CHINA'S MARKET OUTLOOK

# Chinese assets: The biggest risk for investors would be to ignore them

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## IN BRIEF

- Despite short-term uncertainty, the strategic investment case for Chinese public and private markets remains strong; we believe the rewards outweigh the risks over the long term. Diversification opportunities, currency appreciation and potential alpha opportunities may offset Chinese assets' relatively higher volatility for U.S.-dollar based investors.
- Long-term, we forecast:
  - onshore Chinese equity and government bonds returning a substantial premium over developed markets
  - further capital market reforms and opening
  - rising market participation by households as well as domestic and foreign institutions
  - a tilt by Chinese public and private equity toward new economy/growth sectors where the government wants to channel capital
- We believe investors do not have enough exposure to Chinese onshore assets; our hypothetical analysis finds that reallocating some holdings to Chinese onshore equities and government bonds would likely improve a multi-asset portfolio's risk-adjusted returns.
- Among the key factors that could affect our long-term assumptions for Chinese assets: the pace of structural reforms; policies seeking to rebalance efficiency and equality in the economy; liquidity; and the external environment.
- Sustainable funds, green bonds and social impact bonds are fast-growing areas. New rules on corporate environmental disclosure might help investors decide which companies may be challenged by China's climate goals. Social factors pose particular challenges for certain sectors in China.

## THE RISE OF CHINESE ASSETS IN GLOBAL PORTFOLIOS

The next decade should see significant structural change in the Chinese economy and continuing capital market reforms, with profound implications for Chinese assets and their role in global portfolios. Despite the recent volatility in Chinese equities amid changing regulations, we still believe it is an opportune time to talk about allocating to Chinese assets. Our 2022 forecasts suggest onshore Chinese equities and government bonds will continue to offer long-term investors a substantial return premium over developed markets, with low correlations.

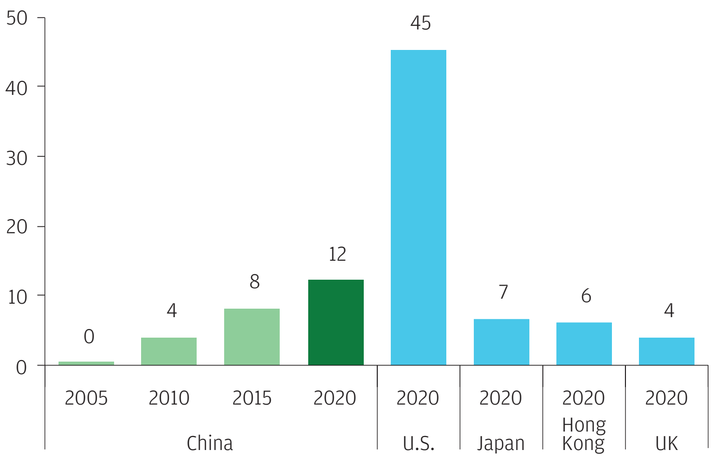
Despite Chinese assets' higher volatility, the diversification opportunities, currency appreciation and alpha opportunities will likely attract more investors – and prompt more individuals and institutions to consider investing in China as a stand-alone allocation.

Over the past 15 years, China's onshore stock and bond markets have become the second largest in the world, helped by international investment flows spurred by China's inclusion in benchmark global stock and bond indices (**EXHIBIT 1**).

**China's markets have risen to become some of the largest in the world**

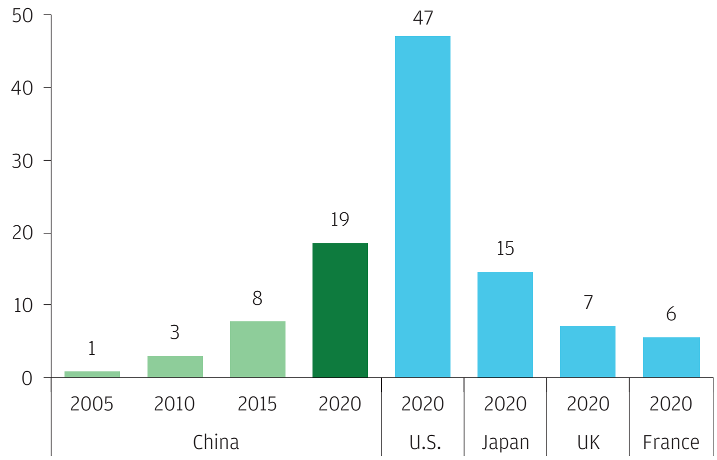
**EXHIBIT 1: CHINA'S PUBLIC AND PRIVATE MARKET SIZE (USD TN) VS. OTHER TOP MARKETS**

China's onshore equity market size vs. top equity markets (USD tn)



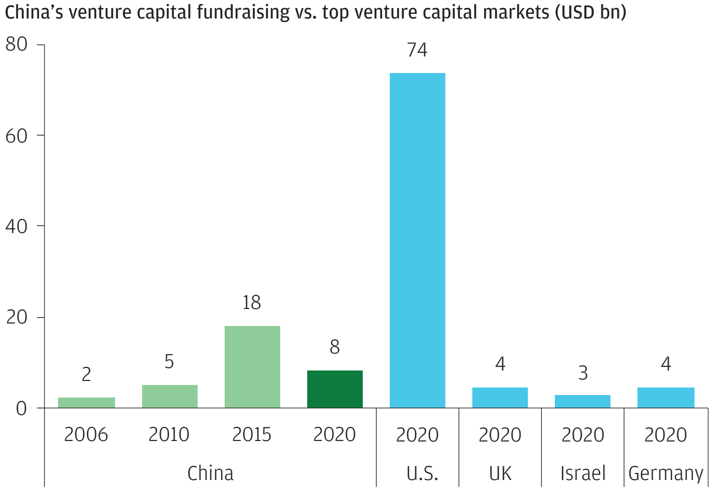

Source: World Federation of Exchanges; data as of December 2020. China: Shanghai and Shenzhen stock exchanges. U.S.: NYSE Euronext and Nasdaq.

