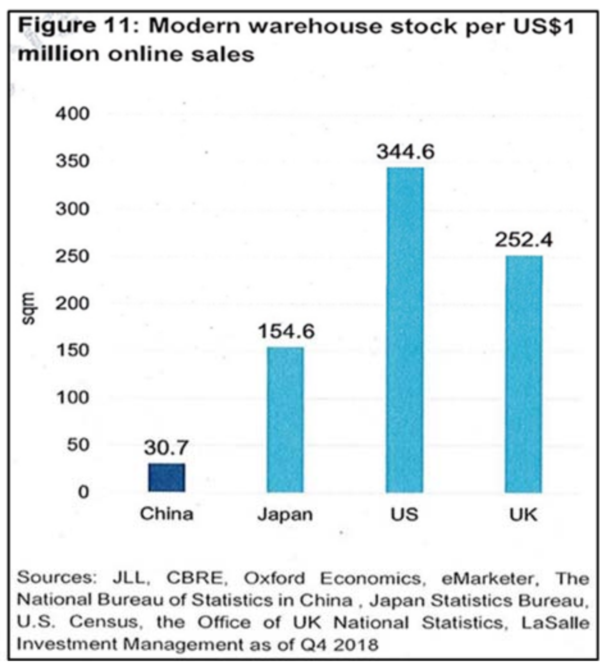
The rapid growth in domestic consumption in China has coincided with the wider access to products and better services resulting from the growth in internet penetration and proliferation of ecommerce platforms. The growth in ecommerce access can be seen in the total ecommerce sales in China for 2019, where it exceeded total U.S online sales by almost 3 times, and further illustrated by China's online sales, which represents 15.9% of total retail sales compared to only 7.5% in the U.S. This is despite China's lower internet penetration rate of 54.7% compared to the U.S. penetration rate of 90.0%, per Oxford Economics.

According to a December 2020 eMarketer Research report, China is projected to reach a milestone among global economies by being the first country where the majority (52.1% up from 44.8% in 2019) of total retail sales (consumer and business) will be from online commerce. To put this into perspective, the next-highest rate of ecommerce as a share of total retail sales is South Korea, which is projected to reach 28.9% per eMarketer. In comparison, the U.S. is expected to reach 15.0%, with Europe only expected to achieve 12.8%.

McKinsey's Digital China report in 2018 observed that China's ecommerce transactions accounted for less than 1% of total global online transactions a decade ago but now represents over 40% of total worldwide ecommerce sales. China's ecommerce transactions are now larger than the entire online transactions of the U.S., UK, France, Germany, and Japan combined. Amazingly, over 68% of China's ecommerce transactions were conducted through mobile phones.

The scale with which ecommerce platforms in China are struggling to meet consumer demand is the sheer volume of packages delivered, particularly between peak and non-peak demand periods. Despite the overwhelming demand and volume of online transactions, the supply of modern logistics facilities in China is woefully lacking, as illustrated in the charts below:





With China's emphasis on domestic consumption, demand for modern logistics space is expected to accelerate. In addition, the pandemic heightened demand for cold storage and refrigerated logistics facilities. Given the strong demand fundamentals and restricted land supply in the major urban cities, it is expected the logistics market will deliver attractive returns and garner increasing investor attention for quite some time. In its 2020 research report on China Market 2021 Outlook, CBRE projects that from 2021-2023, the demand for modern logistics facilities in China's major cities will increase 40% more than the prior 2018-2020 period, with cold storage exhibiting even stronger growth. Contributing to their assessment is the government's current and future infrastructure projects to link more rural areas to urban population centers.

China continues to experience strong economic and logistics fundamentals, with the national government implementing numerous policies and initiatives to drive economic growth from internal consumption and becoming less reliant on exports. Even with severe lockdowns due to COVID-19, China's economy grew by 2.3% in 2020, the only major economy to do so, and was up 18.3% year-over-year in the first quarter of 2021.

In its April 2021 View of the World, Townsend reported a significant mismatch in logistics supply-and-demand created by ecommerce that continues to create one of the most compelling real estate investment opportunities globally today. Logistic assets remain well positioned to benefit from a continued shift to online retailing, with expectations in the near-term of demand continuing to outpace new supply.

SCERS has made two separate commitments to funds that target the development and acquisition of logistics facilities in China over the past several years. Staff and Townsend believe there is a relative value difference between the U.S. and China logistic real estate returns, with China logistics development returns exceeding the U.S. by 200 basis points. Given China's growth in domestic consumption, rising urbanization, and lack of modern logistics assets available to meet demand, Staff and Townsend continue to favor investing in China logistics.

NEXT STEPS

As part of the recently approved changes to the Strategic Asset Allocation, Staff and Verus will be recommending adjustments in coming months to the renamed Global Equity asset class. This is expected to include flexibility within the asset class structure to include country specific allocations, such as to China. While SCERS' exposure to China within the private markets is minimal, Staff and consultants continue to explore investable opportunities, particularly within the real estate sector, where SCERS has existing exposure to the industrial/logistics property type within China. Recommendations on any potential investments will be presented to the Board at a future date under the existing protocols.

ATTACHMENTS

- Board Order
- J.P. Morgan Presentation – Guide to China
- Staff Presentation – SCERS Exposure in China

Prepared by:	Reviewed by:
/S/	/S/
Steve Davis Chief Investment Officer	Eric Stern Chief Executive Officer

/S/

Jim Donohue
Deputy Chief Investment Officer

/S/

JR Pearce
Senior Investment Officer

/S/

Brian Miller
Senior Investment Officer

Retirement Board Order

Sacramento County Employees' Retirement System

Before the Board of Retirement
October 20, 2021

MOTION:

Education: Investment Opportunities in China

THE BOARD OF RETIREMENT hereby accepts the recommendation of staff to receive and file the materials related to Education on Investment Opportunities in China.

I HEREBY CERTIFY that the above order was passed and adopted on October 20, 2021 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES (Present but not voting):

____
Richard B. Fowler II
Board President

____
Eric Stern
Chief Executive Officer and
Board Secretary

Sacramento County Employees' Retirement Systems

October 20th, 2021

Gabriela Santos, Executive Director
Global Market Strategist

Lara Clarke, Managing Director
Client Advisor

J.P.Morgan
Asset Management

MARKET INSIGHTS

Guide to China

3Q 2021 | As of July 31, 2021

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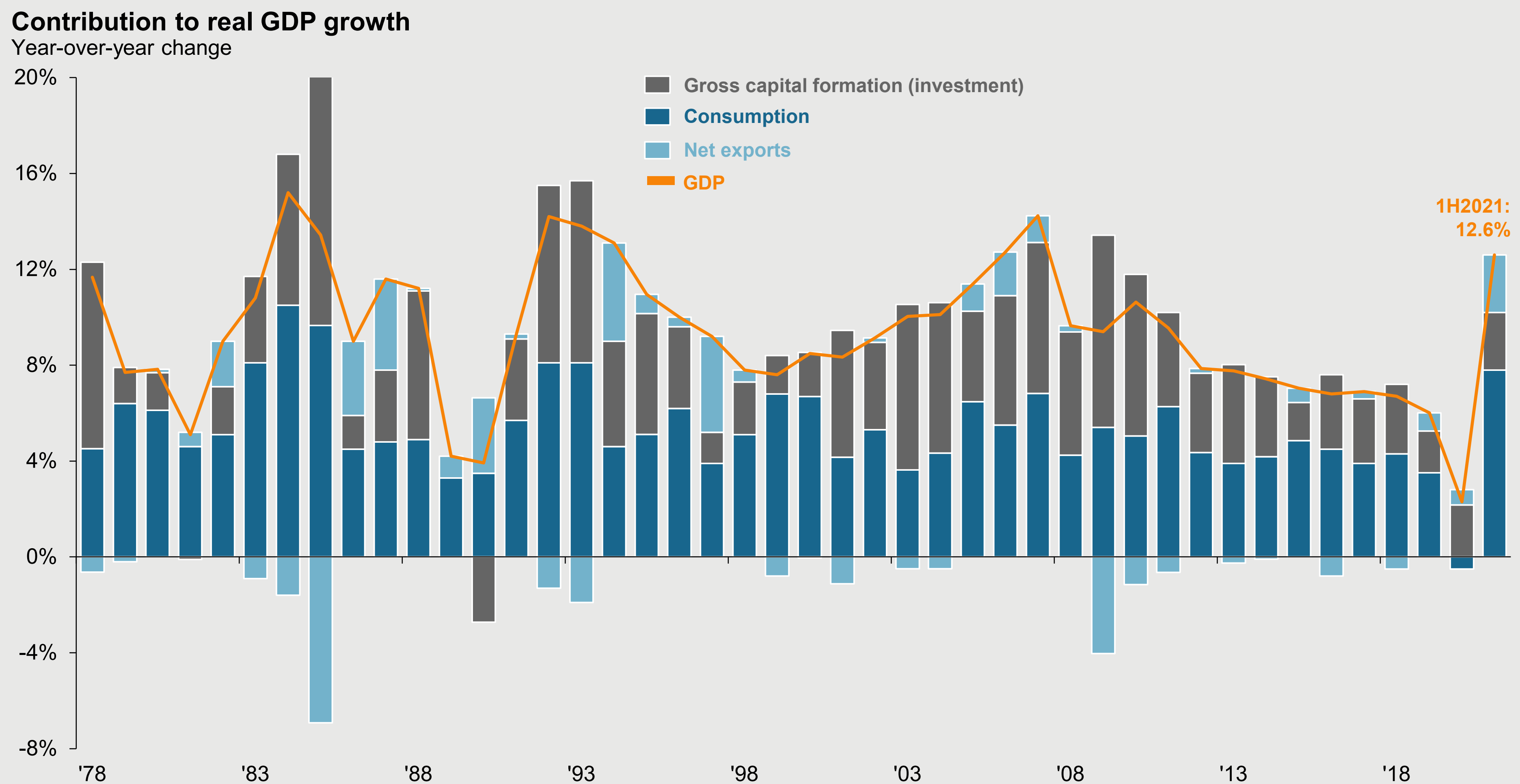
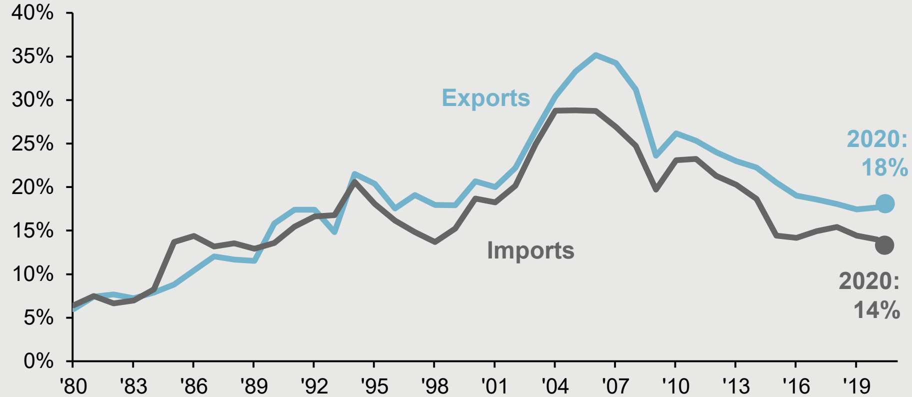
Contribution to GDP growth



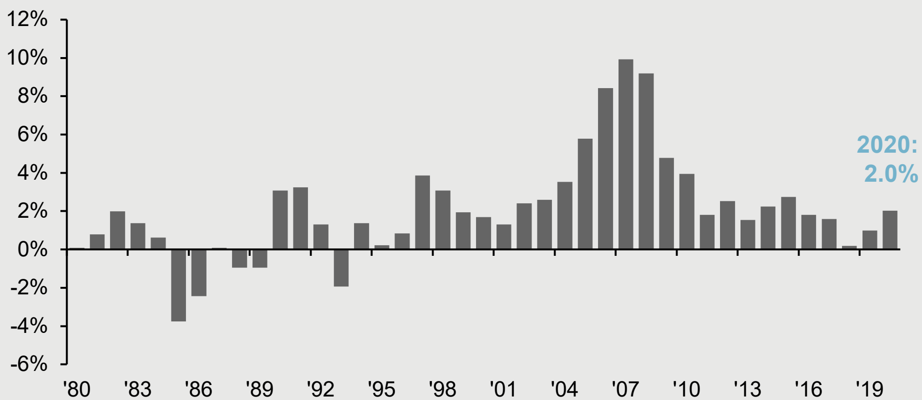
Source: CEIC, National Bureau of Statistics, J.P. Morgan Asset Management.
Guide to China. Data are as of July 31, 2021.

Importance of trade to China

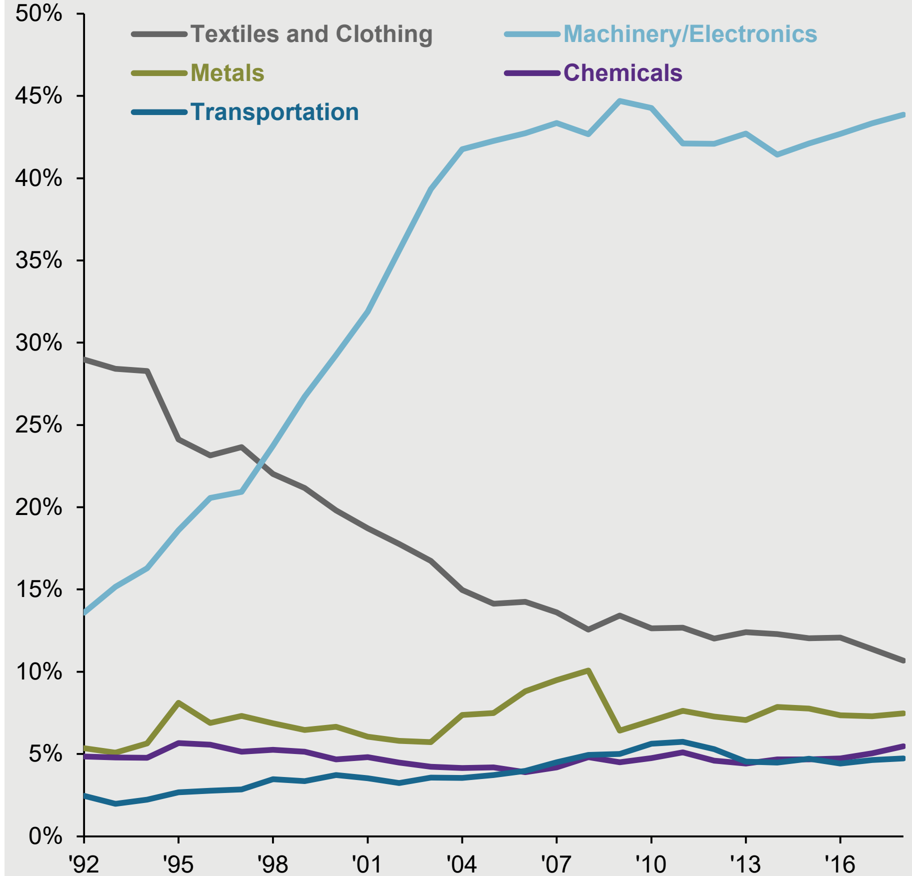
Total exports and imports
% of GDP



Current account balance
% of GDP



China's exports by product
Share of total exports



Source: (Left) IMF; (Right) World Bank; J.P. Morgan Asset Management.
Guide to China. Data are as of July 31, 2021.

