

Research

Embracing China's economic shift through the Total China Concept

FTSE
Russell

2018 | ftserussell.com



Introduction

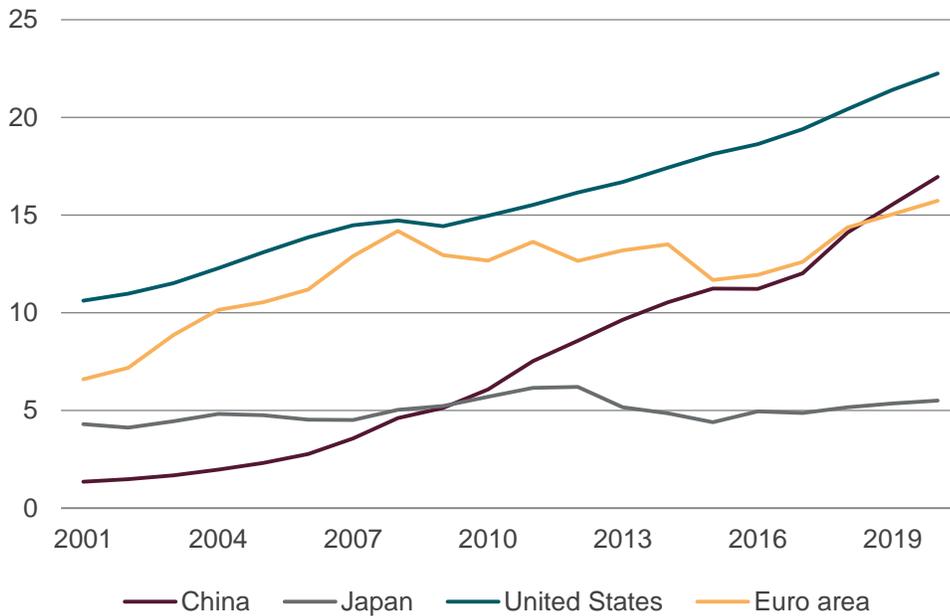
- The China equity market landscape has changed dramatically since FTSE Russell became the first international index provider to launch mainland indexes back in 2001.
- The number of Chinese listings domestically and abroad has grown rapidly as has its share of emerging market equity portfolios.
- The problem for international investors is that historically the majority of them have only been able to access China via Hong Kong and overseas listings.
- As the mainland China equity market continues to open to overseas investment the ability for international investors to gain access to this large and growing market has become easier.
- Therefore, the questions for international investors are whether they need to include China A shares in their existing China portfolios, and what to do with their existing holdings of overseas China?
- This paper highlights that to gain a complete exposure to China equities investors need to diversify across all the different China shares classes.
- The total China concept provides a mechanism to gain access to Chinese listed equities globally and to have diversified sector representation as China continues its development path towards value added manufacturing, and a consumer and service-based economy.

China's giant steps: addressing the current phase of its economic development

In 2010, China set a target to double GDP in the decade to 2020. As shown in Exhibit 1, from 2010 to 2016, the GDP of China expanded from USD 6.1 to 11.2 trillion. It is now the second largest economy in the world after the US on a nominal GDP basis.¹ The rapid expansion has been driven by export orientated policies. For decades the country benefited as the manufacturing hub of the developed world as global companies took advantage of lower labor costs. The build-up of production capacity led to significant trade growth and resulted in one of the largest worker migration transfers—from the country side to the cities—in recent history.

¹ Source: Worldbank.org end of December 2016.

Exhibit 1: China's rapid economic expansion: Nominal GDP (USD trillion)



Source: IMF, data as of April 2018. Forecasted data is used from 2017.

China is in the process of shifting its economic policies from export oriented to service- and consumption-driven. A few examples of the recent established policies and reforms that support the transition are:

- **“Made in China 2025”** – a strategic plan issued by Premier Li in May 2015 to move China up the manufacturing value chain by focusing on 10 strategic industries.²
- **“SOE and Supply Side Reforms”** – during the 19th Party Congress (October 2017) it was reemphasized that improving the competitiveness of State Owned Enterprises (SOEs) and dealing with excess capacity in the Industrials and Basic Material industries will continue to be key focus areas for policymakers.³
- **“Encourage Entrepreneurial Spirit”** – policymakers released guidelines in September 2017 to encourage entrepreneurship. The government has vowed to protect Intellectual Property Rights and to further ensure fair competition.⁴