China's onshore bond market size vs. top bond markets (USD tn)



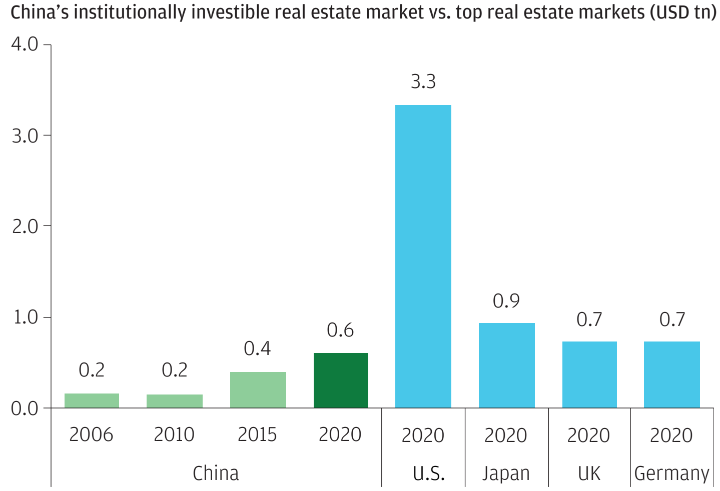

Source: World Federation of Exchanges; data as of December 2020.

China's venture capital fundraising vs. top venture capital markets (USD bn)




Source: KPMG; data as of December 31, 2020.

China's institutionally investible real estate market vs. top real estate markets (USD tn)




Source: MSCI; data as of December 31, 2020.

China is also the world's second-largest market for venture capital (VC) investment, measured by the latest available fundraising, exit values and deal values.[1] China's institutionally investible real estate market is No. 5 in the world,[2] and its new public REITs market, launched in 2021, has the potential to become the world's largest.

## Too big to ignore – yet largely overlooked

The average international institutional investor's total China exposure is 4.6% of its total assets.[3] A large part of this is likely to be in offshore Chinese equities, because institutions invest in China mostly through an emerging market (EM) equity strategy, such as allocating to the MSCI EM index. While China accounts for around 34% of the MSCI EM index, the weight of onshore Chinese equities (China A shares) is only about 5%. Given such large onshore equity and bond markets, and ongoing capital market reforms and opening, Chinese assets' weight in global portfolios will likely rise over time.

While we focus here on the market's size and the potential benefits of adding Chinese assets to global portfolios, investing in China has its challenges. Among the key factors that could affect our long-term assumptions for Chinese assets: the pace of structural reforms, policies seeking to rebalance efficiency and equality in the economy, liquidity and the external environment.

Yet investors should not ignore the country's long-term macroeconomic and market trends. Here we consider:

- Three key trends to watch in Chinese capital markets
- How these structural trends are likely to affect Chinese market return, volatility and correlation assumptions
- A hypothetical case study of allocating to Chinese equities and fixed income in a global portfolio
- Three key trends in the ESG space

# CHINA'S MARKETS: THREE KEY TRENDS TO WATCH

Over the next 10 to 15 years, we expect China's market reforms, expanding middle class and transition toward a more consumption- and innovation-driven economy to power three major structural trends in its asset markets:

1. Better access for foreign investors
2. A changing investor mix
3. A changing sector mix

## 1. Better access for foreign investors: Freer participation, RMB internationalization

China's economic weight is 17% of global GDP. Yet China makes up just 4% of the MSCI All Country World Index and just 8% of the Bloomberg Global Aggregate Bond Index. We expect this to shift as China continues easing overseas investors' access to domestic markets[4] and as local investor participation rises.

The shift we expect should extend beyond publicly traded securities to China's private markets. Real estate investors are seeing greater opportunities since, in an important change, companies in certain sectors were granted permission to create offshore entities through which they can pay dividends to foreign investors. In private equity (PE), the Qualified Foreign Limited Partner program permits overseas investors to take equity stakes in Chinese private companies through onshore renminbi (RMB) funds and offshore U.S. dollar funds. (Access to some sectors, including artificial intelligence and semiconductors, is restricted.) China's Foreign Investment Law, as of 2020, also provides more transparency for international investors in domestic private markets.

What could lie ahead? We expect more reforms from Chinese policymakers to pave the way to a larger share of international ownership of onshore Chinese assets. China's 14th Five-Year Plan (FYP), for 2021–25, reiterates the government's commitment to further opening capital markets. The FYP also pledges to push forward RMB internationalization by giving the currency more flexibility and, ultimately, facilitating its free use.

However, policymakers will also be considering potential risks to financial stability. These processes will likely unfold gradually.

[1] "Venture Pulse Q4 2020," KPMG, January 2021. (Greater China [China, Hong Kong, Taiwan, Macao] PE/VC assets under management may be over USD 1 trillion; VC is 46% of Greater China AUM. "Markets in focus: Alternative assets in Asia-Pacific," Preqin, June 2021. Greater China includes primarily mainland-oriented investments.)

[2] MSCI's estimates of China's institutionally investible real estate market, at USD 600 billion, exclude non-institutionally owned assets; if applied worldwide, that methodology would reduce the stock by USD 10 trillion globally, we believe, and meaningfully in China (where transparency is low and private ownership high). Our wider definition puts China's institutional-quality real estate market at about USD 3 trillion, the world's second largest.

[3] "Crafting the Optimal China Allocation Strategy: The Asset Owner's Perspective," Greenwich Associates, April 7, 2020. A full 68% of investors in the study say EM equity strategies are their primary source of China exposure; 21% access Chinese fixed income through EM bond strategies.

[4] Over the past decade, China has allowed greater access for foreign investors to the domestic market through the expansion of programs including Stock Connect and Bond Connect.

## 2. A changing investor mix: Greater institutional participation

In the next 10 to 15 years, we expect institutional investors in the onshore equity market to rise in importance. In the Chinese government bond (CGB) market, we see the predominance of hold-to-maturity investors diminishing. A key driver should be China's rapidly expanding middle class putting more of its savings into financial products.

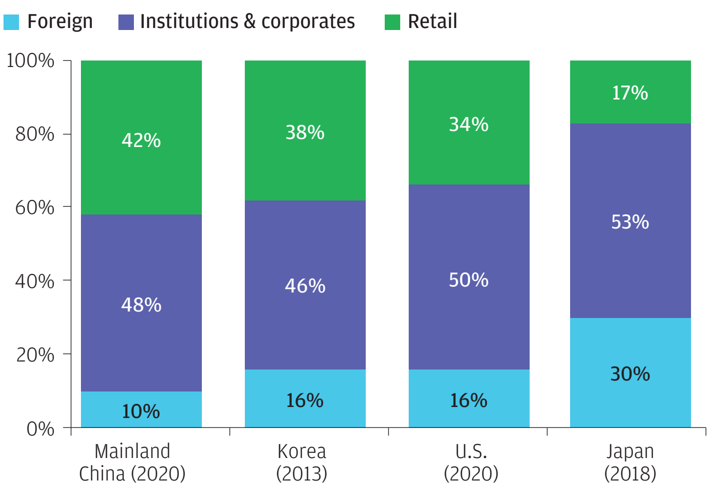
At present, over 60% of China's urban household wealth is concentrated in real estate. Of the remaining 40% of wealth, about 60% is in cash and bank deposits. We expect over time a shift toward stock and bond investing as property market speculation faces more stringent regulation and improvements in the social welfare system reduce precautionary saving in cash. Together, these forces should drive more households to allocate to capital markets through investment in mutual funds and insurance, supporting the development of a more institutionalized investment culture.