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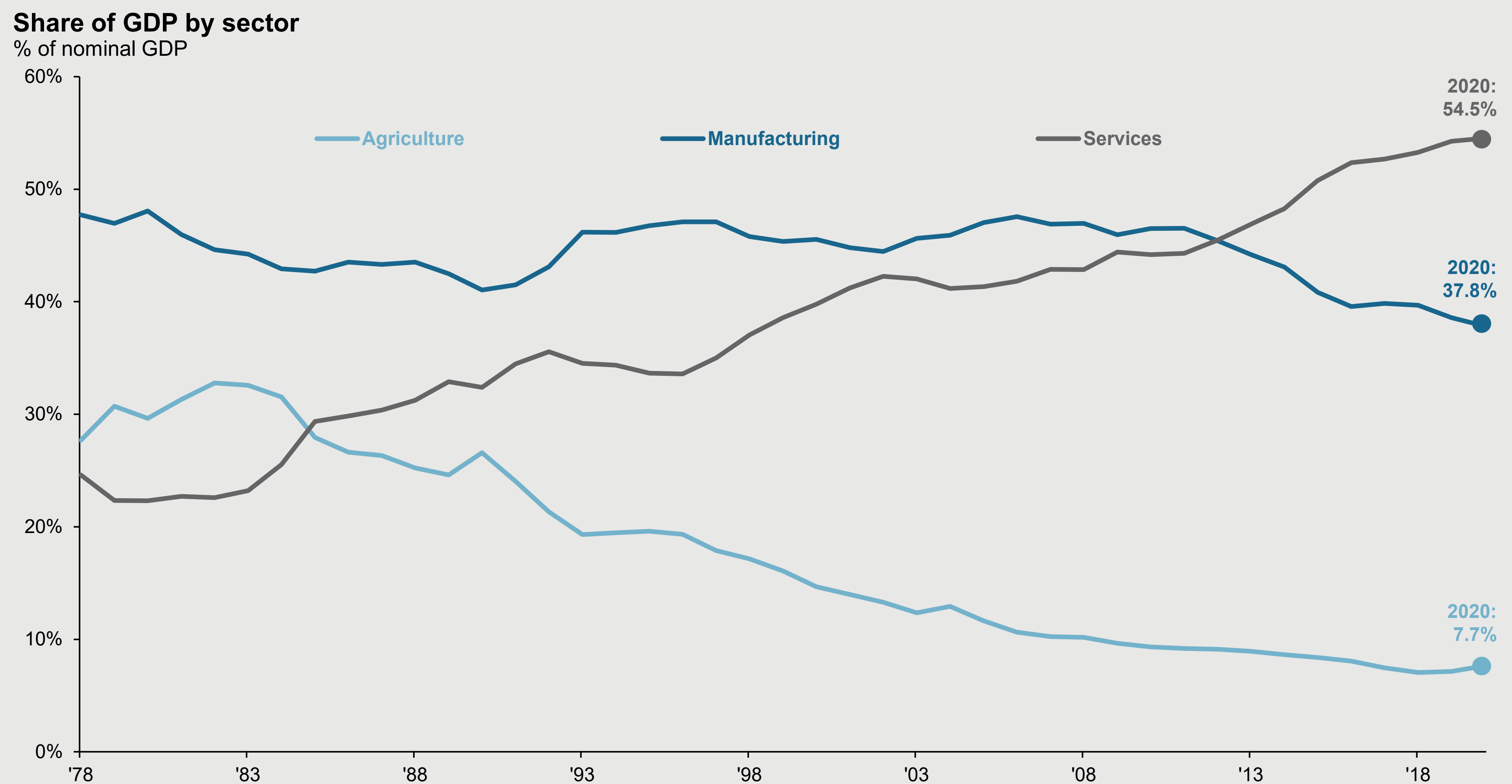
Change in growth structure



Source: CEIC, National Bureau of Statistics, J.P. Morgan Asset Management.
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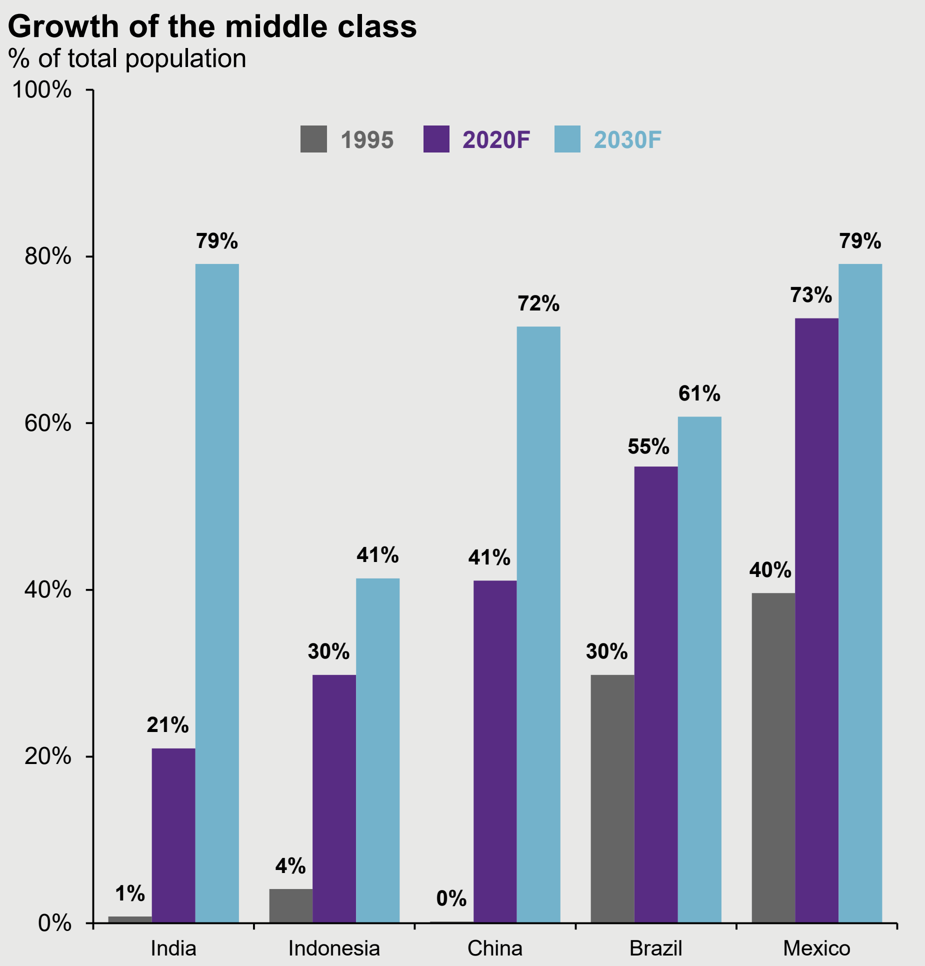
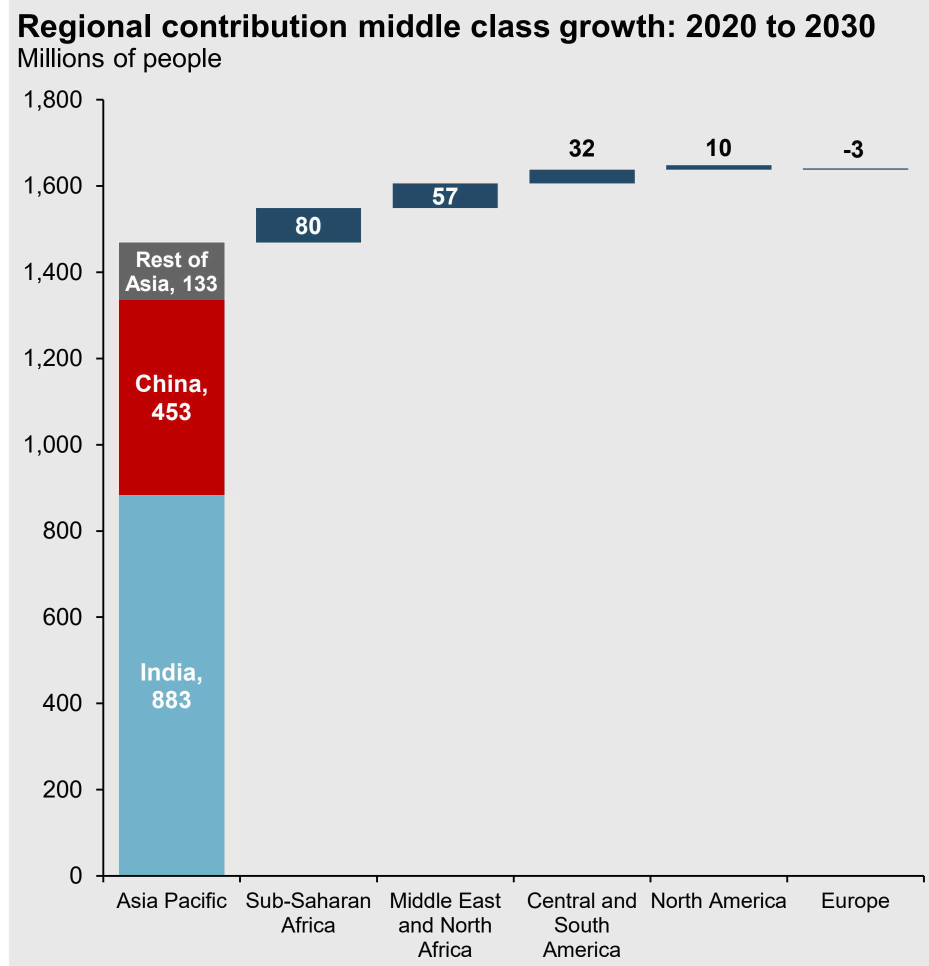
The emergence of the middle class





Source: Brookings Institute, 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 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 forecast, projections or other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.
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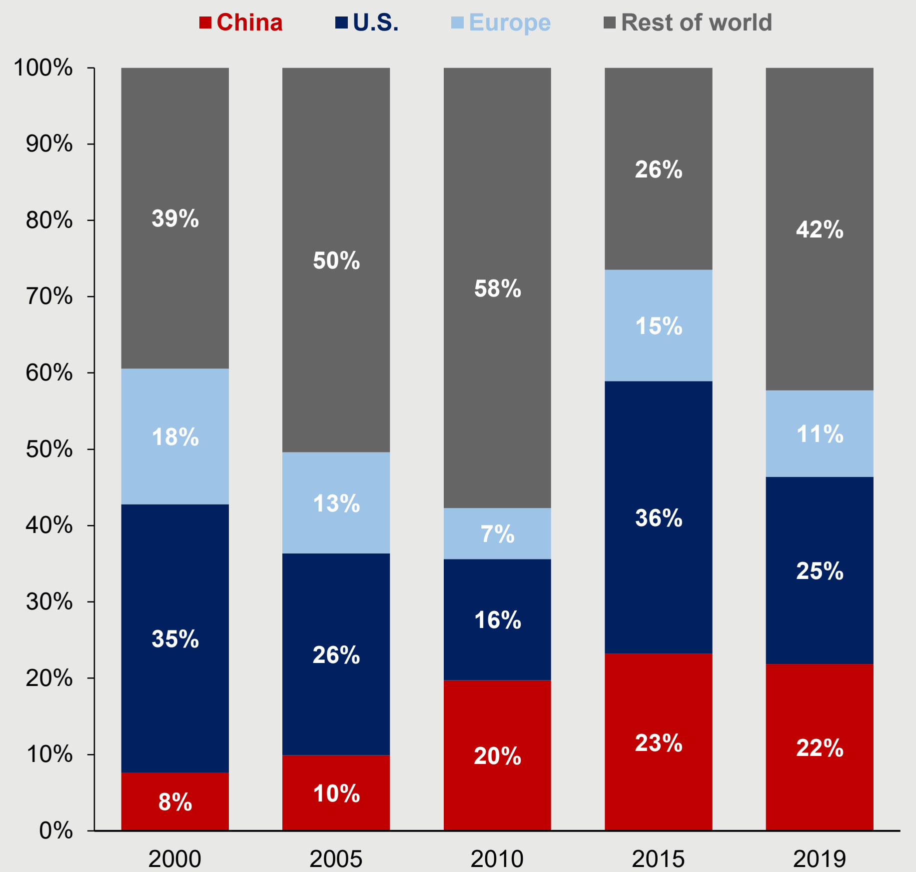
Chinese consumer

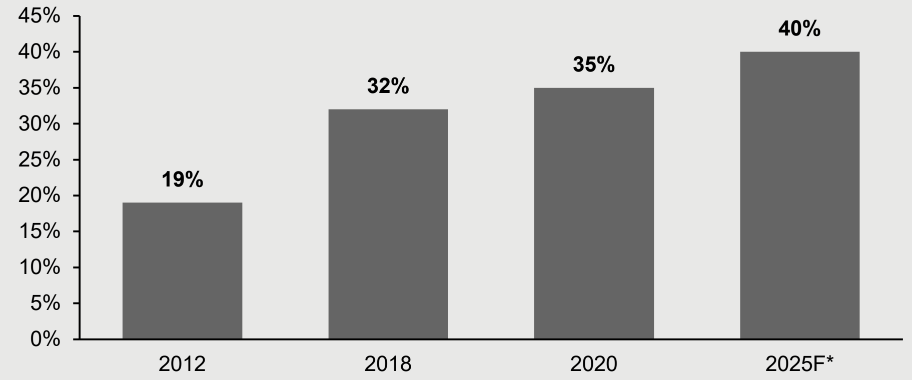
Contribution to global consumption growth

Household consumption, constant U.S. dollars



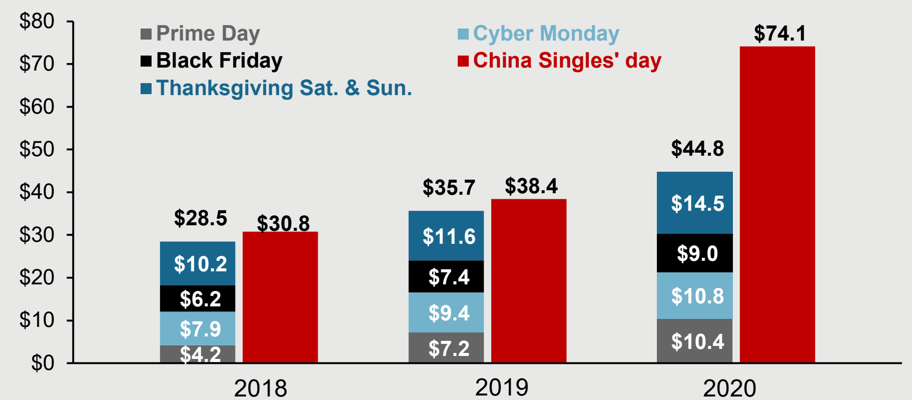
China's contribution to global spending on luxury goods

Chinese consumers, % of total, both domestic and overseas spending



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

Gross merchandise value, U.S. dollar, billions



Source: (Left) World Bank; (Top right) McKinsey & Company "China Luxury Report 2019"; (Bottom right) Alibaba, Adobe Analytics, Amazon; 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.
*Forecast based on McKinsey & Company "China Luxury Report 2019".
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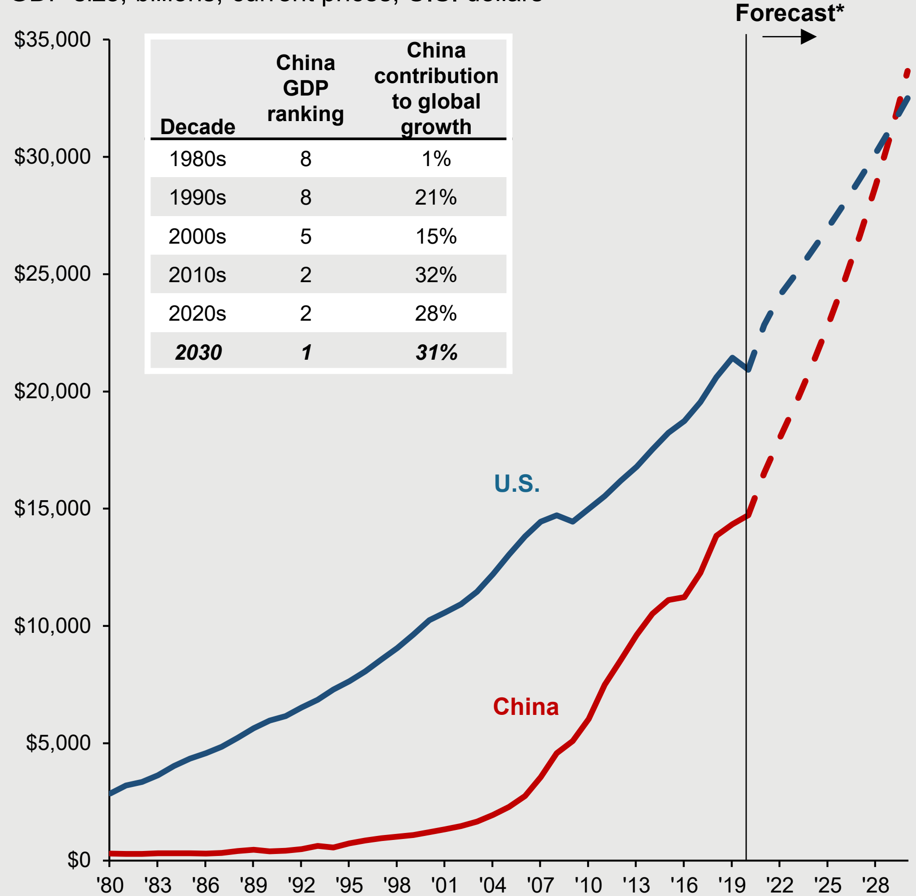
Evolution of China's economy

GDP size of China and U.S.