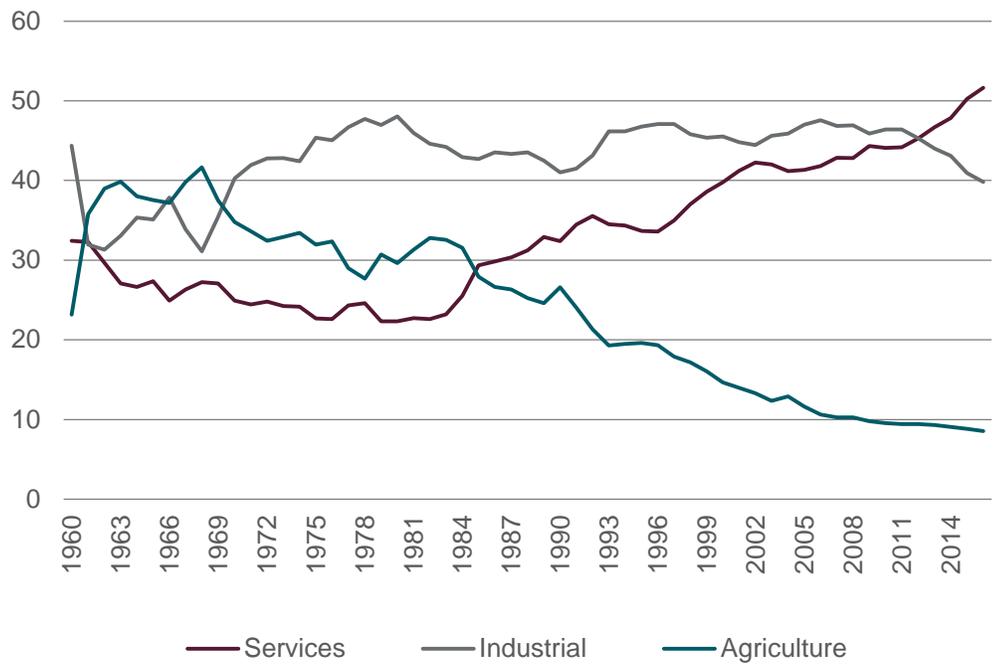
The transition is evident in the industry breakdown of China's GDP as shown by Exhibit 2. The economic dependency on heavy industries is diminishing and being overtaken by services as living standards improve and salaries increase.

² Source: CSIS, Center for Strategic & International Studies, <https://www.csis.org/analysis/made-china-2025>

³ Source: PWC Hong Kong November 2017, <https://www.pwchk.com/en/research-and-insights/publications/china-s-19th-party-congress/business-review-of-china-s-19th-party-congress.pdf>

⁴ Source: The State Council, The People's Republic of China, September 2017, http://english.gov.cn/policies/latest_releases/2017/09/25/content_281475884052944.htm

Exhibit 2: A new service-based economy emerges from mid-2000s: China GDP by Industry (%)



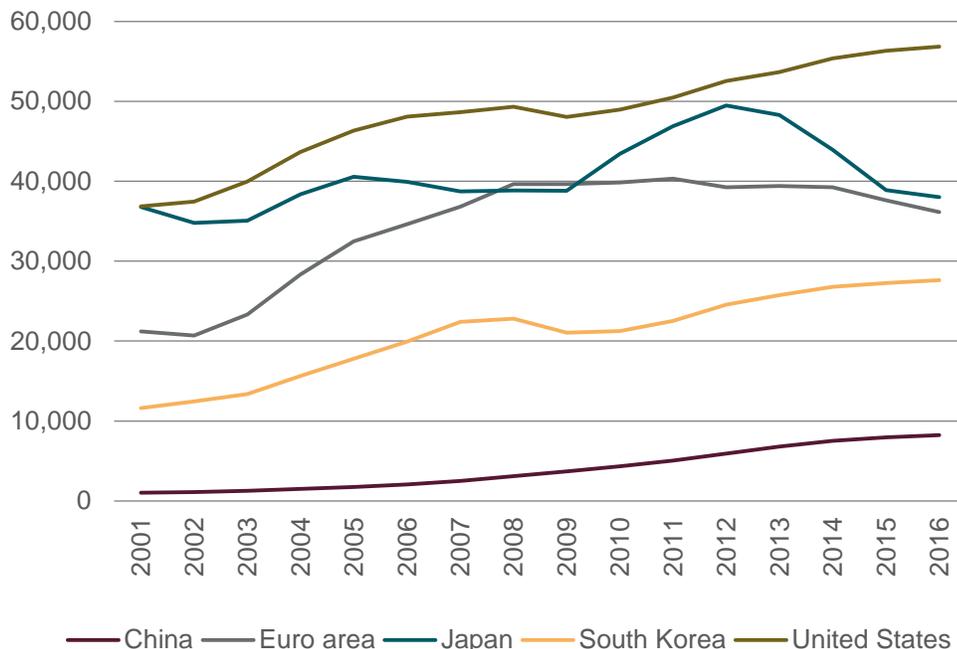
Source: Worldbank.org, data as of December 30, 2016.