**EQUITIES** Local retail investors once dominated the A-shares[5] domestic stock market, but their footprint has gradually diminished: Retail investor holdings fell to 42% of all equity holdings in 2020, from 60% in 2010, a decline that could continue in the years ahead, though at present retail remains a higher fraction in China than in other major emerging and developed equity markets (**EXHIBIT 2A**). Retail investors still dominate trading volume, accounting for 70% in 2020. In their place in the future, we anticipate more institutional investors, attracted by equity market legislation, such as 2020's new Securities Law, which strengthened investor protections.[6]

**FIXED INCOME** About 66% of all onshore bonds are held, mostly to maturity, by domestic commercial banks, a significantly higher proportion than in other markets, likely weighing on bond market liquidity (**EXHIBIT 2B**). As domestic asset managers and international investors grow as a fraction of CGB holders, trading activity should rise. That has already begun.

**Local retail investors no longer dominate the onshore A-shares stock market; today, institutions have become the biggest holders and own more than in other Asian economies**

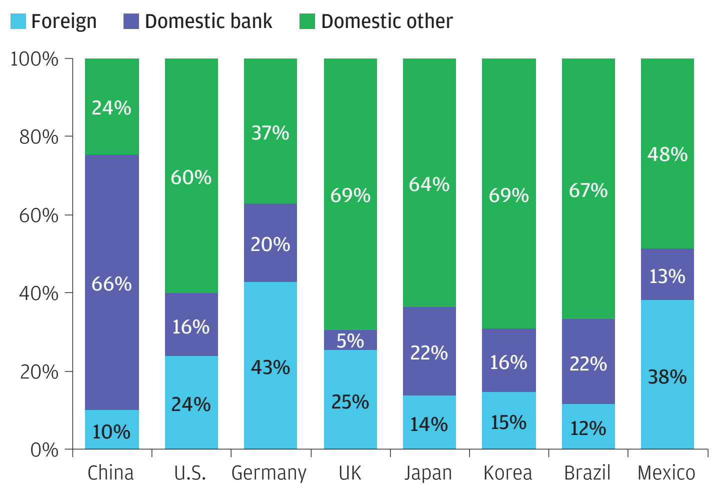
**EXHIBIT 2A: SELECTED ECONOMIES' STOCK MARKET INVESTOR STRUCTURE BY HOLDING VALUE**




Source: People's Bank of China, Federal Reserve, TWSE, KRX, JPX, Goldman Sachs Global Investment Research, Gao Hua Securities Research; data as of December 31, 2020. Mainland China data reflects free-float market cap, while other markets are based on total market cap. Data based on latest available disclosures.

**In a unique pattern, China's domestic banks hold most government bonds, mostly to maturity, hurting liquidity – but this is changing**

**EXHIBIT 2B: SELECTED ECONOMIES' GOVERNMENT BOND MARKET INVESTOR STRUCTURE BY HOLDING VALUE**




Source: WIND, IMF; data as of December 31, 2020. China shows CGB holdings by investor type. Government debt holdings data from the IMF are used as a proxy. Government debt indicates general government gross debt on a consolidated basis, which excludes intergovernmental holdings. Domestic banks are depository corporations residing in the country. Foreign banks are Bank for International Settlements reporting banks residing outside the country. Foreign official includes foreign central bank holdings as foreign exchange reserves, Securities Market Programme holdings of foreign central banks and foreign official loans. Foreign nonbanks and domestic nonbanks are imputed from external and total debt.

5 A shares are domestic Chinese company stocks listed onshore in Shenzhen or Shanghai. (H shares are listed offshore on the Hong Kong Stock Exchange.)

6 The law regulated securities markets more tightly in other ways and enforced delistings more strictly.

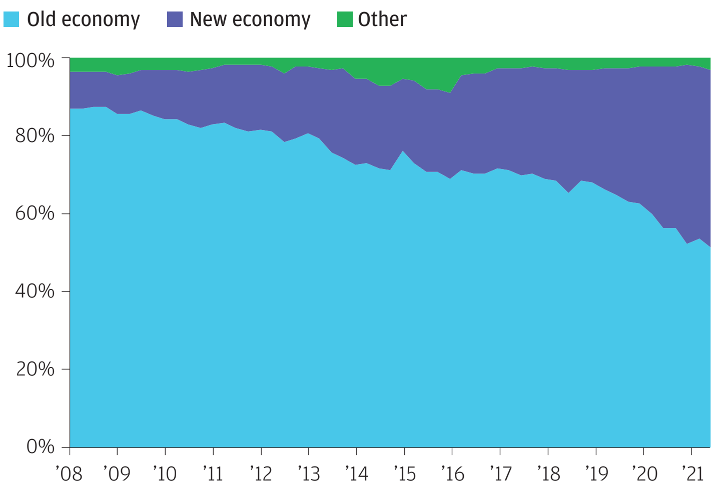
**PRIVATE MARKETS** Tighter regulation of private investment funds and an emerging REITs market should encourage more institutional participation in private equity and real estate.

## 3. Chinese markets' changing sector mix: More exposure to growth industries

With China's transition toward a more consumption- and innovation-driven economy from past reliance on investment and exports, its public and private equity markets' sector composition has shifted, too – toward new economy sectors where the government wishes to channel capital. These include consumer goods, technology, health care and high end manufacturing (**EXHIBIT 3**).[7] We expect these shifts to continue, offering potentially more exposure to growth sectors for investors in China compared with emerging markets overall.

**The composition of China's benchmark onshore equity index, the CSI 300, has tilted toward growth sectors**

**EXHIBIT 3: EVOLUTION OF CSI 300: NEW ECONOMY VS. OLD ECONOMY SECTOR WEIGHTINGS**




Source: Refinitiv, J.P. Morgan Asset Management; data as of September 30, 2021. New economy sectors include technology, telecom services, consumer goods and health care; old economy sectors include financials, materials, industrials and energy. The CSI300 index is a free-float weighted index that consists of 300 A-share stocks listed on the Shanghai Stock Exchange or the Shenzhen Stock Exchange.