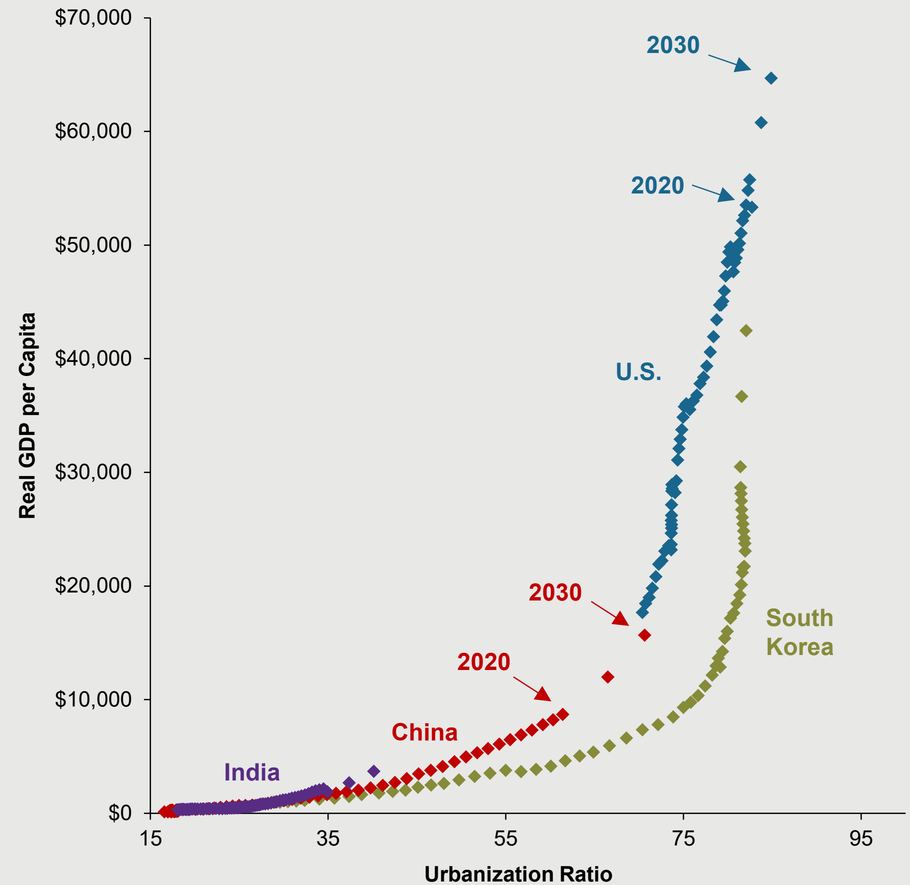
GDP size, billions, current prices, U.S. dollars



Decade	China GDP ranking	China contribution to global growth
1980s	8	1%
1990s	8	21%
2000s	5	15%
2010s	2	32%
2020s	2	28%
2030	***1***	***31%***

Real GDP per capita and urbanization ratios

Constant prices, U.S. dollars, 1960 – 2030**

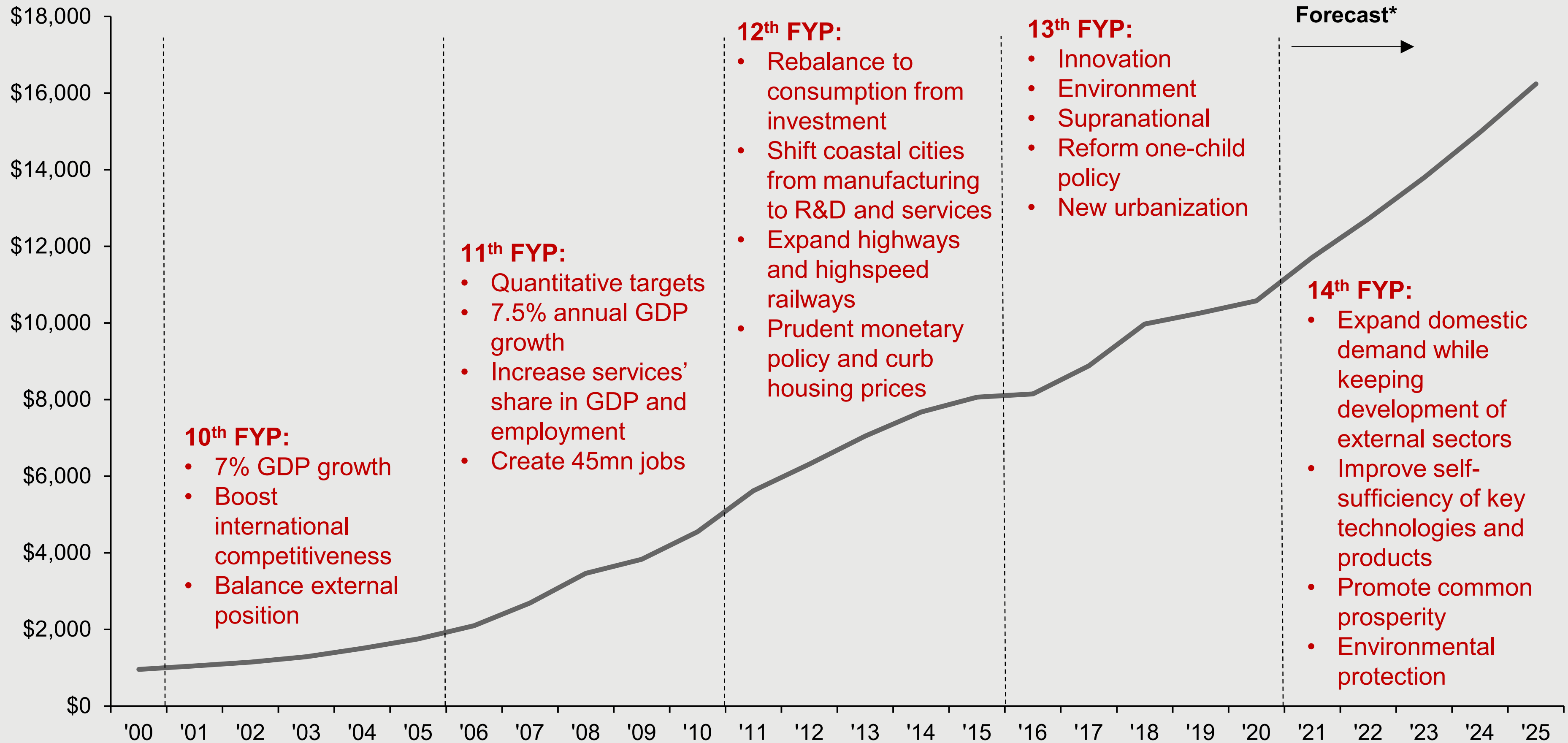


Source: J.P. Morgan Asset Management; (Left) BEA, National Bureau of Statistics of China; (Right) World Bank, United Nations.
*2021-2022 are a J.P. Morgan Asset Management estimate. 2023-2030 forecasts are based on the J.P. Morgan 2021 Long-term Capital Market Assumptions (LTCMA) estimates. Forecasts, 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 2025 and 2030 based on the 2021 LTCMAs, the United Nations population projections and the United Nations World Urbanization Prospects: 2018 Revision.
Guide to China. Data are as of July 31, 2021.

Five-Year Plans

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

Nominal, U.S. dollars



Source: CEIC, IMF-World Economic Outlook, 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.

*Nominal GDP per capita forecast from the IMF.

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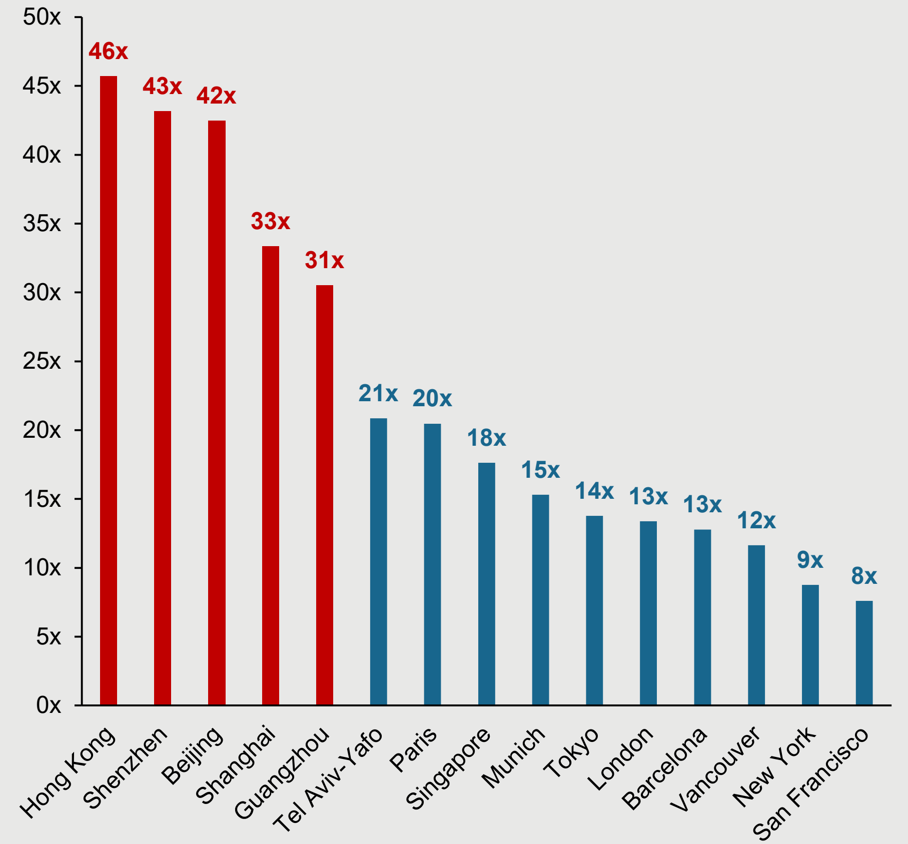
China's housing market

China and U.S. residential real estate investment

USD billions and % of nominal GDP

Price to income ratios for major cities around the globe

Ratio of median apartment prices to median family disposable income, years of income, as of mid-year 2021



Source: J.P. Morgan Asset Management.; (Left) U.S. Bureau of Economic Analysis, National Bureau of Statistics of China, U.S. National Bureau of Economic Research, "Peak China Housing" by Kenneth Rogoff and Yuanchen Yang, August 2020; (Right) Numbeo.
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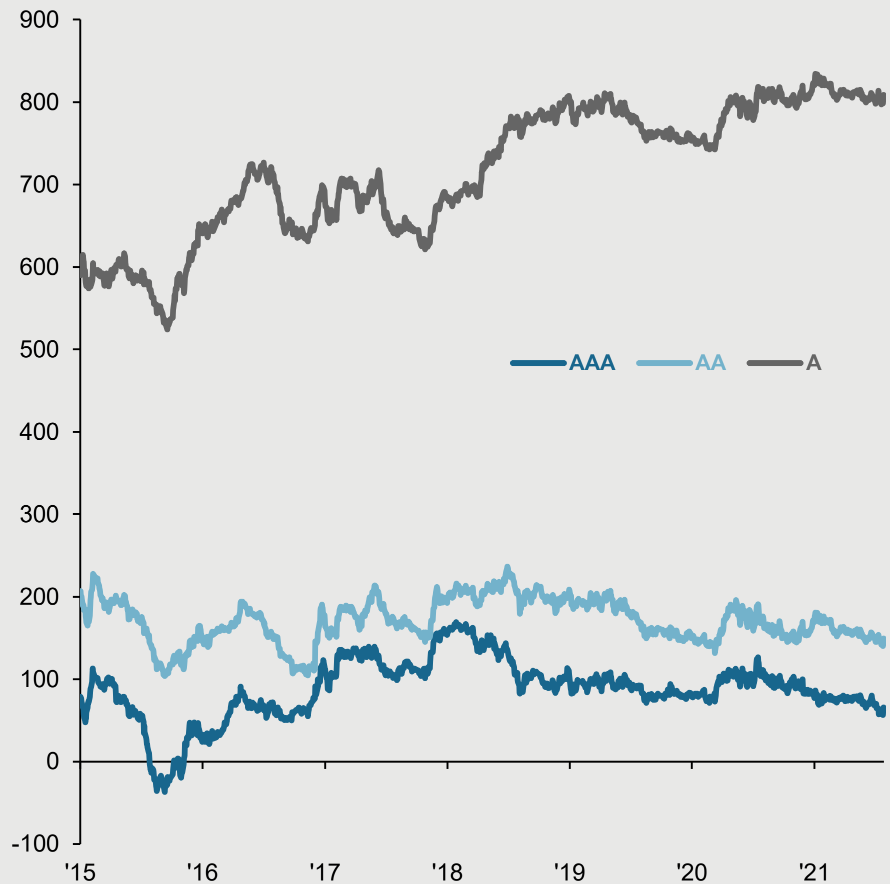
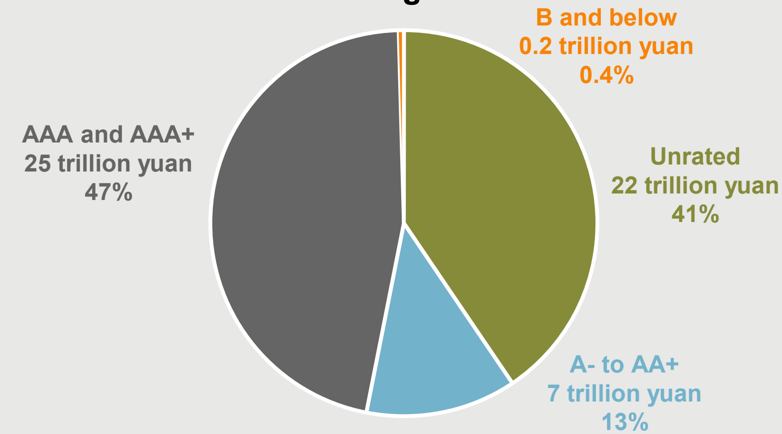
Credit spread of onshore corporate bonds

Basis points

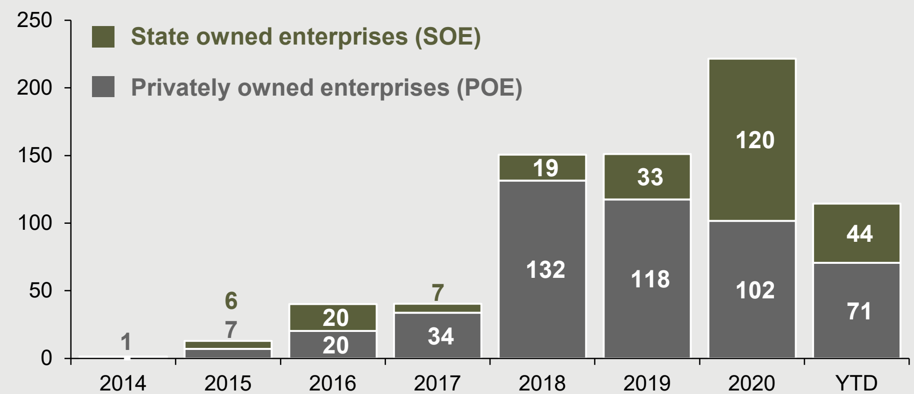


Market structure of outstanding credit*



Number of defaults in onshore market

RMB billion

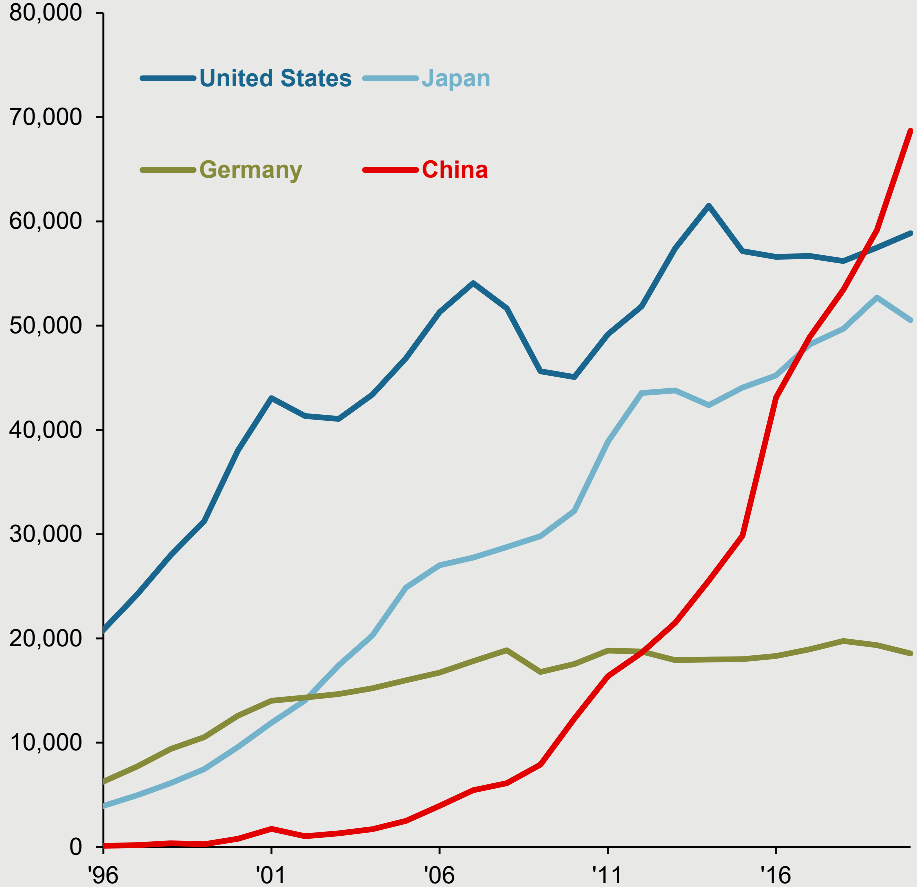


Source: Wind, J.P. Morgan Asset Management; (Right) China Securities Index Co., Ltd.
*Credit rating in Chinese onshore bond market may be inflated, given the absence of international rating agencies.
Guide to China. Data are as of July 31, 2021.

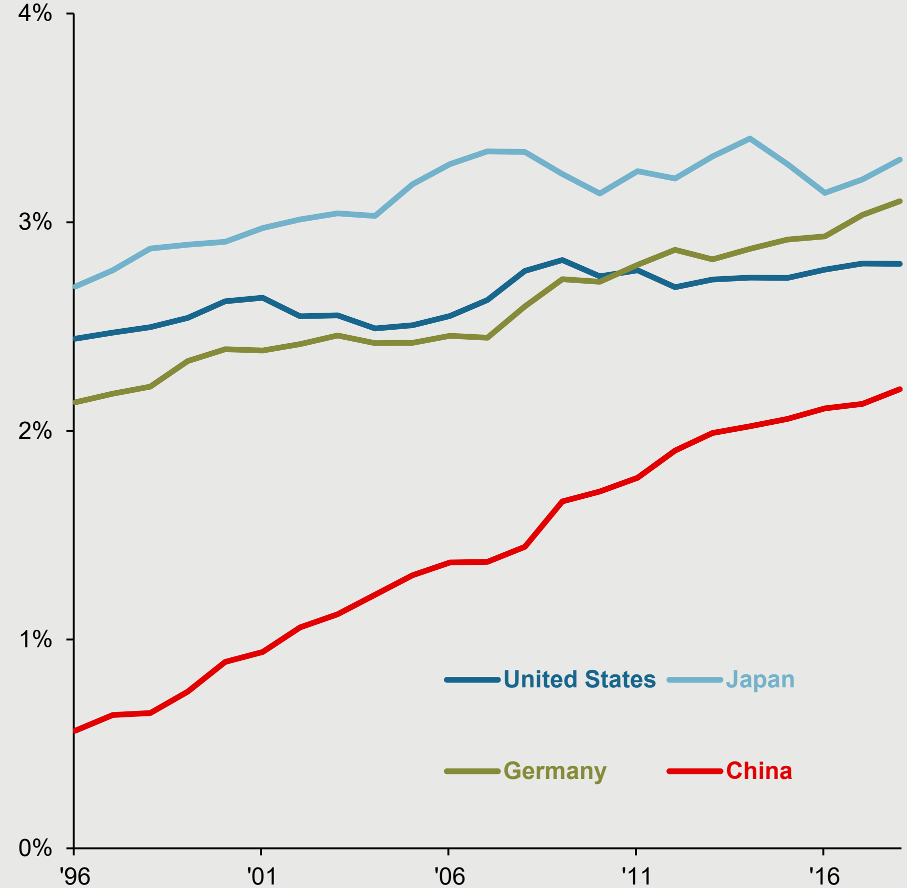
Technological progress

Long-term growth drivers

Patent applications
# of patent filings* at World Intellectual Property Org., 1996-2020



Research and development
Expenditures as % of GDP, 1996-2018



Source: J.P. Morgan Asset Management; (Left) Wind, World Intellectual Property Organization; (Right) World Bank.
*Patent filings include Patent Cooperation Treaty provides international patent protection.
Guide to China. Data are as of July 31, 2021.