As the shift in economic policy continues, consumer spending will be of greater importance for further GDP growth. China has the ambition of becoming a high-income economy, from a moderate-income level as defined by the World Bank. The gross national income (GNI) per capita has quadrupled since the mid-1990's to USD 8,259 but is still only 11% of the GNI per capita of the largest economy in the world, the USA. The threshold for high-income status was USD 12,476 in 2016 according to the World Bank.⁵ Exhibit 3 indicates that the GNI per capita growth for China has slowed in pace over the last couple of years. The ambition of becoming a high-income economy is dependent on the transition of the country to a more services-oriented and consumer based economy. Moving up the manufacturing value chain is also of importance as larger profit margins can boost the domestic manufacturers.⁶

⁵ Source: <https://blogs.worldbank.org/opendata/new-country-classifications-2016>

⁶ Source: IMF October 2013, "Enhancing China's Medium-Term Growth Prospects: The Path to a High-Income Economy", <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Enhancing-Chinas-Medium-Term-Growth-Prospects-The-Path-to-a-High-Income-Economy-40977>

Exhibit 3: China playing catch-up: GNI per capita, Atlas method (USD)



Source: Worldbank.org, data as of December 30, 2016.

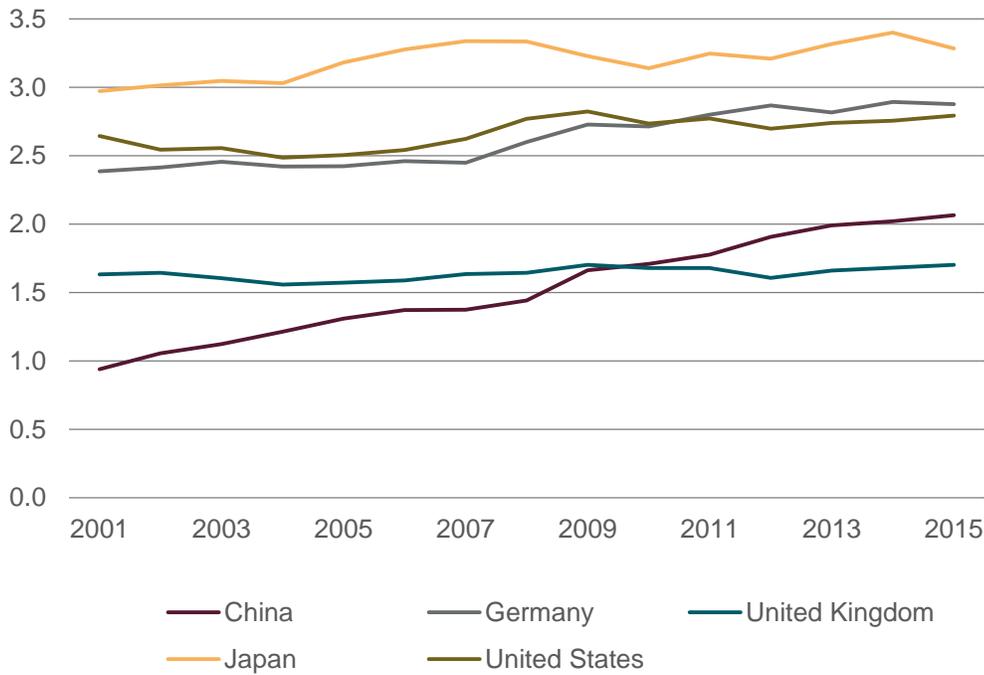
Although China has one the largest middle-class populations in the world, on a relative basis only 6% of the urban population was classified as upper middle-class in 2010. The McKinsey Global Institute has forecasted that the number will grow to 51% by 2020.⁷ With an increase in wealth among the population in China it is prudent to assume that consumer habits will change and discretionary spending will increase in tandem with the new wealth.

The transition of the economy needs to be supported by innovation. Using R&D spending (% of GDP) as a measurement for innovation, Exhibit 4 illustrates that only the US, Japan and Germany rank higher than China. The policymaker’s plan of turning China into a “great modern socialist country” by 2049 requires three main investment pillars—innovation and new technology, reducing inequality and increasing green development.⁸

⁷ Source: McKinsey Insights China: Meet the 2020 Chinese Consumer, <https://www.mckinsey.com/~media/mckinsey/global%20themes/asia%20pacific/meet%20the%20chinese%20consumer%20of%202020/mckinseyinsightschina%20meetthe2020chineseconsumer.ashx>

⁸ Source: PWC Hong Kong November 2017, <https://www.pwchk.com/en/research-and-insights/publications/china-s-19th-party-congress/business-review-of-china-s-19th-party-congress.pdf>

Exhibit 4: Increasing the budget for innovation: R&D spending (% of GDP)



Source: Worldbank.org, data as of December 31, 2015.