We highlight a few additional recent market developments relevant to potential sector shifts:

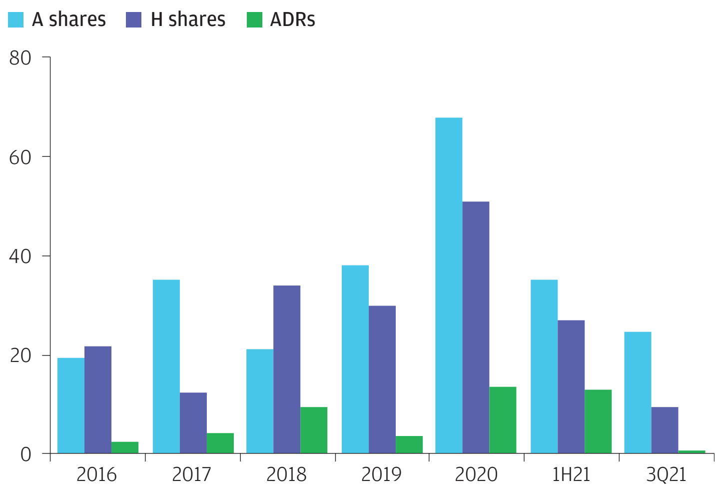
### EQUITIES

Reform of the initial public offering (IPO) system should ease the way for more IPOs. China now has a registration-based IPO system, but it is currently limited to the STAR Market and ChiNext board.[8] These rules will likely expand in the coming quarters to all IPOs across the A-share market. China A-share IPO volume growth has accelerated since 2019, while offshore Chinese IPOs (both H shares and American depositary receipts [ADRs]) have slowed since July 2021 (**EXHIBIT 4**).

Reforms of the IPO system will also be likely to support private market investors. We expect IPO system reform to ease listings by venture capital-backed firms, which now make up almost half the PE market, as regulators now permit as-yet unprofitable companies to sell shares in IPOs in onshore markets.

**Expect ongoing IPO reform to prompt more onshore IPOs compared with ADR listings**

**EXHIBIT 4: ANNUAL VOLUME, CHINESE IPOS (USD BN)**




Source: Bloomberg; data as of September 30, 2021. Unlike domestically listed A shares, H shares are listed offshore on the Hong Kong Stock Exchange. ADR: American depositary receipt, USD-denominated overseas company share listed on U.S. exchanges.

[7] In 2020, for example, Chinese policymakers announced a "dual circulation strategy" balancing the development of internal commerce and external trade ("circulation") to boost domestic consumption and improve self-reliance in core technologies.

[8] The Shanghai Stock Exchange launched the Science and Technology Innovation Board (the STAR Market) in June 2019 with rules meant to speed listings. The Nasdaq-style ChiNext market (of the Shenzhen Stock Exchange) was created to foster innovative, emerging industries. It is tracked by the 100-stock ChiNext Index.

Overseas regulatory change and rising domestic concerns about data security could prompt more domestic IPOs, especially for data-rich Chinese technology companies. Chinese firms may prefer to list domestically, as U.S.-listed Chinese firms have faced a higher risk of being delisted since the passage of a new U.S. law in 2020.[9]

### CORPORATE BONDS

This market is undergoing structural shifts, too. The current dominance by local governments and property developers will likely fade as private businesses become bigger issuers. Other shifts are likely to be:

- More efficient pricing of default risks in the market as the perceived implicit guarantee on the debt of state-owned enterprises (SOEs) diminishes
- Fiscal consolidation, leading to more clearly defined liabilities on local government bond issuers
- Better risk-pricing practices by domestic credit rating agencies, spurred by the entry of foreign rating agencies

### REAL ESTATE

Within income-producing real estate, we believe some types of commercial real estate may offer higher income potential as China's economic transition continues. These include data centers, logistics, medical labs and office properties in service industries such as tech, biomedicine and high end manufacturing. The nascent public REITs market should in time expand to potentially high growth sectors such as logistics, office and retail, and will likely permit private sponsors.

## HOW DO THESE STRUCTURAL CHANGES IMPACT OUR CHINESE MARKET RETURN ASSUMPTIONS?

What will these structural themes mean for Chinese markets? Their net impact on returns isn't necessarily apparent. Given the wide dispersion of returns among managers in Chinese markets, we expect active investing/alpha to be a potentially larger contributor to investors' total returns over the long term. Here are the considerations by asset class that help explain why.

## Fixed income

Over the last decade, China's trend growth has slowed, leaving less room for catch-up growth as the population has become wealthier. Core bond yields, however, have not declined in tandem. The five-year average 10-year CGB yield, 3.3%, has barely budged in the last 20 years. (The 10-year average yield is 3.4%; the 20-year average is 3.5%.)

Why is that, and where do we see yields going from here? In our view, structural factors are pulling yields in opposite directions: Slower structural growth and higher indebtedness – economy-wide debt has doubled since the 2008 global financial crisis, to 290% of GDP at the end of 2020 – should put downward pressures on yields.[10] On the other hand, reduced financial repression and the authorities' ongoing efforts to de-lever should support yields.

**LONGER-DATED RATES**: After factoring in our long-term macro assumptions for trend GDP growth and inflation, and the prospect of modestly less financial repression,[11] we forecast cycle-neutral average 10-year CGB yields at 3.7% – a modest amount of normalization. Our assumption implies that CGBs will continue to have a unique risk and return profile among global bonds (**EXHIBIT 5**). The spread between 10-year CGBs and 10-year U.S. Treasuries in 3Q 2021 was 160 basis points (bps), an attractive yield pickup, higher than it has been, on average (116bps), during the last decade. Cycle-neutral, and given our 10-year U.S. Treasury yield assumption of 3%, we forecast a CGB yield spread of 70bps over Treasuries.

**SHORT-DATED RATES**: China's development of a reference short-dated policy rate is still a work in progress, leaving investors to monitor several rates, including China's medium-term lending facility (MLF), the main rate at which the central bank lends to big commercial banks. Our estimated cycle-neutral average three-month interest rate, at 2.7%, is slightly lower than the MLF rate, 2.75%. China's short-dated rates contrast favorably with those in most developed markets, which are not only very low but probably still a few years away from normalization.