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China's technology regulation

Timeline of key events in China's technology regulation

2020

- 16-17 Nov: President Xi: 'good laws can protect healthy development of new economy, new model.'
- 11 Dec: Politburo: 'strengthen antimonopoly, prevent disorderly expansion of capital'
- 16 Dec: Central Economic Work Meeting: antitrust, prevention of capital's disorderly expansion one of 8 major economic tasks in 2021
- 26 Dec: PBoC, CBIRC, CSRC, SAFE* summon **Ant** for the first time

2021

- 7 Feb: Platform antitrust rules officially released and effective
- 15 Mar: President Xi stresses to push ahead regulating platforms, gives detailed principles for subsectors
- 10 Apr: **Alibaba** receives record RMB18.2bn fine on monopolistic practice
- 12 Apr: PBoC, CBIRC, CSRC, SAFE* summon **Ant** for the second time
- 26 Apr: SAMR** investigates **Meituan** for suspected monopolistic practice
- 2 July: CAC*** launches Cybersecurity review of **Didi**
- 10 July: SAMR** announced that it has banned the merger deal between **Huya** and **Douyu**
- 16 July: New rule announced to promote social security and rights of employees for online platforms

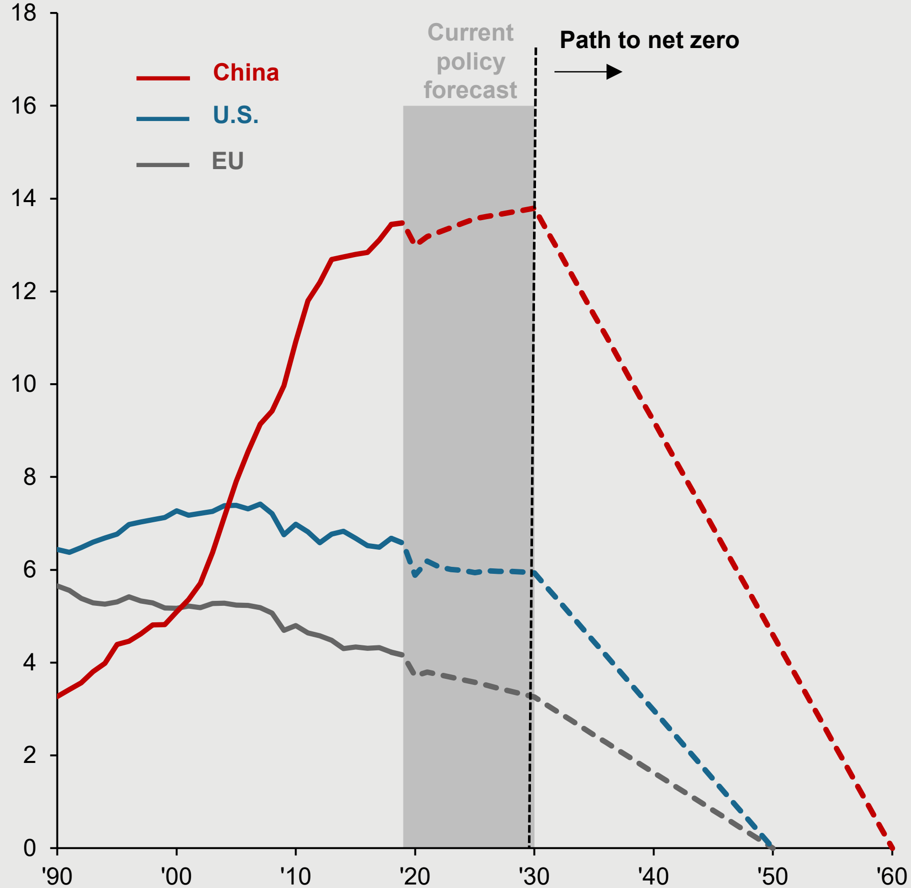
Source: Various news sources, J.P. Morgan Asset Management.
*PBoC: People's Bank of China; CBIRC: China Banking and Insurance Regulatory Commission; CSRC: China Securities Regulatory Commission; SAFE: State Administration of Foreign Exchange. **SAMR: State Administration for Market Regulation oversees all manner of market controls, including regulating anti-competition behavior, intellectual property rights, drug safety supervision and issuance of business licenses etc. ***CAC: Cyberspace Administration of China is the central internet regulator, censor, oversight and control agency for China.
The companies/securities above are shown for illustrative purposes only. Their inclusion should not be interpreted as a recommendation to buy or sell.
Guide to China. Data are as of July 31, 2021.

Emission targets and energy mix

Long-term growth drivers

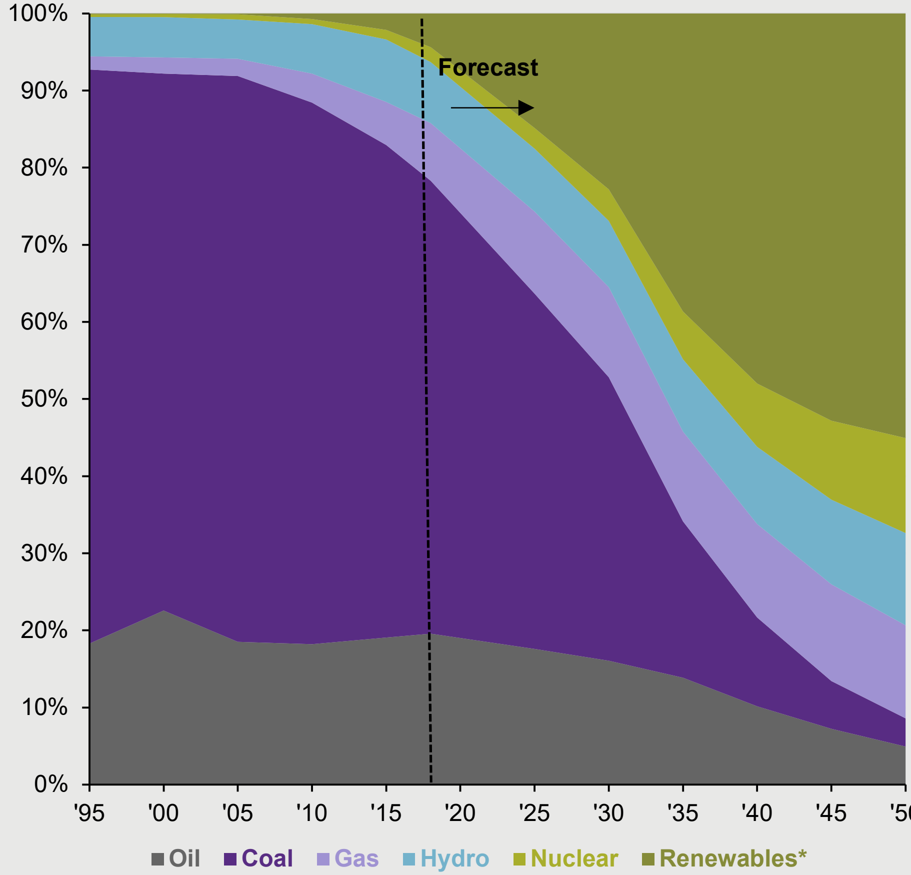
Greenhouse gas emission targets

Billion tonnes/year, CO2 equivalent



China's energy mix

% 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; (Right) BP Energy Outlook 2020. 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.

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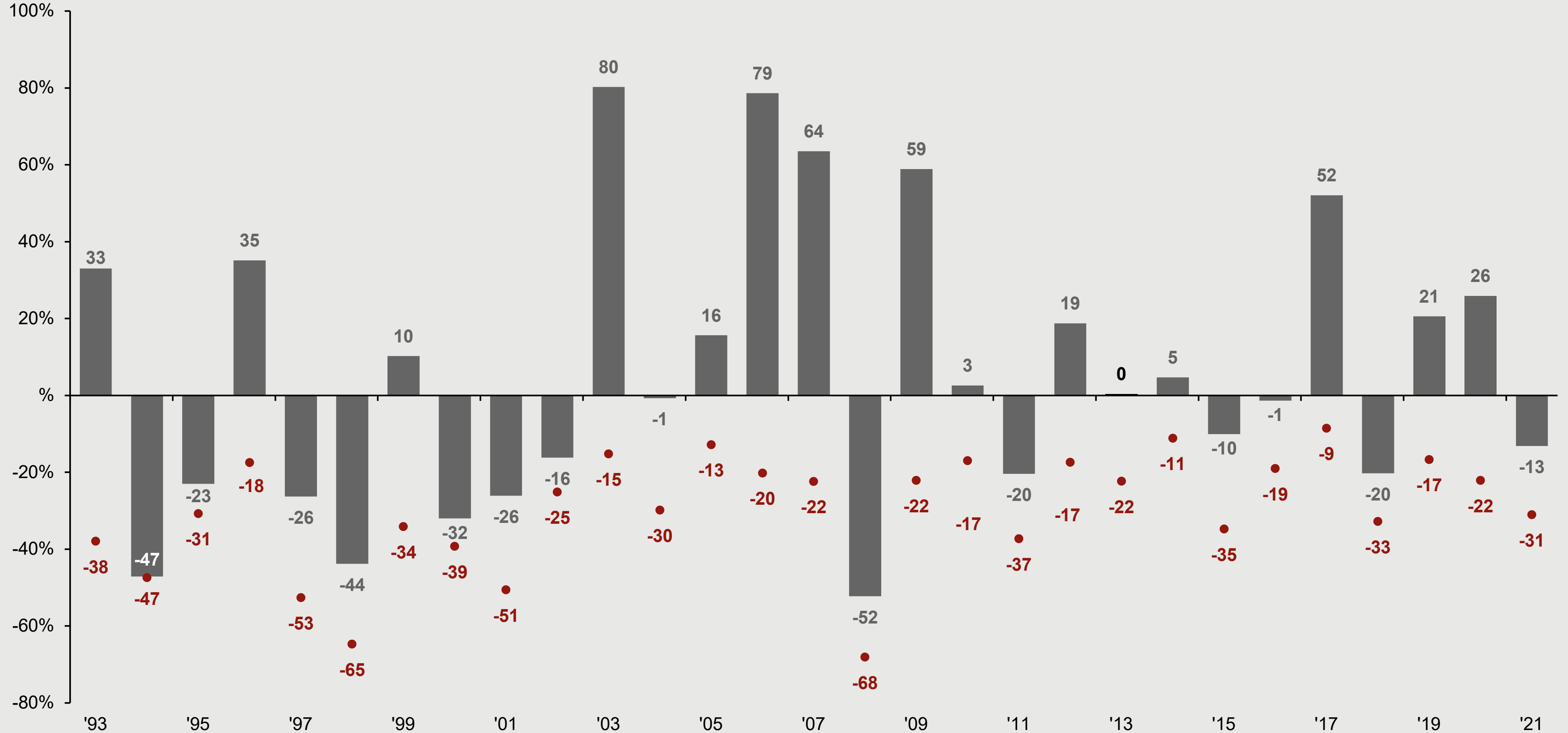
Annual returns and intra-year declines

MSCI China intra-year declines vs. calendar year returns

Local currency, average intra-year drops of 29.7% (median -23.8%) and annual returns positive in 15 of 28 years of on average 6.5%



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. For illustrative purposes only. Returns are calendar year returns from 1993 to 2020 for the MSCI China.
Guide to China. Data are as of July 31, 2021.

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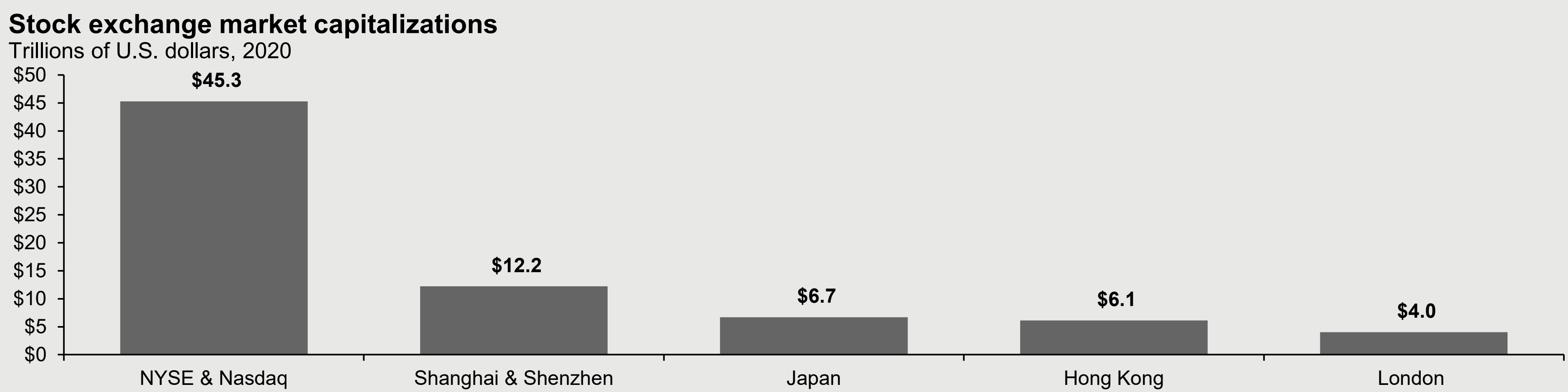
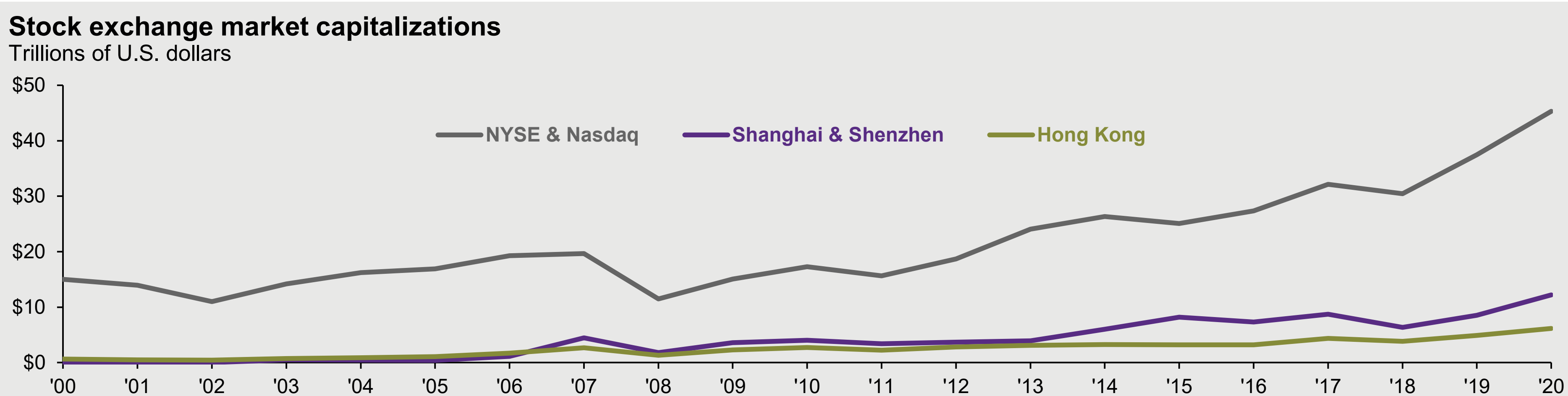
Size of Chinese and global equity markets