China is still a global leader in manufacturing but is shifting from low to high-value added manufacturing. China has emerged as the global leader in automation with the highest stock of industrial robots in the world. From 2009 to 2016, the average yearly growth in the supply of industrial robots in China was 20% - 25%. In 2016 China consumed 30% of the world's total supply of robots. Despite the domestic demand, foreign robot manufacturers are responsible for 70% of the sales of robots to China. Increased automation is a clear sign of an increase in the sophistication of China's manufacturing industry.⁹

The robotics industry is part of 10 strategic industries outlined in the "Made in China 2025" plan. Besides robotics, examples of other strategic industries are: information technology (IT) and new-energy vehicles and equipment. The growth of the IT industry hasn't gone unnoticed as the largest company listed in Asia is Tencent with a market capitalization of USD 492 billion.¹⁰ Maybe less known is that China is the largest market for plug-in electrical vehicles, in 2016 China represented 49.5% of global sales.¹¹

⁹ Source: IFR.org December 2016, https://ifr.org/downloads/press/Executive_Summary_WR_2017_Industrial_Robots.pdf

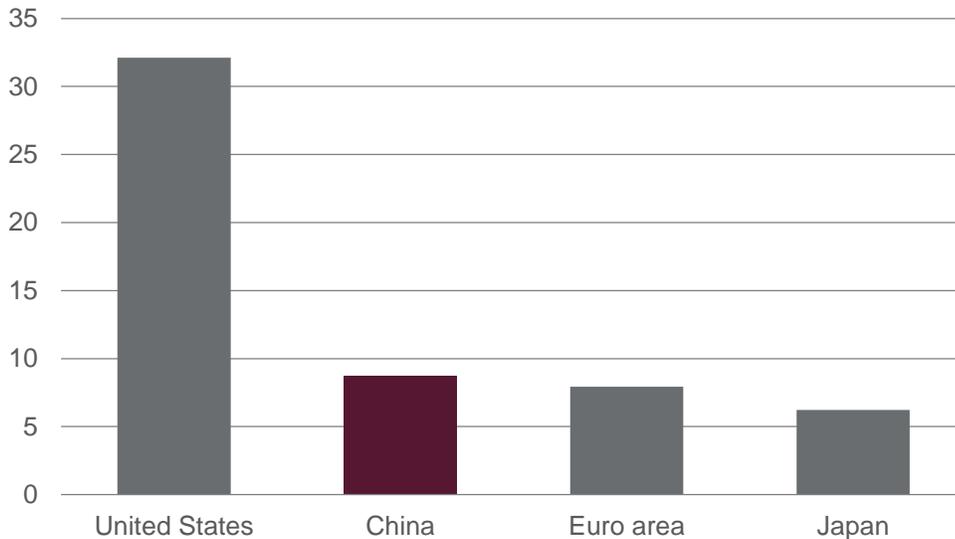
¹⁰ Source: FTSE Russell end of December 2017

¹¹ Source: EVvolumes.com end of December 2016, <http://www.ev-volumes.com/country/total-world-plug-in-vehicle-volumes/>

The untapped domestic Chinese equity market

China's domestic equity market has become the second largest in world with a market capitalization of around USD 9 trillion¹², as highlighted in Exhibit 5. However, international investors historically have only had access to a small proportion of this market. Using the current access points of Qualified Foreign Institutional Investors (QFII), Renminbi Qualified Foreign Institutional Investor (RQFII) and the Stock Connect programs international investors represent only 2.3%¹³ of the mainland equity market.

Exhibit 5: Market-capitalization of domestic listed companies in 2017 (USD trillion)



Source: Worldbank.org, data as of December 29, 2017.

This lack of access to mainland equities is reflected in the US ETF market. Of the top 10 largest China equity ETFs, the majority track off-shore listed Chinese companies which are often large-cap focused—resembling satellite exposures in a global equity portfolio—or thematic. The AUM of China equity ETFs represents only 0.8% of total equity ETF AUM listed in the US (USD 2.3 trillion).¹⁴

Between 2007 and 2017, a total of USD 149 billion of net assets flowed into (diversified) emerging markets equity ETFs globally. By contrast, only USD 9 billion flowed into China equity ETFs, despite the strong performance of Chinese equities over that period.¹⁵ As China represents a large part of diversified emerging market exposure, investors have still increased their exposure to China. For example, the world's largest listed emerging market ETF with an AUM of USD 66.7 billion—which tracks the FTSE Emerging Markets All Cap A Inclusion Index—gathered USD 58.7 billion in net assets between 2007 and 2017.¹⁶ China represents 32.6% of the index weight, of which China A Shares accounts for 4.9% (or 15.1% of China).¹⁷