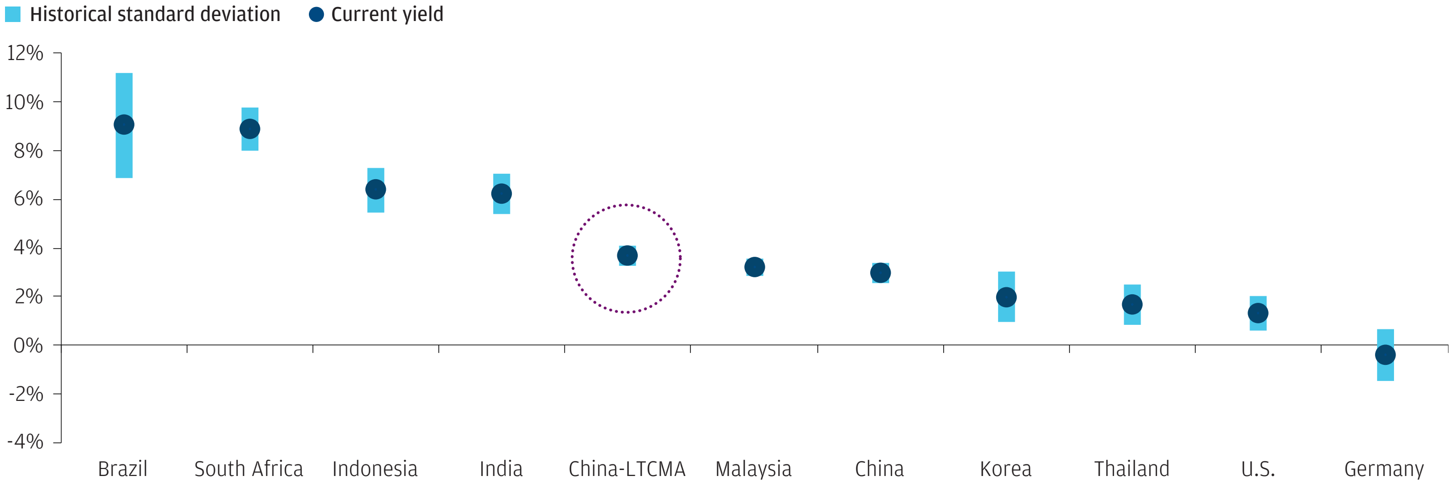
[9] The *Holding Foreign Companies Accountable Act* (2020) requires foreign companies that list on U.S. stock exchanges to be audited for three consecutive years by the Public Company. Accounting Oversight Board on behalf of the Securities and Exchange Commission.

[10] "Debt Securities Statistics," Bank for International Settlements, June 2021.

[11] We expect less financial repression as the People's Bank of China moves away from a credit growth-based policy framework, giving greater influence to interest rates.

**CGBs have a unique risk-reward profile**

**EXHIBIT 5: YIELD AND VOLATILITY CHARACTERISTICS OF GLOBAL BONDS**




Source: WIND, Bloomberg; data as of September 30, 2021.

**CORPORATE BONDS**: Reforms in this market, such as the government providing fewer implicit guarantees to state-owned enterprises, should translate over time into more efficient pricing of risk. That should lead to higher default rates, tipping the mix of bonds near the end of our forecast horizon toward higher quality companies and spread compression. The next few years should be particularly volatile as reforms are rolled out.

## Equities

Our 2022 long-term assumptions for China A-share returns rise to 6.6% in local currency terms and 8.2% in USD terms, up from 6.3% and 7.5%, respectively, last year. These are considerably higher than our developed market equity return assumptions. The many structural changes discussed here, however, should net out to a minimal impact on A-share index returns due to the following considerations in our forecasting:

We forecast a higher A-share target equilibrium P/E level vs. the post-global financial crisis average, primarily because of our expectations for significant international and domestic investor flows.

The shift in China's equity index composition toward new economy sectors leads us to raise the target margin.[12] Yet we see some offsetting effects. The Chinese government's recent regulatory actions have clearly demonstrated a strong resolve to focus on social and environmental issues. But the impact on China A shares may be milder than the impact on the broader MSCI China Index, which seems to have a larger concentration of stocks in sectors thought most likely to experience actions.

The flip side of China's financial market deepening is a larger net dilution effect as more companies turn to equity markets as a source of direct financing (EXHIBIT 4).

## Private equity/venture capital

This private market has outperformed public markets in China over the past 15 years, with pooled time-weighted returns of 19% topping the MSCI China Index by 889bps. Manager selection has been crucial: Median net internal rate of return (IRR) was 16%, but top-quartile funds delivered 29% while bottom-quartile funds returned only 8% in the same period. In a global context, China's past median PE/VC IRR has been fairly in line with other regions.[13]

[12] For more on how changing sector mix has influenced multiple and margin assumptions in other markets: "Equity Assumptions: Better through-cycle returns, challenging starting point," *2022 Long-Term Capital Market Assumptions*, J.P. Morgan Asset Management, November 2021.

[13] IRR and time-weighted returns: Burgiss, September 30, 2021; includes PE and VC across Greater China. Over 15 years, median IRR was 13.1% for the U.S. and 11.2% for Europe.

However, it is tough to forecast a sustainably higher median IRR vs. global peers, given that policymakers are seeking to rebalance efficiency and equality in the economy, and because China's PE/VC-backed companies compete with state-backed entities. China-focused PE/VC should nonetheless continue to be appealing to foreign investors to deploy accumulated dry powder. We expect China's private markets to continue beating public ones, for venture capital to remain the dominant strategy and for the pool of managers to improve in quality.

Throughout, manager selection should remain a key variable: As China's economic growth rate likely continues a structural decline, investors will need to apply management know-how to the capital deployed and focus on those new economy sectors that enjoy policy support.

### Real estate

China real estate returns data is spotty and varies significantly by sector and location. We think the days of double-digit returns in residential and commercial real estate are over, with returns already on a downward trend over the past five years compared with the previous five. Looking forward, as certain areas of commercial real estate aligned with FYP priorities receive more support, they should deliver better returns relative to other sectors, through both higher yields and their potential for moderate capital appreciation.

Residential for-sale properties will likely continue to face regulatory scrutiny. On the other hand, private sector residential rental housing and the multi-family sector may benefit, as the Chinese government is expected to continue with policies to bolster affordable housing for lower income citizens and those migrating into new cities seeking job opportunities. Senior care housing will be on the receiving end of policies to meet the demands of China's aging urban population. These areas of development are still early-stage but worth watching in the long run.

REITs in China currently have an average yield of 6.1% (ranging from 4.2% to 11.5%)[14] – a bit higher than other Asian markets. As China's REITs market develops, the average yield should decrease as the sector mix shifts away from higher yielding sectors and public sponsors. Returns may also be boosted by capital appreciation and rerating if properties are efficiently run.

### The renminbi

The RMB should appreciate during our forecast horizon as a result of ongoing efforts to improve its convertibility; higher foreign investor inflows; China's likely continuing growth advantage vs. developed markets; and the RMB's undervaluation on a purchasing power parity (PPP) basis. As the RMB becomes more freely convertible and widely used, it should converge toward its fair PPP value. We forecast an equilibrium USD/CNY level of 5.29, implying an annual appreciation of 1.6% vs. the USD.