Source: World Federation of Exchanges, J.P. Morgan Asset Management.
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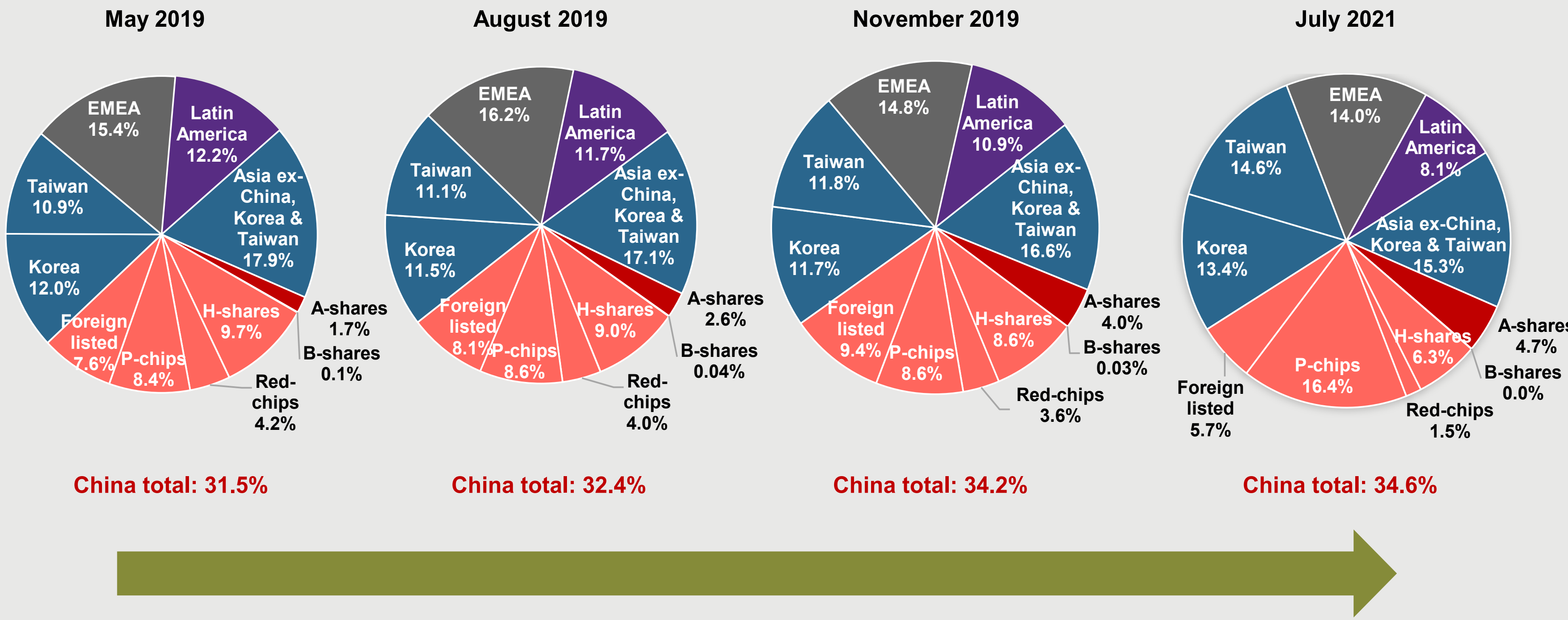
Inclusion of China A-shares in MSCI Emerging Markets

MSCI Emerging Markets Index: Inclusion of China A-shares



Source: FactSet, MSCI, J.P. Morgan Asset Management.
Foreign listed includes American Depositary Receipts (ADRs).
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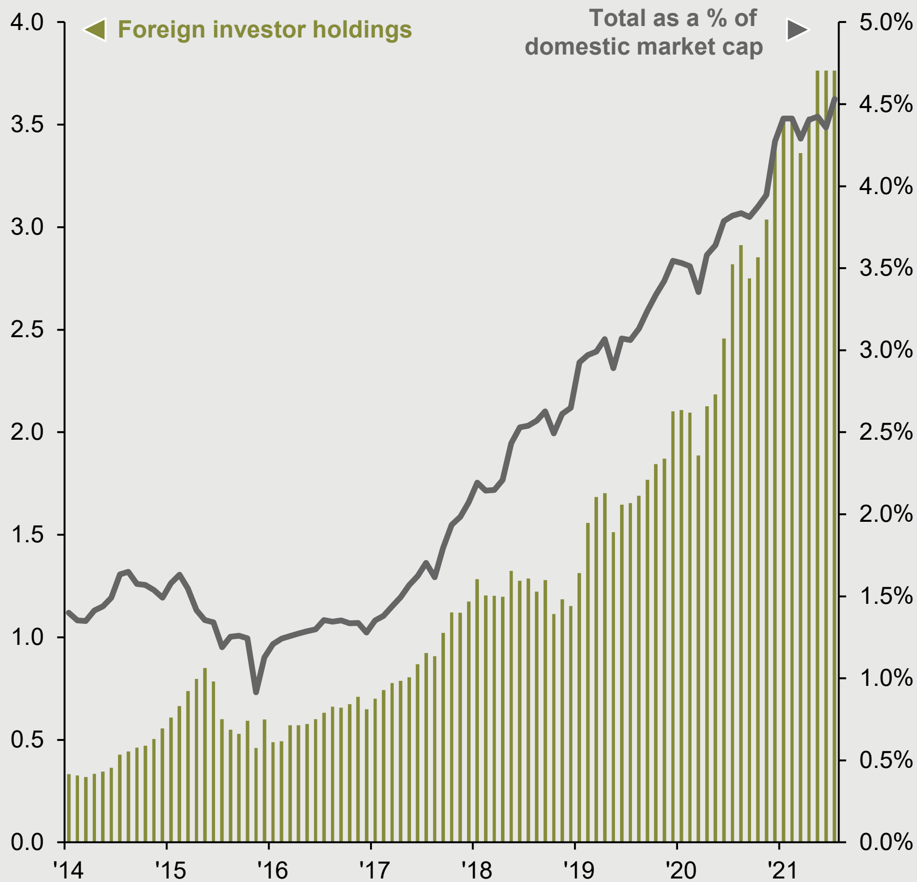
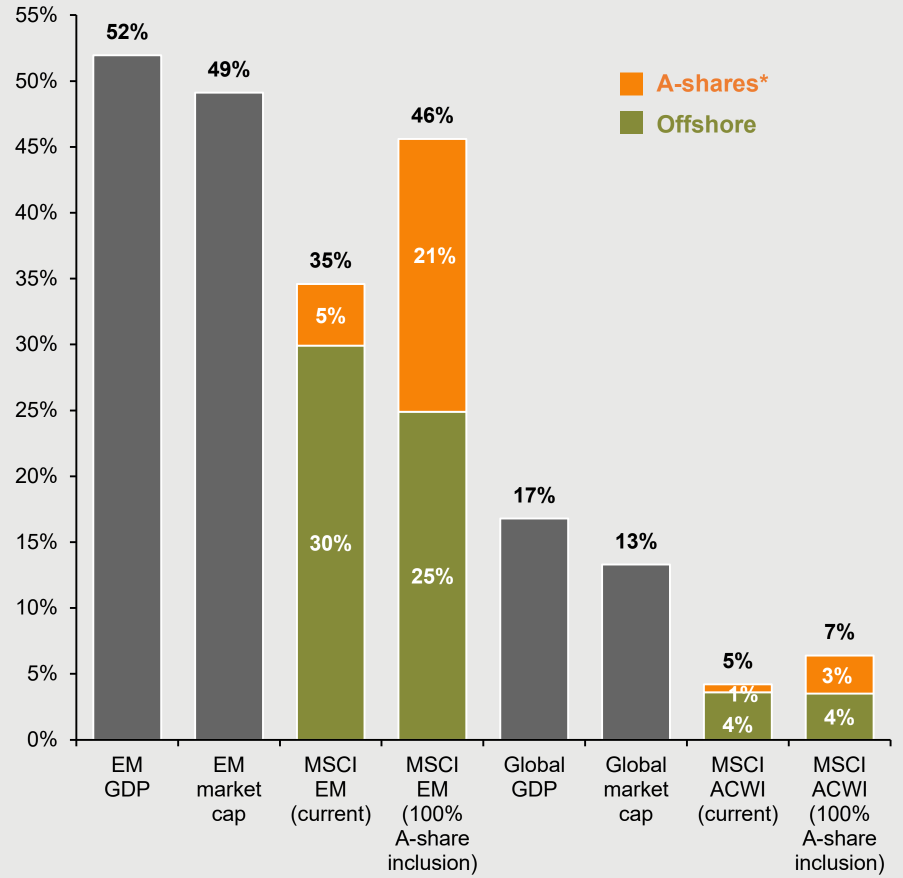
Onshore equities: Market opening

Foreign investors' holdings of onshore Chinese equities
RMB 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, MSCI, World Bank.
Share of EM GDP is for 2020 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.
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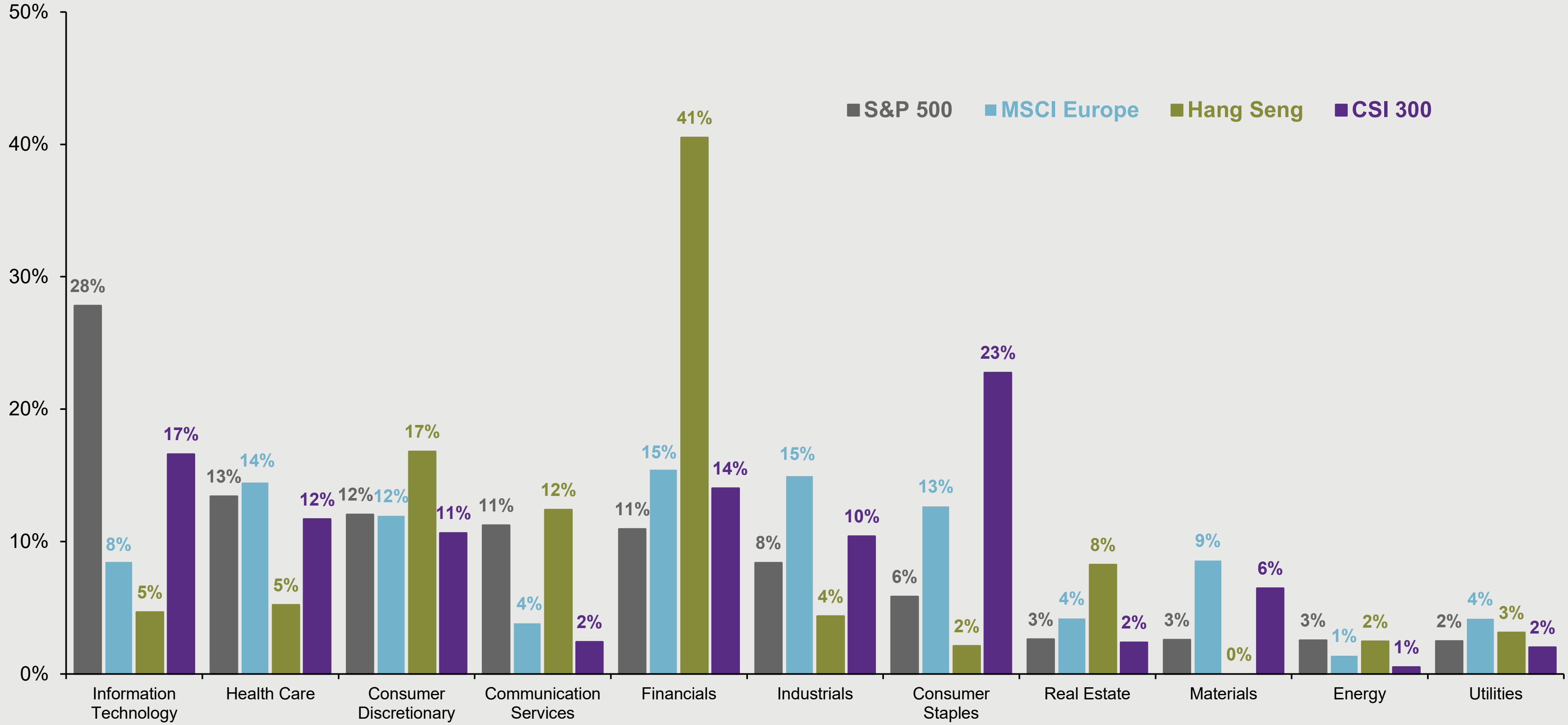
Sector composition of offshore and onshore equities

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 July 31, 2021.

Equities

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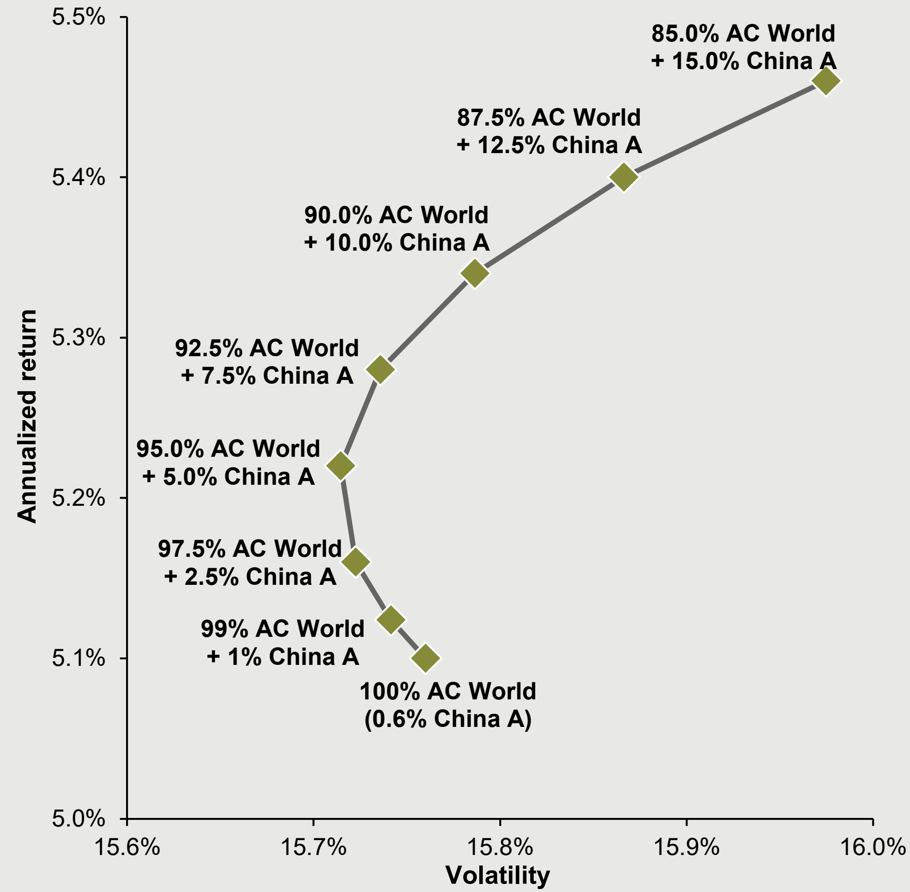
Onshore equities and global portfolios

Correlations 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	0.97	1.00				
MSCI EM	0.77	0.83	1.00			
MSCI EAFE	0.89	0.94	0.87	1.00		
MSCI China	0.59	0.67	0.87	0.69	1.00	
CSI 300	0.40	0.45	0.56	0.42	0.68	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 08/31/06– 07/31/21.
The efficient frontier returns and volatility are based on the J.P. Morgan 2021 Long-term Capital Market Assumptions (LTCMA) estimates.
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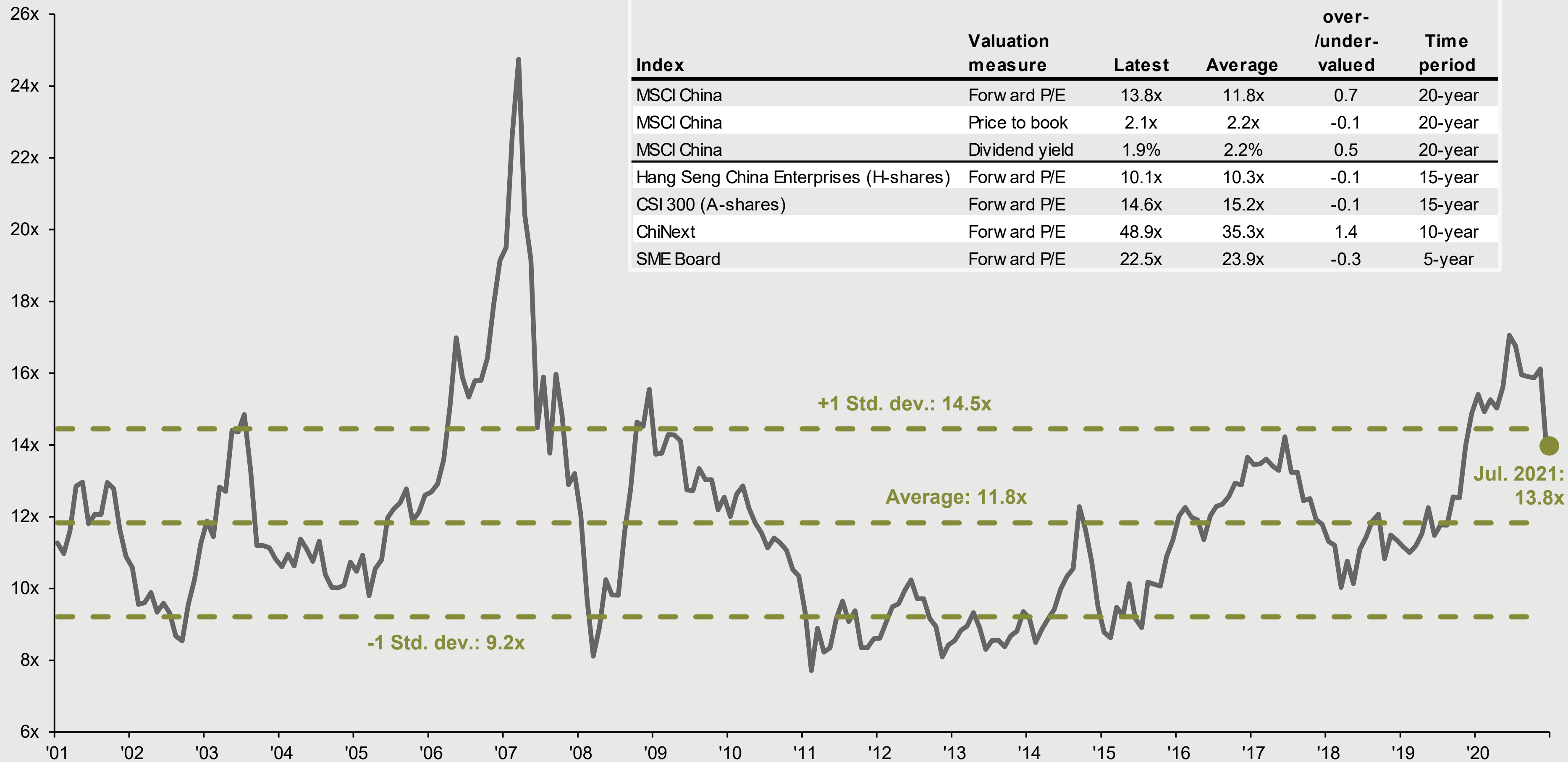
Chinese equities: Valuations