¹² Source: Worldbank.org end of December 2017

¹³ Source: FTSE Russell, data as of March 29, 2018

¹⁴ Source: ETF.com April 2018

¹⁵ Source: Morningstar end of December 2017

¹⁶ Source: Bloomberg end of December 2017

¹⁷ Source: FTSE Russell end of December 2017

Chinese equity markets: a mirror of the transformed China

New industries in China are gradually displacing older ones. With the growth of high-end industries, lifestyle changes due to increased income and investment in innovation, there has been a clear industry rotation from the industries that historically were the main drivers of GDP growth. Consumer-related and healthcare industries are gaining importance as the income of the Chinese consumer increases. Financials remain the most dominant industry but it has started to lose market share over the last 10 years. Over the same period, Technology has been seen as one of the fastest growing industries.

Not only are the macro-economic developments important to understand, but so is the history and the regulatory developments around each of the different share classes. As China continues to open its financial markets to international investors it will become increasingly important for investors to understand the profile of each to make informed decisions around their China equity allocations. Therefore, the questions for international investors are: Not if, but when do they need to review their current China portfolios in the light of the opening of the mainland Chinese equity market? Do investors have a diversified representation of the Chinese economy? Do their existing allocations support changes in accessibility of the China share classes and its future economic shift? The next part of this paper provides an overview of the current access points of China's equity landscape and aims to shine a guiding light over its complexities.

The China equity opportunity set – an alphabet puzzle?

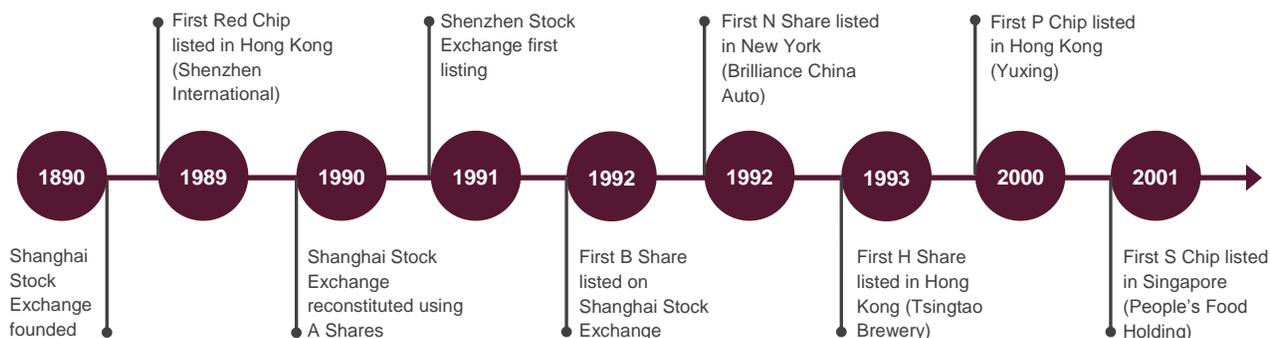
While no one questions the importance that China has to global markets given its economic achievements, getting a meaningful and desired exposure to China is not straightforward from an equity investor's perspective. On one hand, Chinese companies actually have a range of potential incorporation and listing choices, both domestically and globally. As a result, it is not surprising for people to get confused by the different Chinese share classes, such as A Shares, B Shares, H Shares, N Shares, Red Chips, P Chips, S Chips and even more. On the other hand, although investors can gain exposure to China through overseas listings, the domestic stock markets account for the majority of the China equity opportunity set. The China Securities Regulatory Commission (CSRC) and State Administration of Foreign Exchange (SAFE) have over the last decade accelerated the pace of reform and increasingly opened the domestic stock markets to global investors.

This section provides an explanation of the share class puzzle by looking into their development history, breadth and depth of listings, their interactions and possible future evolution. More importantly, it aims to discuss the implications of a holistic exposure to China by incorporating different share classes into a single total China index.

Chinese firms incorporated in mainland China could apply for listing as A Shares and/or B Shares on the Shanghai Stock Exchange (SSE) or Shenzhen Stock Exchange (SZSE), or H Shares on the Hong Kong Stock Exchange (HKEX). For various reasons, such as strict listing requirements on historical profitability and long queues for A Share IPOs, many Chinese firms have chosen to incorporate outside of

mainland China, typically in the Cayman Islands, Bermuda, British Virgin Islands or Hong Kong. This provides companies a choice of listing on the HKEX as Red Chips or P Chips, on the New York Stock Exchange (NYSE), NASDAQ Exchange, or NYSE MKT as N Shares, or on the Singapore Exchange (SGX) as S Chips, among other rarer cases. Exhibit 6 shows the development timeline of Chinese share classes.