## HOW DO THESE STRUCTURAL CHANGES IMPACT OUR CHINESE MARKET VOLATILITY ASSUMPTIONS?

### Equities

We expect onshore equities' high volatility to fall over the next 10 to 15 years as institutional investors' share of total holdings and volume gradually increases. A shares' volatility should approach that of other major EM equity markets toward the end of our forecast horizon, with the potential for policy-induced volatility along the way.

### Fixed income

CGBs' volatility, currently lower than other EM government bonds (**EXHIBIT 5**), could pick up slightly, to levels comparable with major developed market government bonds. We expect this outcome as an interest rate-led monetary policy framework ramps up, and also due to more active trading by asset managers on- and offshore.

### RMB

The RMB's volatility is currently lower than most EM currencies'; this differential is likely to narrow as a more flexible FX regime evolves. But we believe the RMB's lower volatility than other EM currencies vs. the U.S. dollar, and vs. a basket of trading partner currencies, is likely to persist, as China's capital account liberalization is likely to be a gradual process. For investors with the flexibility, an unhedged allocation to China is worth considering, given our forecast for RMB appreciation in the coming years.

[14] Bloomberg, as of July 31, 2021.

# IMPLICATIONS FOR PORTFOLIO CONSTRUCTION: THE CASE FOR A STRATEGIC ALLOCATION TO CHINA

What makes an appropriate China allocation within a portfolio? It depends on an investor's risk and return objectives. In practice, investors may also be constrained by implementation restrictions, regulatory risks and macro policy uncertainty. We believe that as China's onshore markets remain complex and volatile, active management will be key to help navigate the challenges.

## Diversification

Chinese onshore equities and government bonds have historically shown low correlations with global assets, offering global investors potential diversification opportunities when they add them to a portfolio. Correlations will likely rise as foreign investor participation rises; however, we believe it will remain below that of developed market assets, given China's distinct economic and policy cycles.

Onshore equities, and unhedged CGBs in USD terms, have higher volatility than global equities and bonds.[15] But under our 2022 return and volatility assumptions, correlations between Chinese and global assets are unlikely to rise high enough to negate the diversification opportunities of adding Chinese assets to a global portfolio.[16] Adding both Chinese onshore equity and government bonds offers additional diversification benefits, as they have a low correlation (0.08) with each other. Moreover, stock-bond correlations were negative during periods of market stress, such as March 2020, suggesting Chinese government bonds act as a hedge for Chinese equities during those periods.

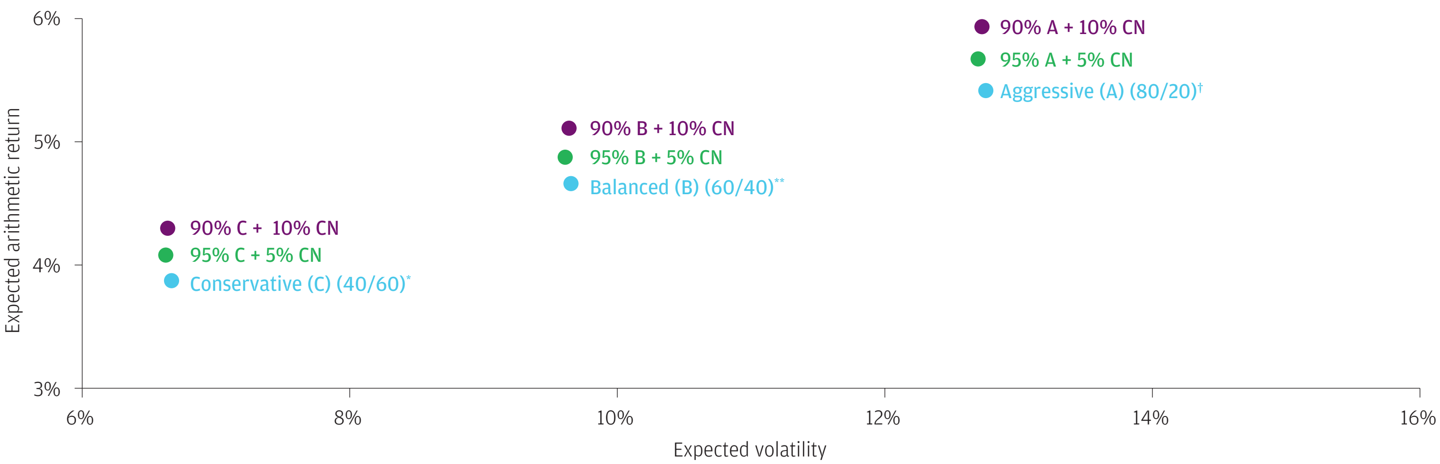
## Case study: Allocating to onshore Chinese equities and CGBs can improve risk-adjusted returns

A hypothetical case study illustrates how investors with different risk-return objectives can potentially improve a traditional global stock-bond portfolio with a diversified allocation to Chinese onshore equities and government bonds.

We start with three multi-asset portfolios with different stock-bond allocations: conservative (40/60), balanced (60/40) and aggressive (80/20). Next, for each portfolio we reallocate 5% and 10% of capital from global equities and bonds to Chinese onshore equities and government bonds, in line with their risk preference. In each case, incorporating Chinese onshore equities and government bonds improves the portfolio's risk-adjusted return (**EXHIBIT 6**).[17]

**Incorporating Chinese onshore equities and government bonds improves hypothetical portfolios' risk-adjusted returns**

**EXHIBIT 6: VOLATILITY AND RETURN CHANGE, 3 HYPOTHETICAL PORTFOLIOS BEFORE AND AFTER ALLOCATING TO DIVERSIFIED ONSHORE CHINESE STOCKS, BONDS**




Source: J.P. Morgan Asset Management; data as of September 30, 2021.

Portfolio expected returns and volatilities are mapped via asset classes available in 2022 LTCMAs, USD version. CN: Chinese assets, which are China A shares and CGBs. Stocks and bonds before reallocation: Global equities are MSCI AC World Equity (WE) index; global bonds are Global Aggregate Bonds index.

* Conservative: 40% MSCI AC World Equity, 60% Global Agg. *95% C + 5% CN*: 38% MSCI ACWI, 57% Global Agg, 2% China A, 3% CGBs. *90% C + 10% CN*: 36% MSCI ACWI, 54% Global Agg, 4% China A, 6% CGBs.