MSCI China: Forward P/E ratio



Index	Valuation measure	Latest	Average	Std. dev. over- /under- valued	Time period
MSCI China	Forward P/E	13.8x	11.8x	0.7	20-year
MSCI China	Price to book	2.1x	2.2x	-0.1	20-year
MSCI China	Dividend yield	1.9%	2.2%	0.5	20-year
Hang Seng China Enterprises (H-shares)	Forward P/E	10.1x	10.3x	-0.1	15-year
CSI 300 (A-shares)	Forward P/E	14.6x	15.2x	-0.1	15-year
ChiNext	Forward P/E	48.9x	35.3x	1.4	10-year
SME Board	Forward P/E	22.5x	23.9x	-0.3	5-year

Source: Bloomberg, 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 book value.
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Equities

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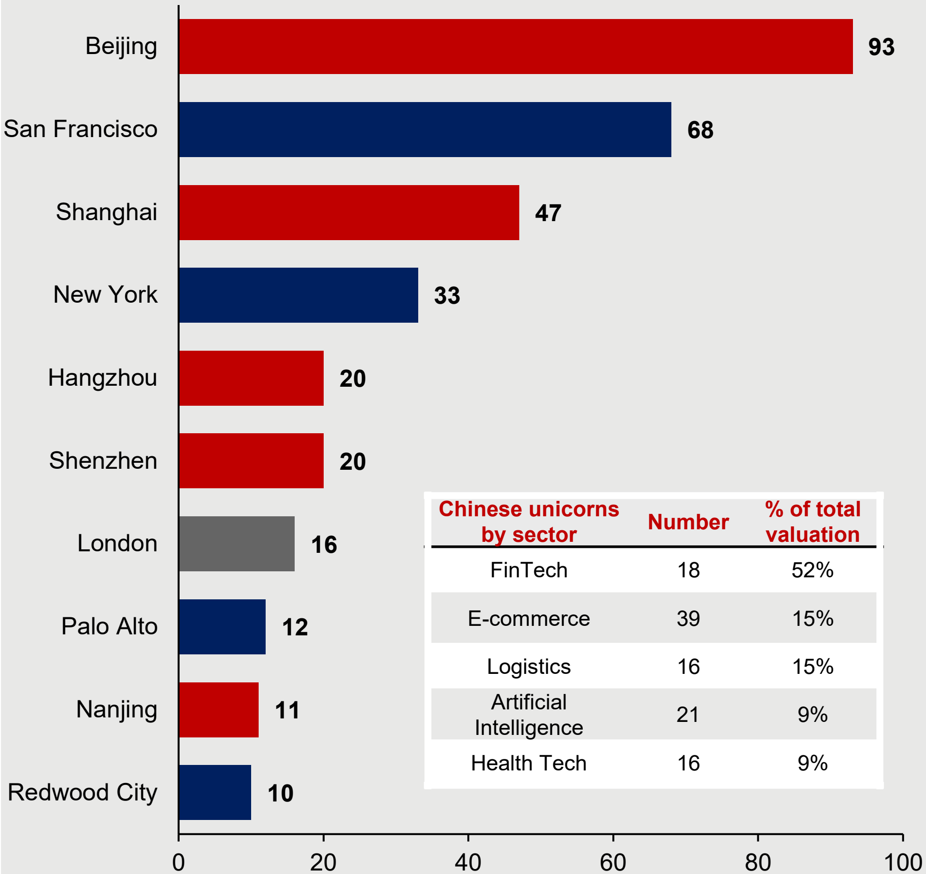
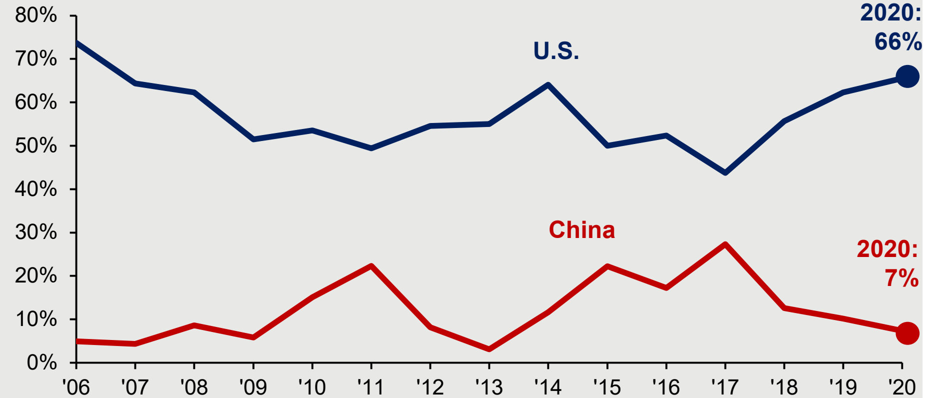
Chinese private equity markets

Number of unicorns by city*
Hurun Global Unicorn Index 2020, top 10 cities

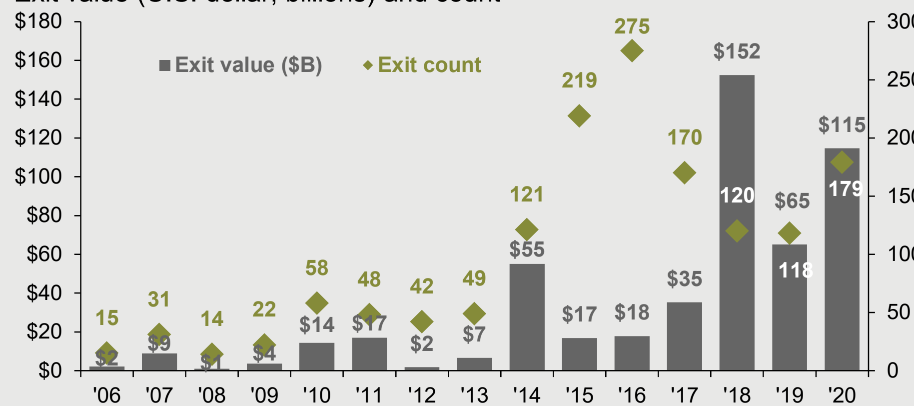


Chinese unicorns by sector	Number	% of total valuation
FinTech	18	52%
E-commerce	39	15%
Logistics	16	15%
Artificial Intelligence	21	9%
Health Tech	16	9%

Venture capital fundraising
Capital raised, % of global total



China venture capital exits
Exit value (U.S. dollar, billions) and count



Source: (Left) Hurun Research Institute; (Right) KPMG, PitchBook, J.P. Morgan Asset Management.
*Unicorns defined as companies worth at least a billion dollars and not yet listed on a public exchange. Unicorn valuations are a snapshot of March 31,2020.
Venture capital fundraising and exits based on KPMG's *4Q20 Venture Pulse Report – Asia*.
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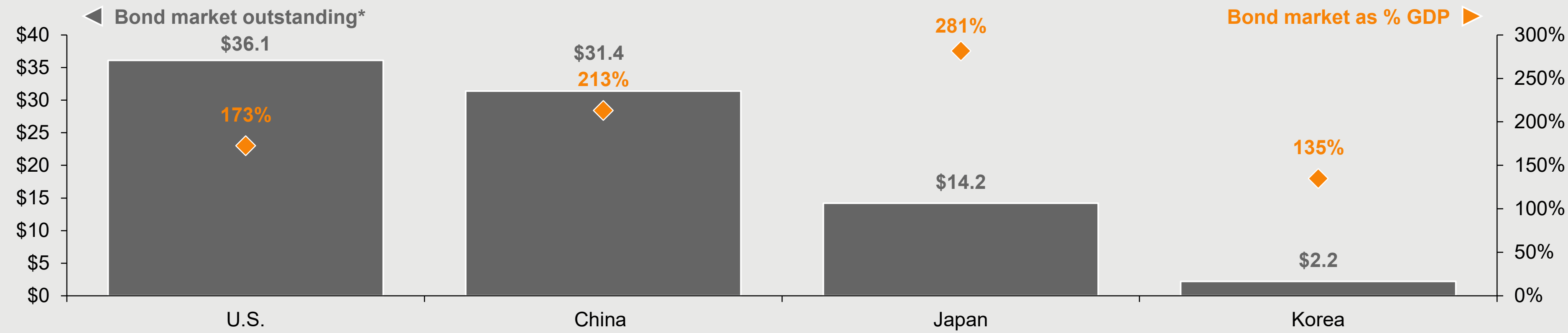
Debt and bond markets by country

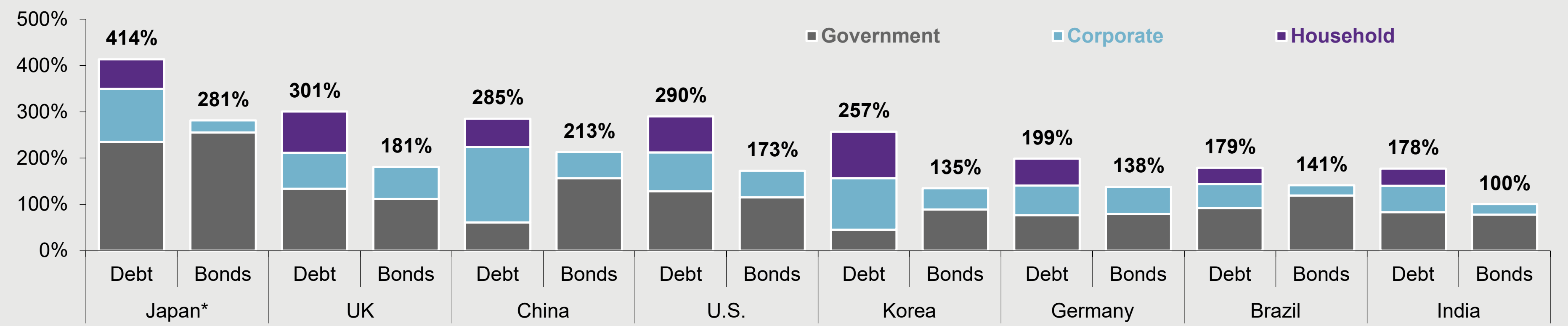
Bond market size in value and as a % of GDP

USD trillions, % of nominal 2020 GDP, as of 4Q20



Debt and bonds as a % of GDP

Total market value of total debt and bonds**, % of nominal 2020 GDP



Source: BIS, Bloomberg Finance L.P., IMF, J.P. Morgan Asset Management. Debt valuation is as of 4Q20, bond valuation is as of July 31, 2021.
*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 July 31, 2021.

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Bond market in China

China's three different bond markets

As of Jun. 30, 2021

Onshore RMB (CNY) market*

Value: USD$6.7 trillion (the largest)
Average credit rating: A+
Average yield-to-maturity: 3.13%

Offshore foreign currency market**

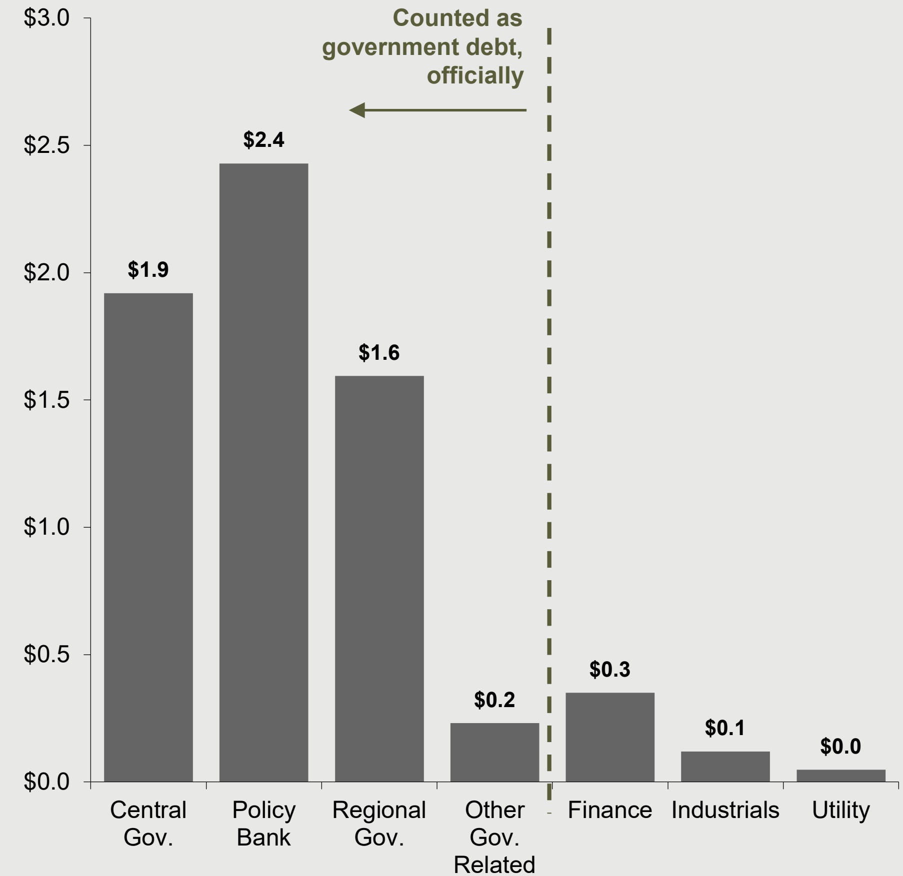
Value: USD$643 billion (the middle)
Average credit rating: A-
Average yield-to-maturity: 4.86%

Offshore RMB (CNH) market***

Value: USD$20 billion (the smallest)
Average credit rating: A
Average yield-to-maturity: 2.96%

China's onshore bond market by type of issuer

USD trillions, as of Jun. 30, 2021



Source: Bloomberg Finance 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. Average credit rating is as of Feb. 2021. **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.
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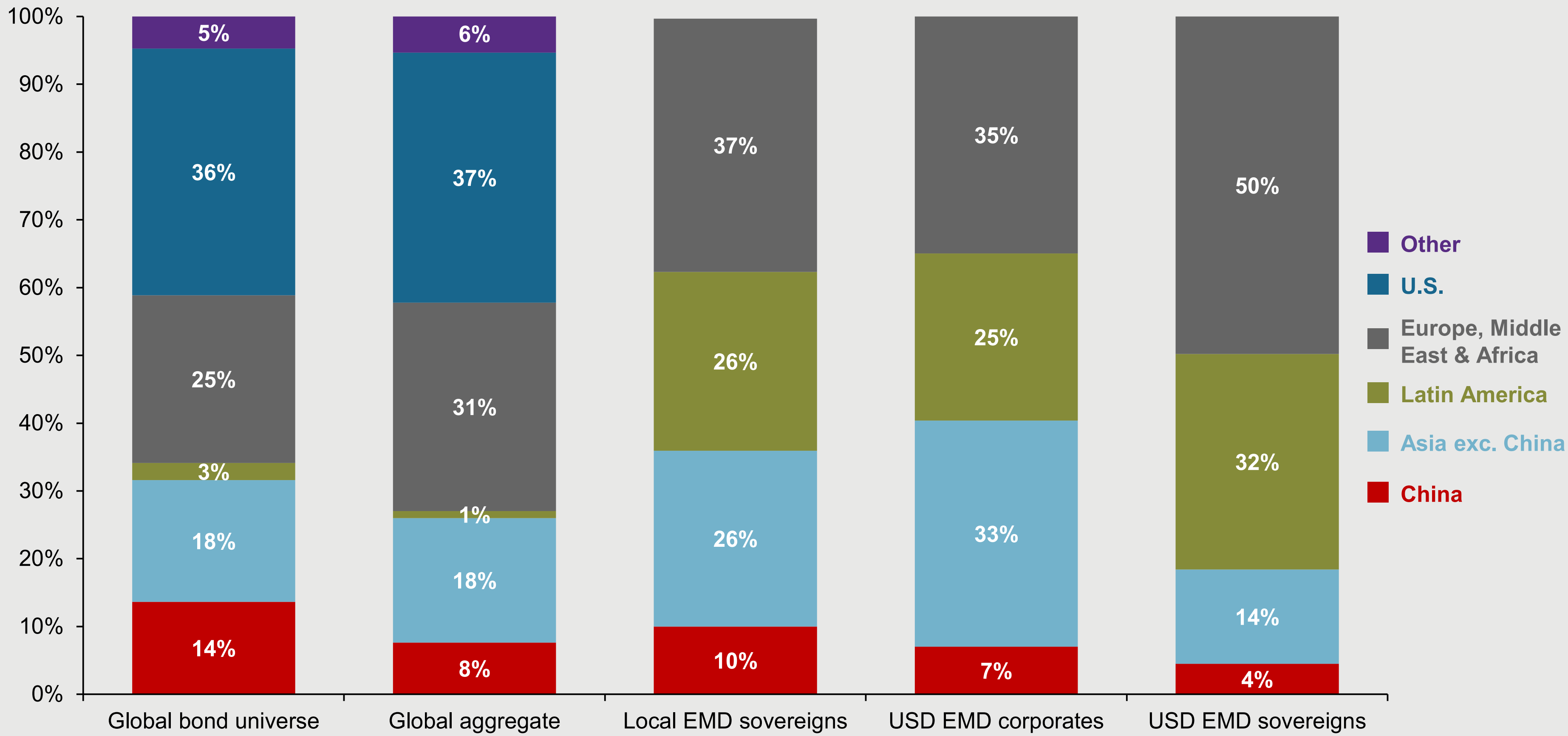
Bond index weightings to China

Weight of China in bond universe and bond indices
As of Jul. 2021



Source: Bloomberg/Barclays, 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 Barclays Global Aggregate (Global Aggregate).
Guide to China. Data are as of July 31, 2021.