Exhibit 6: Development timeline of Chinese share classes



Source: FTSE Russell.

A Shares – the first China domestic equity listings

While the history of China's stock market can be traced back to 1890, its modern stock market equivalent opened a century later, with the re-establishment of the SSE and the closely followed establishment of the SZSE in 1990. This modern-day stock market was created to serve as a platform for the partial privatization of China's SOEs. For this purpose the Renminbi denominated A Shares were made available to domestic investors, although on average providing less than one third of a company's total share capital.

Over the years the A Shares market has evolved dramatically following a series of reforms and developments. The Split-Share Structure Reform of 2005 unlocked a significant number of non-tradable shares held by government and quasi-government entities, which resulted in improvements in liquidity and the overall pricing mechanism of the stock market. As positive steps towards opening China's equity markets, A Shares were made available to selected international investors through the QFII scheme launched in 2002 and the RQFII scheme launched in 2011. Its accessibility for international investors has been further improved with the Shanghai-Hong Kong Stock Connect program launched in 2014 and the Shenzhen-Hong Kong Stock Connect program launched in 2016.

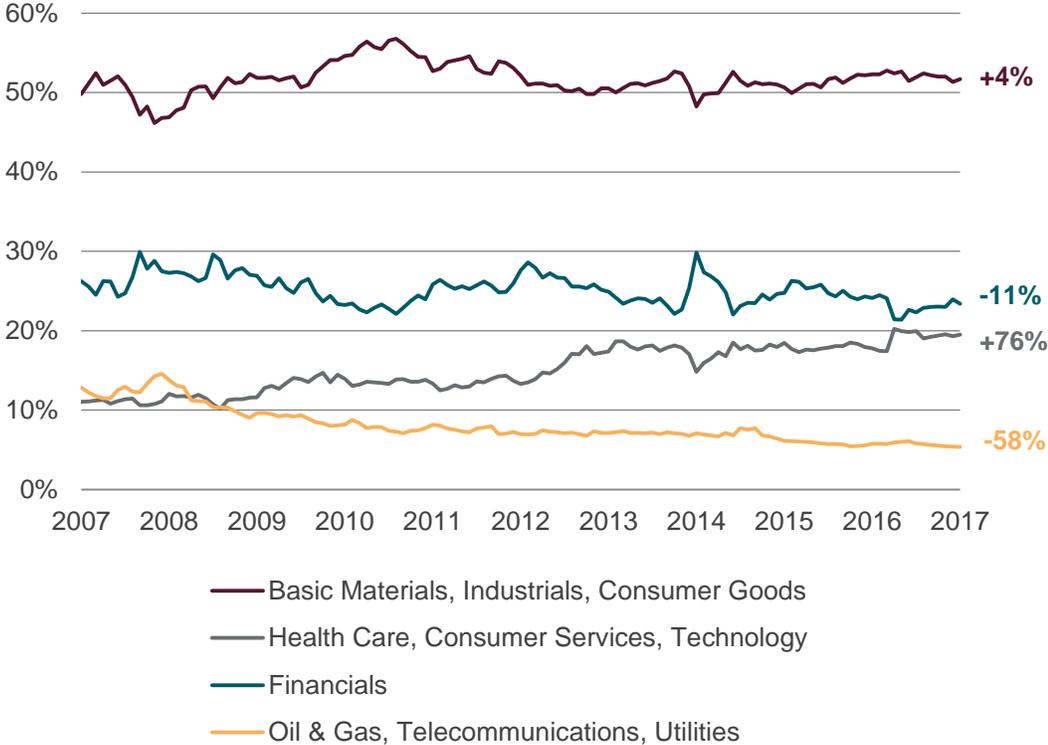
These efforts have greatly increased the breadth and depth of the A Shares market. At the end of 2017 there were 3,500 companies listed on the two exchanges with a combined market capitalization around USD 9 trillion.¹⁸ This makes the A Shares market the second largest equity market in the world. Higher valuations and a low cost of listing makes it the preferred IPO choice for Chinese firms, although listing registration is still tightly governed by the CSRC. At the end of 2017 there were over 500 companies waiting for listing approval by the CSRC.¹⁹

¹⁸ Source: FTSE Russell

¹⁹ Source: CSRC

The A Shares market offers investors a rich and diverse opportunity set in terms of industry representation. Using the FTSE China A All Cap Index as a measure of the market, the largest industry is Financials, although its weight is below 25%.²⁰ Historically, the weight of the traditional industries of Basic Materials, Industrials and Consumer Goods has been high, with a combined weight of over 50%, but this has started to fall in recent years with the increase in new economy industries, such as Health Care, Consumer Services and Technology, with a combined weight of close to 20% as shown in Exhibit 7.²¹ The A Shares equity market has limited exposure to Oil & Gas, Utilities and Telecommunications, to a large extent due to a higher level of state ownership as they are deemed as strategically important sectors, with the latter seeing a greater number of listings outside of mainland China in Red Chip and H Share form.