** Balanced: 60% MSCI AC WE, 40% Global Agg. *95% B + 5% CN*: 57% MSCI ACWI, 38% Global Agg, 3% China A, 2% CGBs. *90% B + 10% CN*: 54% MSCI ACWI, 36% Global Agg, 6% China A, 4% CGBs.

† Aggressive: 80% MSCI AC WE, 20% Global Agg. *95% A + 5% CN*: 76% MSCI ACWI, 19% Global Agg, 4% China A, 1% CGBs. *90% A + 10% CN*: 72% MSCI ACWI, 18% Global Agg, 8% China A, 2% CGBs.

[15] The analysis uses the 10-year CGB *unhedged in USD terms*, which has a higher volatility than Global Agg bonds hedged in USD terms under our 2022 LTCMA assumptions. However, if the CGB was in local currency terms, volatility would be lower.

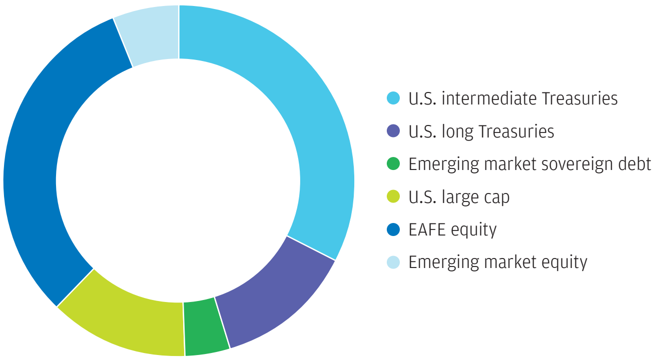
[16] Our assumptions show correlation must rise above 0.95 for the diversification benefit of adding onshore China equities to an MSCI ACWI portfolio to disappear. In fixed income, the diversification opportunities of adding the 10-year CGB unhedged in USD terms to a Global Agg portfolio hold when their correlation rises to 1.

[17] In this case study, we included only Chinese public assets, but investors should also consider how Chinese private assets can complement private allocations in other regions.

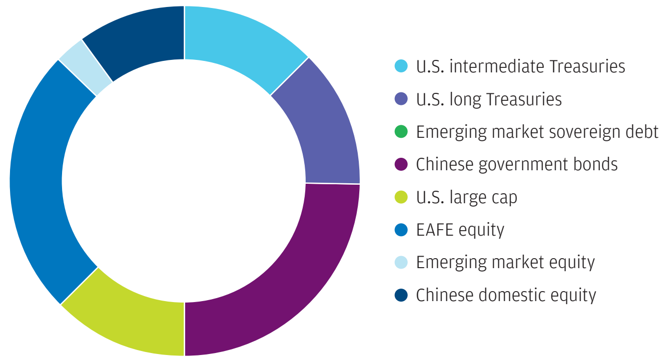
**An optimized global multi-asset portfolio can potentially enhance its risk-adjusted return with onshore Chinese assets**

**EXHIBIT 7: ASSET ALLOCATION OF MEDIUM RISK PORTFOLIO USING MEAN-VARIANCE FRAMEWORK WITH AND WITHOUT CHINESE ONSHORE ASSETS**

Medium risk portfolio (8% vol with expected return of 4.8%)




Medium risk portfolio with Chinese assets (8% vol with expected return of 5.8%)




Source: J.P. Morgan Asset Management; data as of September 30, 2021. For illustrative purposes only.

We define a medium risk portfolio as a risk equivalent of 50% equity/50% bonds. To ensure sufficient diversification, we impose minimal exposures within equities (e.g., minimum U.S. equities weight is 25% of total equity weight) and bonds (e.g., U.S. government bonds allocation is 50% of total fixed income).

## Asset allocation using a mean-variance framework

How, specifically, might Chinese onshore equities and government bonds reshape a global multi-asset portfolio? Using a mean-variance framework, our analysis shows that an optimized portfolio with onshore Chinese assets can potentially enhance the risk-adjusted return (**EXHIBIT 7**).

In a medium risk portfolio, our analysis suggests that an allocation to Chinese government bonds should be funded mainly from U.S. intermediate Treasuries. An equity allocation would likely best be funded from Europe, Australasia and Middle East (EAFE) and emerging market equities.

However, it is important to note that there is no universal advice on the appropriate China allocation. It very much depends on each investor's risk and return objectives.

## CHINESE ASSETS: BECOMING MORE MAINSTREAM IN GLOBAL PORTFOLIOS

Despite the growing size of Chinese public and private markets, and their expanded weight in indices, global investors remain underinvested. We've scanned the key structural changes over the next decade that should profoundly impact Chinese asset returns, volatility and correlations: rising participation by overseas and domestic institutional investors; a tilt to new economy sectors. These themes underlie our return forecasts for Chinese public assets, which are higher than those for developed markets over the next 10 to 15 years.

Yet the variability around our China forecasts is high, too. A lot can change quickly in China. Investors should be mindful of the challenges, which constrain somewhat the practical implementation of an optimal China allocation. Among the key factors that could affect our long-term assumptions for Chinese assets: the pace of structural reforms, policies seeking to rebalance efficiency and equality in the economy, liquidity and the external environment.

Progress likely won't be linear, and not every change will net out to a positive impact for investors. Yet we find that when investors add Chinese onshore equities and government bonds to a global stock-bond portfolio (we expect over time that China will become a stand-alone allocation, not one made within emerging markets),[18] they potentially stand to benefit from superior risk-adjusted returns as a result of the diversification opportunities. In particular, we believe China A shares may become a bigger area of growth within portfolios, compared to offshore Chinese equites, as investors seek the sectors likely to be at the forefront of China's future growth, as well as A shares' singular diversification opportunity.

Lastly, investors should increasingly focus on alpha as a key source of returns. For some of the many reasons related to sustainability, see the box, **CHINA'S ESG OUTLOOK: WHAT MATTERS**.

[18] There are many reasons for this, including the market indices' new economy tilt, government bonds' lower volatility vs. EM peers and China's phase of economic development; for a detailed examination of the last point, see Michael Hood, Patrik Schöwitz, Sylvia Sheng et al., "The Next Phase of China's Growth: China's path to becoming a higher income country," *2021 Long-Term Capital Market Assumptions*, J.P. Morgan Asset Management, November 2020.

## CHINA'S ESG OUTLOOK: WHAT MATTERS

As the "world's factory" and the most populous country on earth, China will not be able to escape increasing scrutiny of its environmental, social and governance (ESG) practices by regulators and global investors. While China is perceived as starting from a low base in ESG standards and disclosure, it's traveling in a positive direction. The central government's latest Five-Year Plan focuses on environmental and social responsibility, prioritizing "quality development" and "common prosperity." Meanwhile, China aims to become a major player in the fast-growing area of sustainable investing – which should open diversification opportunities for ESG-focused investors.