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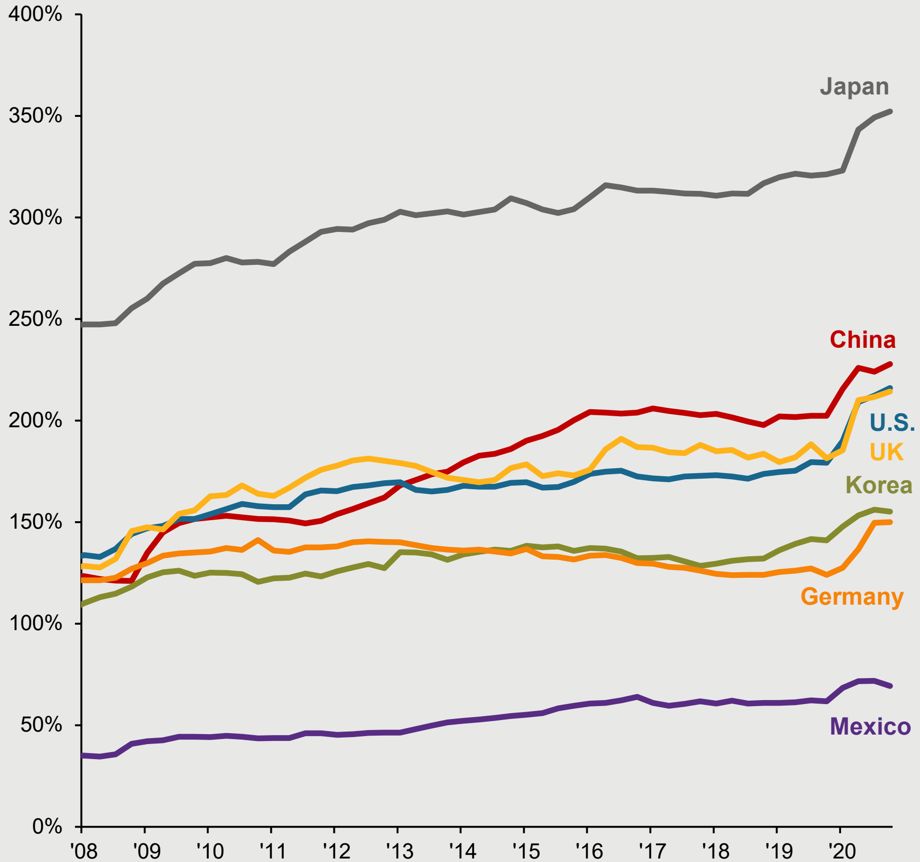
Bond market and yields by country

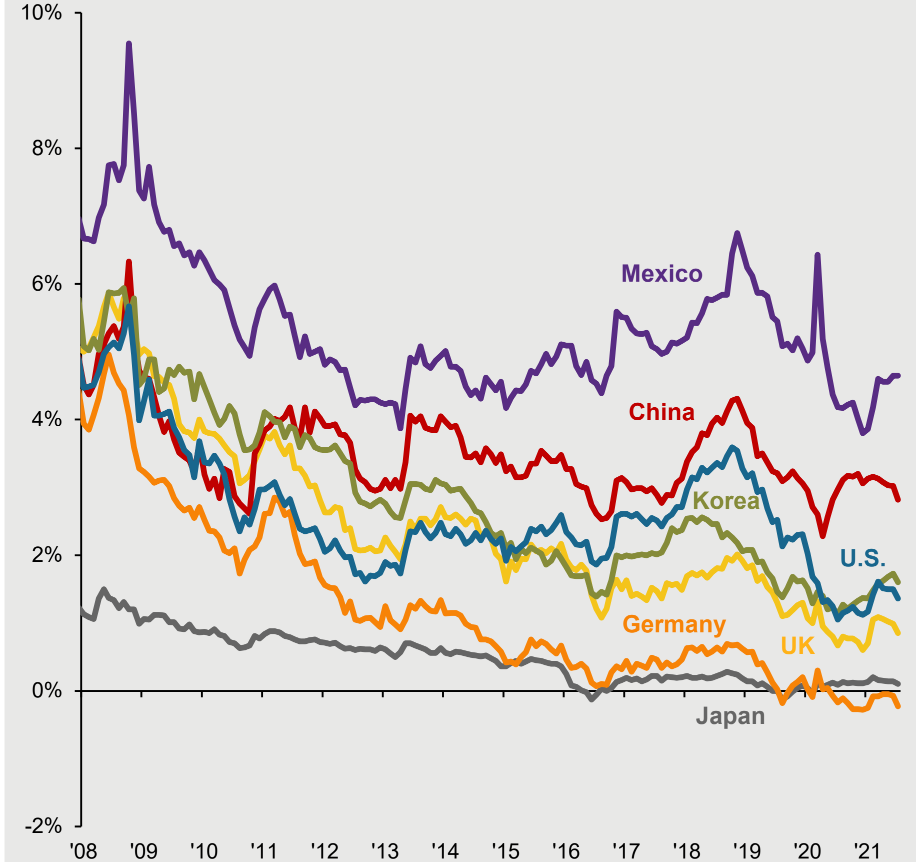
Debt by country

% GDP, includes government and corporate debt



Yields by country

Government and corporate bond indices



Source: BIS, Bloomberg, FactSet, J.P. Morgan Asset Management.
Country yields are provided by Bloomberg and are represented by the global aggregate for each country, except for U.S. which is based on Bloomberg Barclays U.S. Aggregate. Yield is not guaranteed. Positive yield does not imply positive return.
Guide to China. Data are as of July 31, 2021.

Fixed income

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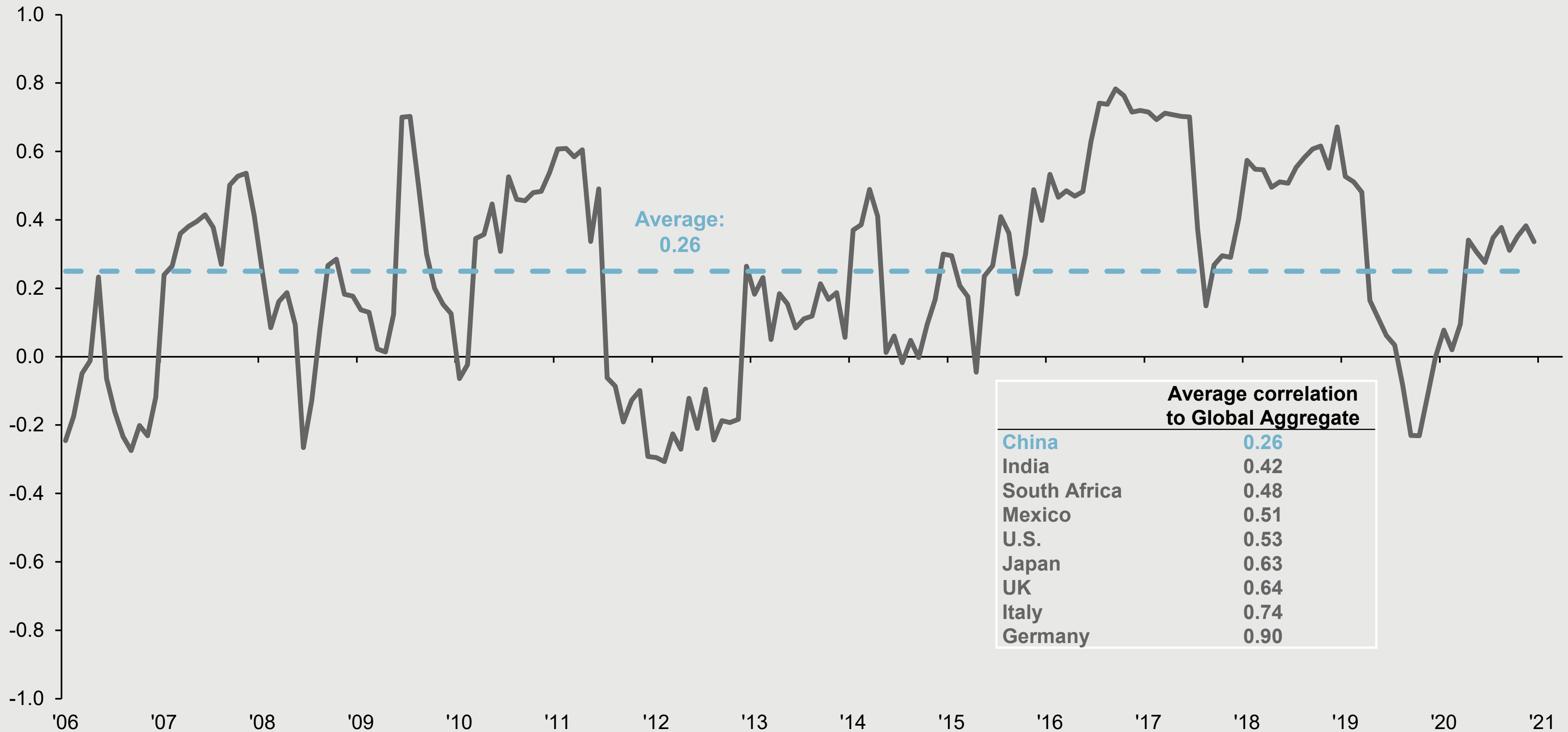
Diversification benefits of Chinese bonds

Correlation between Chinese and global government bonds

Total return index in U.S. dollars*, 12-month rolling correlations of monthly return



	Average correlation to Global Aggregate
China	0.26
India	0.42
South Africa	0.48
Mexico	0.51
U.S.	0.53
Japan	0.63
UK	0.64
Italy	0.74
Germany	0.90

Source: Bloomberg Finance L.P., J.P. Morgan Global Economic Research, J.P. Morgan Asset Management.
*Indices are Bloomberg Barclays Global Government Bond Index and Bloomberg Barclays China Onshore Government Bond Index.
Average country correlations use monthly total returns in U.S. dollar terms from 08/31/06– 07/31/21.
Past performance is not a reliable indicator of current and future results.
Guide to China. Data are as of July 31, 2021.

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Biographies

Gabriela D. Santos, *executive director*, is a Global Market Strategist on the J.P. Morgan Asset Management Global Market Insights Strategy Team. In this role, Gabriela is responsible for delivering timely market and economic insights to institutional and retail clients across the U.S. and Latin America. In addition, Gabriela conducts research on the global economy and capital markets and is responsible for the development of the flagship quarterly Guide to the Markets – Latin America and other publications. Since joining the team, Gabriela has played an instrumental role in the expansion of the Market Insights program in Latin America. Gabriela is also a frequent guest on CNBC, Bloomberg, and other financial news outlets and is often quoted in the financial press. Prior to joining J.P. Morgan in 2012, Gabriela worked at HSBC's Private Bank for three years, stationed in Singapore, Switzerland and Mexico. In her role as a banker in Singapore, Gabriela provided strategic advice to High Net Worth European clients on managing their personal and family wealth. Previously, she was a trader on the structured products trading desk in Geneva, Switzerland and helped launch a credit platform in Mexico City, Mexico. Gabriela graduated summa cum laude from the University of Pennsylvania with a Bachelor of Arts degree in Philosophy, Political Science, and Economics, as well as French. She is fluent in Portuguese, English and French and proficient in Spanish.

Lara Clarke, *managing director*, based in Los Angeles, is a Client Advisor within J.P. Morgan Asset Management. She oversees client and business development efforts providing tailored investment solutions for U.S. institutional investors across public and corporate pension plans. She is also the Client Segment Lead for U.S. public pension funds. Previously, Lara was Director of Marketing and Business Development for Los Angeles Capital Management, an institutional equity investment manager focused on creating customized portfolios to meet client specific needs. She led the firm's marketing strategy for the public pension, corporate plan sponsor, endowment/foundation, and consultant community in the West and Midwest regions. Prior to LA Capital, she focused on relationship management at StarMine Corporation and Thomson Financial (Baseline). Lara is also the Co-Founder and President of Women in Institutional Investments Network (WIIIN), a 501(c)(3) non-profit organization focused on creating a community for women in institutional investments in Southern California through educational and philanthropic events. Lara received a B.S. in Finance and International Business from Pennsylvania State University and M.B.A. from the UCLA Anderson School of Management. She holds the Series 7, 63 and NFA Series 3 licenses.

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J.P. Morgan Asset Management: Index Definitions

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℠** 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℠** 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 country 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℠** 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 RMB 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 ("HSCEI")** 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 investibility 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 Barclays 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.

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J.P. Morgan Asset Management: Index Definitions

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 Barclays 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 Barclays 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.

Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies can raise or lower returns. Also, some markets may not be as politically and economically stable as other nations. Investments in **emerging markets** can be more volatile. The normal risks of international investing are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Investing using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

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. **Positive yield does not imply positive return.**

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J.P. Morgan Asset Management – Risks & disclosures

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Prepared by: David Kelly, Marcella Chow, Gabriela Santos, Chaoping Zhu, Stephanie Aliaga, Olivia Schubert.

Unless otherwise stated, all data are as of July 31, 2021 or most recently available.

Guide to China

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Asset Management

SCERS

SCERS Portfolio Exposure - China

October 20, 2021

Agenda

- Summary of SCERS asset class exposure to China
  - Minimal overall exposure
    - Public equity – slightly below global equity index
    - Privates – any dedicated exposure is thematic driven

- Opportunity set

Fixed Income & Private Credit

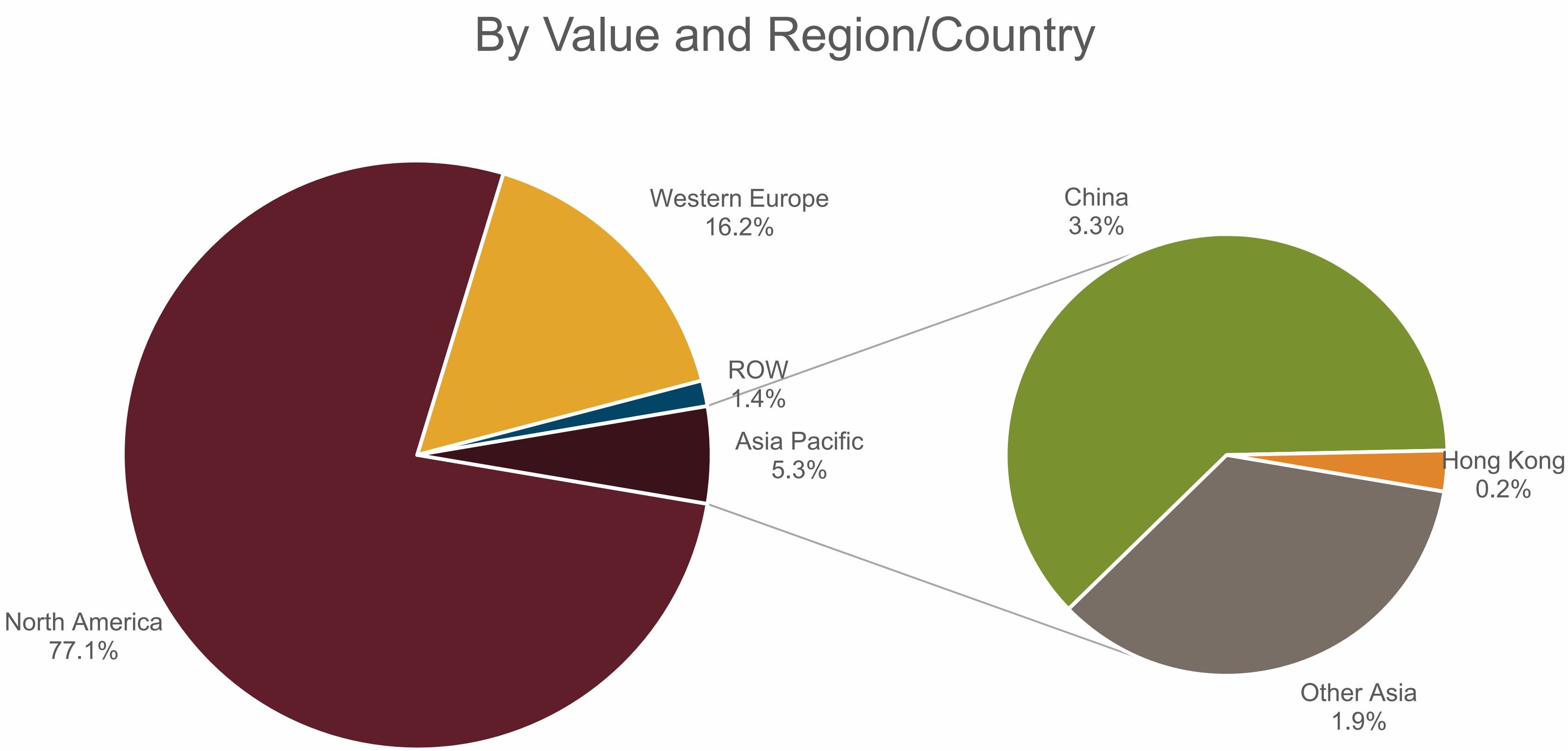
- Fixed Income
  - Core plus - each manager owns one corporate bond position
    - Less than 0.15% of portfolio exposure
  - Global fixed Income
    - 3% exposure
    - Global fixed income eliminated from strategy asset allocation

- Private Credit
  - No exposure

Absolute Return

- Minimal exposure across Growth and Diversifying Absolute Return strategies
- Approximately 4.4% Gross and 1.8% Net exposure across Absolute Return portfolio (relative to total Absolute Return allocation)
- Exposure is diversified across a large number of managers and strategies
  - Approximately 14 out of 16 current managers have some exposure
- Exposure will decrease as Growth Absolute Return segment is wound down

Private Equity (as of June 2021)