Exhibit 7: The growth & decline in weight of industries in the China A Shares market



Source: FTSE Russell, data from December 31, 2007 to December 29, 2017. China A shares are represented by the FTSE China A All Cap Index. Past performance is no guarantee of future results. Returns shown before the index launch date reflect hypothetical historical performance.

²⁰ Source: FTSE Russell as at December 29, 2017
²¹ Source: FTSE Russell as at December 29, 2017

B Shares – a share class in decline?

B Shares were introduced in 1992 as a means to attract foreign capital via equity offerings rather than compete with the newly established A Shares market. For this purpose they were initially made available to overseas investors only, denominated in US dollars on the SSE and Hong Kong dollars on the SZSE. Since their inception, new listings continued until late 2000, where interest from overseas investors faded as they turned their attention to the fast growing overseas listings of other Chinese firms, e.g. H Shares. To inject liquidity to the B Shares market, domestic investors with the appropriate foreign currency dealing accounts were allowed to trade B Shares from 2001. The opening of the A Shares to foreign investors in the subsequent years has reduced the listings growth of the B Shares market to a standstill. Companies with B Share listings have started to delist and relist as H Shares, e.g. China International Marine Containers and China Vanke.

There are currently around 100 companies with B Share listings, the majority of which also have associated A Share listings.

Using the FTSE China B Share All Cap Index as a measure of the market for the share class, it is to a large extent represented by traditional industries such as Basic Materials, Industrials and Consumer Goods, with a combined weight of 74%.²²

H Shares – large cap financials dominating

H Shares refer to securities of mainland China incorporated companies listed and traded on the HKEX, with the approval from the CSRC. In their early development stages the companies listed were almost entirely SOEs, the purpose other than to raise additional capital was to familiarize companies with international regulatory and governance standards. There are now around 250 companies with H Share listings, including both SOEs and private firms, with the former still accounting for over half by number. Using the FTSE China H Share All Cap Index as a measure of the market, H Shares are dominated by Financials, which accounts for 67% by index weight.²³

Many H Share companies also have an associated A Share listing. In most cases the H Shares tend to be smaller than their A Shares equivalent by market capitalization. As shown in Exhibit 8, on average A Shares of dual listed companies are two to three times larger than their H Share equivalents. This implies holding only H Shares will lead to a notable under-representation of the dual listed companies. To capture the true size of the dual listed companies, one either has to buy more H Shares to compensate, or invest in A Shares.

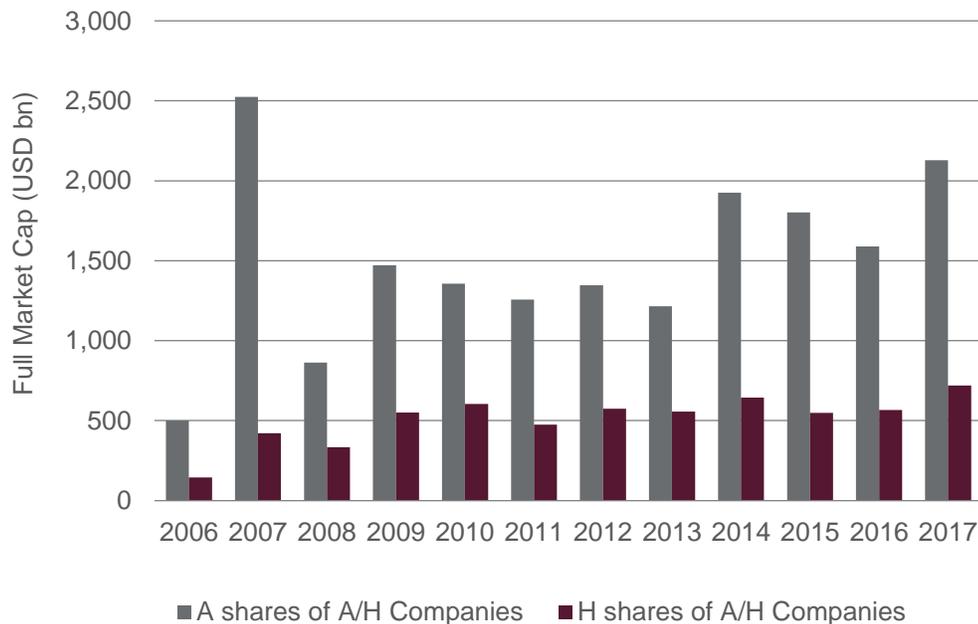
Currently there are close to 100 Chinese companies with both H Share and A Share listings. Over 75% of them are classified as large cap companies by FTSE Russell. The A Shares of these large cap companies represent around 30% of the FTSE China A Large Cap Index by weight. In comparison, the A Shares of those mid cap (small cap) dual listed companies merely account for 2% (0.3%) of the FTSE China A Mid Cap (Small Cap) Index by weight.²⁴ Thus using H Shares as a proxy for A Shares may not only lead to under-representation but also a large cap bias rather than a meaningful mid or small cap exposure.