Here are three noteworthy areas of change:

### 1. ESG DISCLOSURES ARE ON THE RISE, AS IS SUSTAINABLE INVESTING

Chinese regulators, such as the China Securities Regulatory Commission, are focused on raising ESG information reporting requirements for companies listed onshore. The Shenzhen and Shanghai stock exchanges don't yet require all listed companies to publish ESG reports, but certain sectors – for example, thermal power generation, steel, cement, aluminum and mineral production – already must disclose environmental impact information.

While environmental disclosure has been voluntary for other sectors, it is increasingly widespread, and rates of voluntary disclosure improved after China's inclusion in global stock and bond indices.

Moving from environmental to ESG disclosure overall, in 2020, 86% of China Securities Index (CSI) 300 companies issued ESG reports, up from 49% in 2010, and we expect still more corporations to begin providing ESG disclosure, allowing investors a better understanding of the financial impacts arising from the government's new climate and decarbonization policies, and helping investors assess companies' readiness for the changes ahead.

Incorporating ESG considerations into investing and management is on the rise among local asset managers and owners: The number of signatories to the U.N. Principles for Responsible Investment was 73 at publishing time, up from single digits in 2012.[*] Though still a small part of the USD 2 trillion global ESG funds market, assets under management by China's ESG funds have more than doubled since 2019, to USD 12 billion; green and climate-related funds have garnered the most attention, drawing 86% of China's total ESG fund flows in 2020.[**]

To finance its climate and social change ambitions, China has become a major issuer of green and sustainable bonds, with USD 150 billion issued since 2014. China is now responsible for 12% of global green bond issuance, up from less than 1% in 2014, making it the world's third-largest green bond issuer.[†] In 2020, China also made a remarkable entry into the social bond market with a USD 69 billion bond sale (earmarked for "employment generation ... financing and microfinance"), so that China now accounts for 15% of the total social bond market worldwide. Existing international standards, such as the Green Bond Principles, Climate Bonds Standard and Social Bond Principles, are also widely adopted by issuers in China.

### 2. CHINA'S DECARBONIZATION AMBITIONS HAVE NEAR-TERM IMPACTS

China's goal of reaching peak emissions by 2030 and carbon neutrality by 2060 requires it to reduce $CO_2$ emissions intensity per unit of GDP in several ways: by putting a price on carbon; by decreasing the share of fossil fuels in primary energy consumption;[††] and by structurally changing the nation's energy mix. Even in the near term, Chinese companies will feel the impact as the policies are enacted to achieve these targets.[Δ]

* "Signatory directory," Principles for Responsible Investment, United Nations.

** ESG funds encompass ESG, socially responsible and environmentally friendly funds identified by Bloomberg. AUM data: Bloomberg, March 31, 2021.

† Climate Bonds Initiative, June 2021.

†† Primary energy refers to energy consumption before losses due to thermal conversion, power plant use and transmission.

Δ We focus here on China's policies to reach its stated emissions goals over the next few decades. The point of departure is challenging: As of 2018, coal represented 59% of China's primary energy and China contributed 28% of global $CO_2$ emissions that year. In the short term, to meet demand and support economic growth China may continue to build coal-powered capacity (in 2020, three times more new coal capacity was built in China than in the rest of the world combined).

CONTINUED OVER ➔

China's new emissions trading system (ETS) is already the world's largest. It covers power plants responsible for over 40% of the country's $CO_2$ emissions from fossil fuel.[†††] However, that won't likely be sufficient, in light of the European Union's carbon border adjustment mechanism.[‡] China's ETS initially covers only the power sector, and China's carbon price, USD 8 per ton of $CO_2$, is far lower than Europe's USD 63 per ton. That gap, if not closed before 2023, will have to be paid for by Chinese steel, cement and aluminum manufacturers if they want to sell into Europe.

The industrial sector accounts for 65% of China's energy consumption. To mitigate the coming shock to the sector's margins during China's long transformation away from heavy industry, increasing energy efficiency and electrification will be key. The government's goal is increasing electrification across the industrial, building and transportation sectors, to 30% of energy use in 2030 and 70% in 2050.[‡‡]

While electrification can help reduce emissions in sectors where carbon intensity is hard to abate, a shift on the supply side from coal to renewable energy sources is needed imminently. China needs to generate at least 25% of its energy from nonfossil fuel sources by 2025 to achieve its carbon neutrality goals.[‡‡‡] Wind, solar, biomass and hydrogen are considered crucial to getting there.[◊]

### 3. LEADERS WILL BE SEEKING TO FULFILL BOTH SOCIAL AND ECONOMIC RESPONSIBILITIES

After decades of exponential growth and lifting millions from poverty, China now faces the challenge of balancing further growth with security, referred to as the goals of "common prosperity" and "quality development." Setting aside formidable environmental risks for a moment, income inequality in China increasingly poses a risk to society. The urban-rural income gap continues to widen. The share of national income going to the top tenth of the population, 42%, dwarfs the 15% share going to the bottom-earning half.[◊◊]

As policymakers rebalance efficiency and equality in the economy, sectors such as internet, education, health care and real estate will likely face regulatory changes. China will also seek to promote "social" sectors able to enhance welfare, which should benefit industries such as biotech (for reasons of public health), cybersecurity (for consumer data protection) and insurance (for broadening financial access). Joining this preferred set may be companies that can demonstrate better management of corporate governance, environmental issues and human capital.

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††† "China National ETS," International Carbon Action Partnership, August 9, 2021.

‡ This import tariff is designed to ensure that the environmental footprint of a product is priced the same whether it is manufactured locally or imported.

‡‡ "China's Long-Term Low Carbon Development Strategy and Pathway: A comprehensive report," *China Population, Resources and Environment* 30, no. 11, 2020.

‡‡‡ Lauri Myllyvirta,"How to tell a strong Chinese Five-Year Plan from a weak one?" Center for Research on Energy and Clean Air, October 29, 2020.

◊ Based on the 14th Five-Year Plan, which commits to accelerating wind and solar and investing in hydrogen to meet targets; based on current renewables capacity, all will need to be built out to hit a 25% target.

◊◊ Thomas Piketty, Li Yang and Gabriel Zucman, "Capital Accumulation, Private Property and Rising Inequality in China, 1970–2015," *American Economic Review* 109, July 2019. Compared to other emerging market countries globally, China's measures of inequality – such as the share of national income going to the top 10% or the Gini coefficient – fall in the middle of the pack. However, inequality is higher than in several developed countries, for example in Europe.

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