Current Thinking on Private Equity

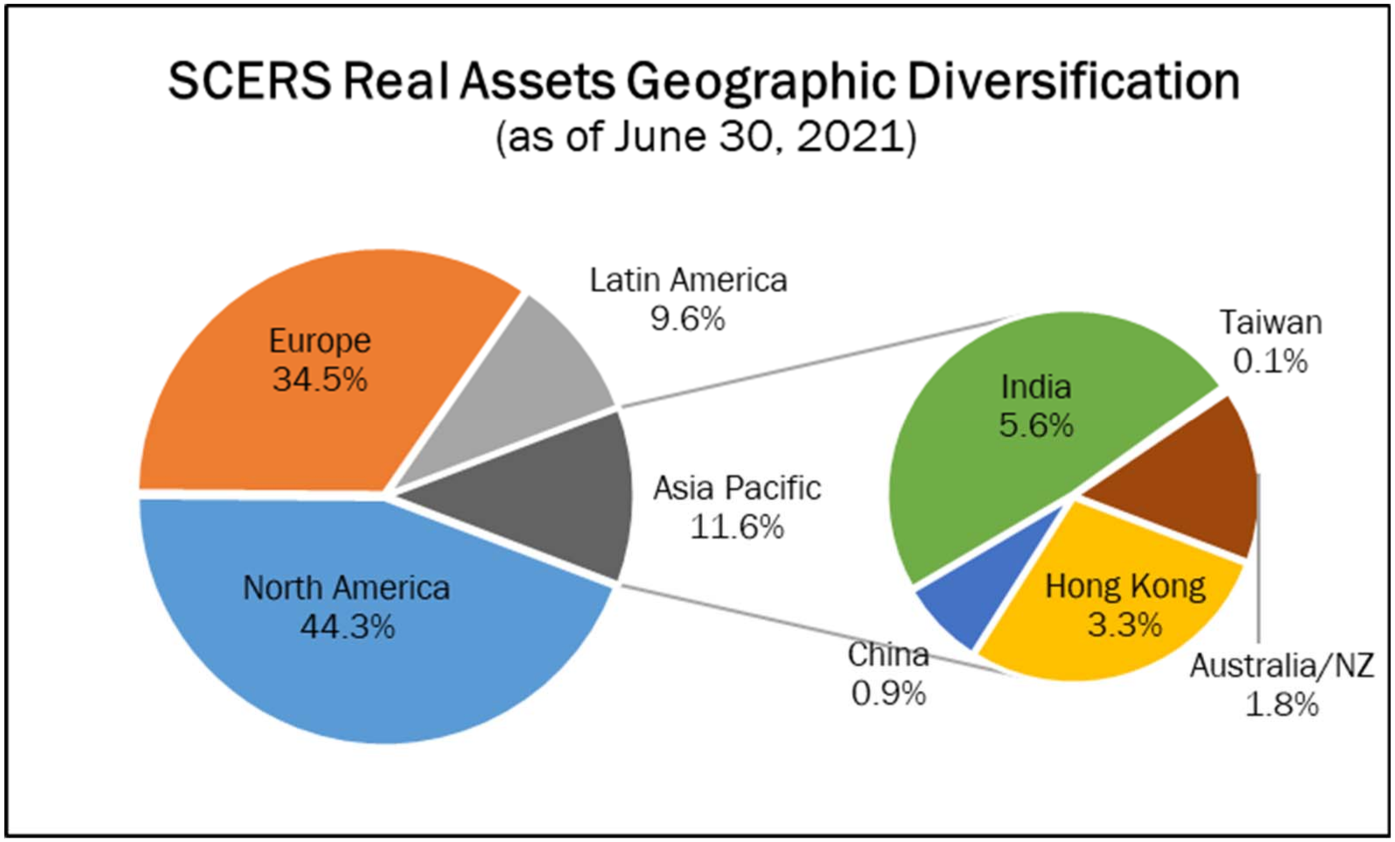
- What is an Illiquidity Premium? When illiquidity change?
- How do you handle currency? And to what level?
  - SCERS, Partnership, or Company
- DPI versus TVPI
- Increasing regulation
- Local funds versus global brands
- Local currency funds versus offshore funds
- Ability to access best funds
  - Fly in and fly out model
  - Funds coming to Sacramento

ILPA Private Equity Index

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR
Asia/Pacific	9.97	56.66	20.13	17.86	14.86	14.79
Europe USD	4.14	51.61	19.12	19.95	12.55	12.43
Europe EUR	8.41	41.41	21.1	19.31	15.53	13.11
US	10.19	53.01	21.47	21.47	19.78	15.82
MSCI EM	2.34	58.92	6.87	12.48	4.02	6.30
MSCI World ex US Index	4.04	45.86	6.34	8.92	5.21	4.12

Is it worth the illiquidity risk or market risk?

Real Assets



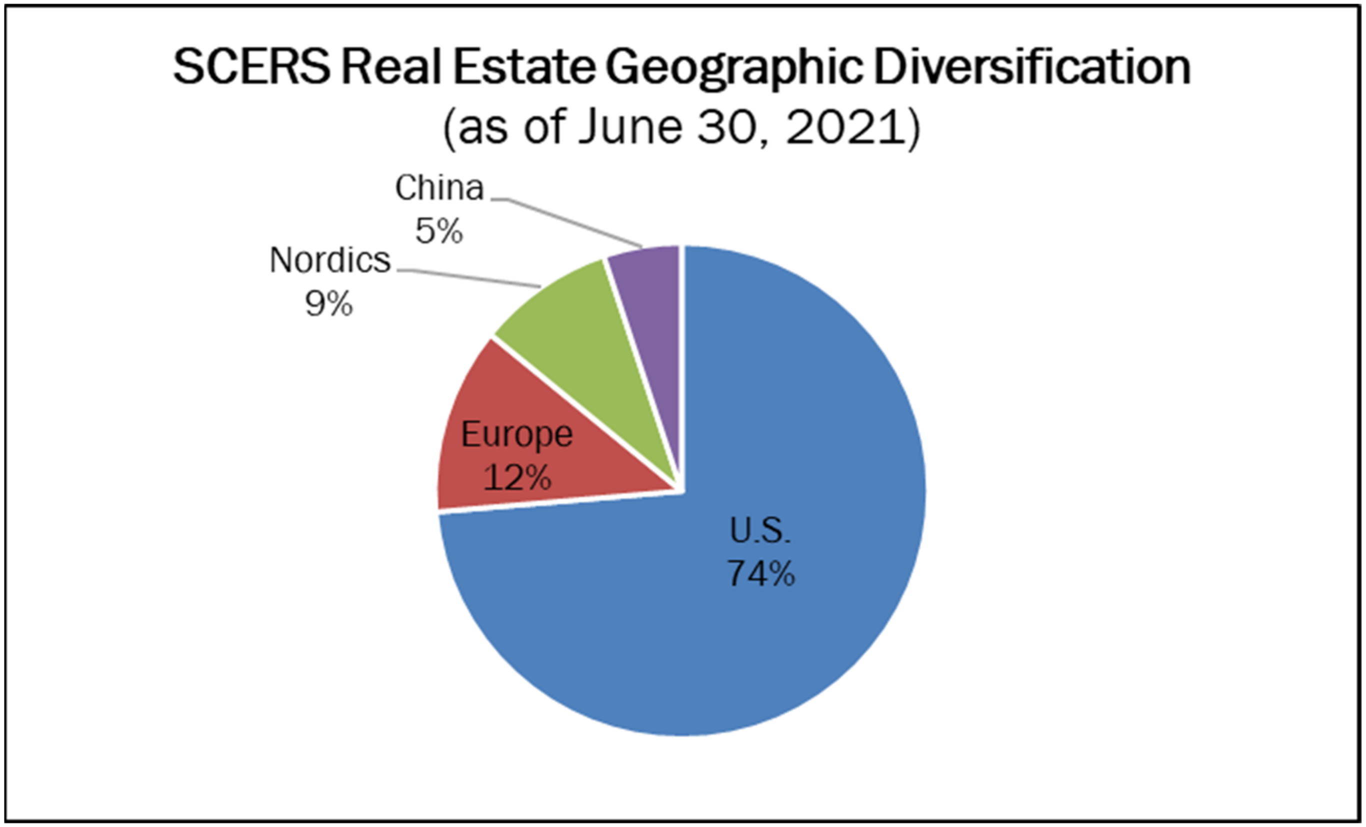
- Minimal exposure through geographically diversified core infrastructure funds

Real Assets Portfolio Construction

- Diversification
  - Region/Country
  - Strategy (core, value add, opportunistic)
  - Asset Type (infrastructure, energy, natural resources)

- Correlation Among Countries
  - Developed (North America, Europe, Australia)
  - Growth (China, India, Latin America)

Real Estate

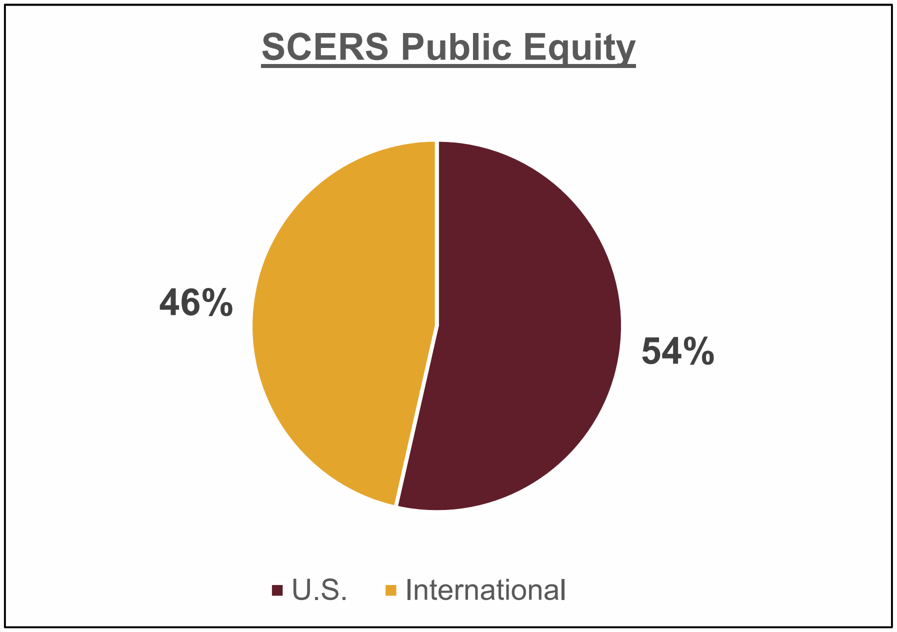


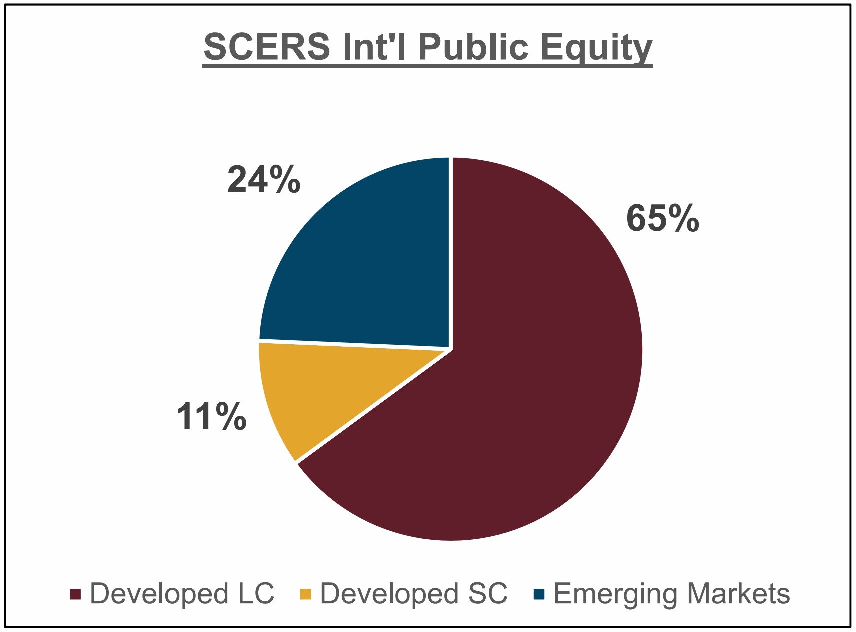
- Targeted exposure to two funds
  - Development and acquisition of logistics facilities

Real Estate Portfolio Construction

- Diversification
  - Region/Country
    - Focus on economic drivers and cycle
  - Strategy (core, value add, opportunistic)
    - Hub and Spoke portfolio construction
  - Asset Type (apartments, logistics, office, retail, and specialty)
    - Focus on market cycle, relative value, and property fundamentals
- Correlation Among Countries
  - Developed (North America and Europe)
  - Growth (China, Southeast Asia, Central and Eastern Europe)

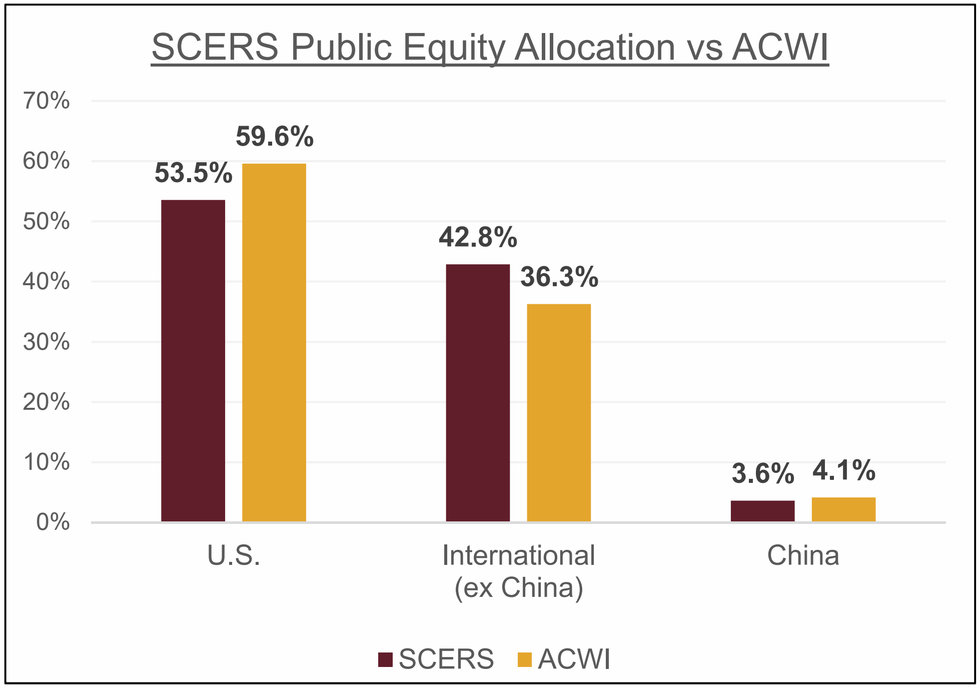
Public Equity

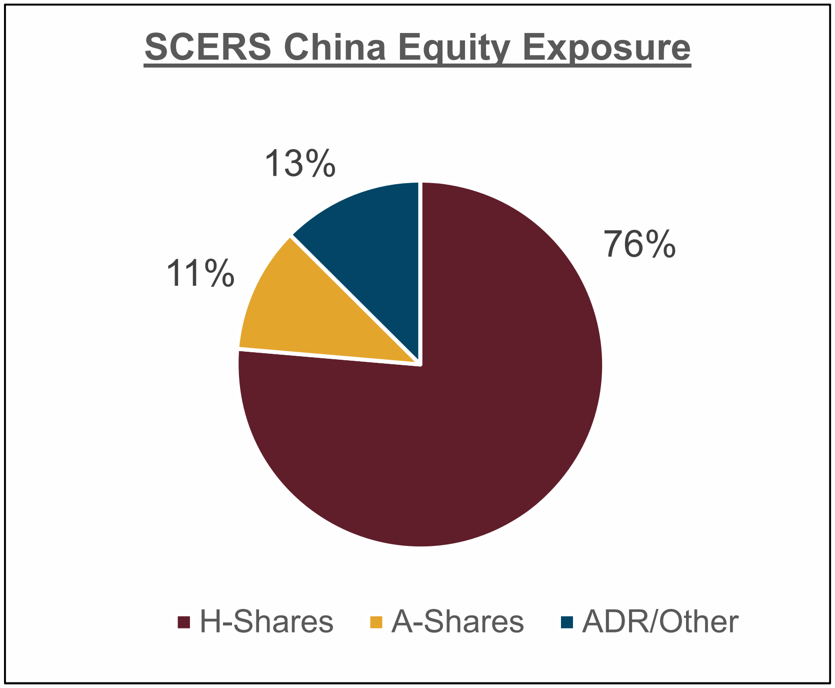




- U.S. Equity outperformance has tilted public equity portfolio toward overweight position in U.S. Equity versus target 50/50 split
- International equity portfolio is roughly in line with allocation targets for developed large cap, small cap, and emerging markets segments

Public Equity





- SCERS Public Equity portfolio is underweight U.S. and overweight International compared to the MSCI ACWI index
- SCERS direct exposure to China is slightly below the MSCI ACWI index, with the majority of exposure through investments in H-Shares

China Public Equity Opportunity

- Second largest public equity market
  - Approximately $16 trillion
- Still under-represented in public equity benchmarks
  - Approximately 5% of MSCI ACWI index
  - China A-shares limited to 20% inclusion rate
- Attractive valuation levels
  - MSCI China at 13x Fwd P/E and MSCI China A at 15x compared to MSCI ACWI at 18x and S&P 500 at 20x
- Low correlation with U.S. and Global equity markets
  - Correlation below 0.50 for China A-shares
- Relatively inefficient market presents alpha opportunity
  - High level of retail participation with less equity research

Next Steps

- Global Equity asset class structuring
  - Flexibility to include appropriately sized country specific allocations
- Continue to evaluate investment opportunities within the private markets
  - Exposure expected to remain minimal, and based more on thematic macro opportunity set
- Future recommendations would be made according to existing implementation protocols