²² Source: FTSE Russell as at December 29, 2017

²³ Source: FTSE Russell as at December 29, 2017

²⁴ Source: FTSE Russell as at December 29, 2017

Exhibit 8: A Shares dominate their dual share class equivalents



Source: FTSE Russell, data as of December 29, 2017.

For those companies with sole H Share listings, their domestic shares (i.e. shares held by domestic shareholders prior to the H Share listing) are not tradable through the HKEX. The only exception is China Construction Bank, whose domestic shares were allowed to be converted to H Shares during its IPO in 2005. However, this situation is changing as the CSRC launched a pilot scheme at the end of 2017 in which eligible H Share companies can apply to convert all of their non-tradable domestic shares into tradable shares. It is estimated that the total market size of these non-tradable shares could reach USD 332 billion (or 7.6% of the total market cap of HKEX-listed companies).²⁵ The conversion of these non-tradable shares is expected to significantly improve the market depth of H Shares in the long term.

Red Chips – Red for Chinese state ownership

Red Chips refer to companies incorporated outside mainland China and traded on the HKEX, while controlled by Chinese state entities. The earliest Red Chips were formed in the late 1980s through backdoor listings, where a non-listed company goes public through the purchase of a listed company. The name “Red Chip” was used in the early 1990s to relate Chinese companies to the national color of mainland China in a similar manner to large cap companies being referred to as “Blue Chip.” In recent years it is more common to see Red Chips resulting from restructuring of Hong Kong-based subsidiary companies of Chinese state entities via a direct listing. It is worth noting that FTSE Russell’s definition of Red Chips is slightly different from other entities, e.g. the HKEX, as there is an additional requirement on the source of revenue and assets (which also applies to P Chips, S Chips and N Shares).

There are around 100 Red Chip companies according to FTSE Russell’s definitions, among which China Mobile is the largest by market capitalization. Within the FTSE China Red Chip All Cap Index, China Mobile—the world’s largest mobile

²⁵ Source: FTSE Russell, HKEx, Wind, data as of December 29, 2017

telecommunications company by subscribers²⁶—is 28% of the index.²⁷ Along with China Telecom, Telecommunications is the largest industry (31%), followed by Financials (20%), Industrials (18%) and Oil & Gas (14%).

P Chips – private sector listings boosting the growth of China

Similar to Red Chips, P Chips are companies incorporated outside of mainland China and traded on the HKEX. The difference is that they are private enterprises rather than controlled by state entities. According to the All-China Federation of Industry and Commerce, the Chinese economic reforms have boosted the development of its private sector, whose contribution to GDP has grown from 1% during the initial stage of the reforms to over 60% today. The rapid growth of private enterprises called for overseas funding via Hong Kong listings as the priority for domestic listings was initially given to SOEs by the CSRC. The first P Chip, Yuxing, a computer and DVD player manufacturer based in Beijing listed on the HKEX in early 2000 through a holding company incorporated in Bermuda. Subsequently many more private companies followed this approach to gain access to overseas financing.

There are many P Chip listings (around 600) compared to Red Chips, and their market values are usually smaller. However, there is one giant technology company, Tencent, which is the world's largest video gaming company by revenue.²⁸ Within the FTSE China P Chip All Cap Index, Tencent alone accounts for over half (55%) of the index weight.²⁹ As a result, the P Chip index is dominated by Technology (58%) with Consumer Goods (12%) as the second largest industry.

N Shares – Containing China's equivalent to Amazon & Google

N Shares refer to the securities of companies incorporated outside mainland China and traded on the NYSE, NASDAQ Exchange, or NYSE MKT, while controlled by mainland entities, companies or individuals. In most cases, Chinese companies are listed in the US in the form of American Depositary Receipts (ADRs).³⁰

For Chinese domestic companies, especially those from sectors where Foreign Direct Investment (FDI) is restricted or prohibited by the Chinese government, the path of obtaining financing through overseas listings has been problematic. Listed on NASDAQ in 2000, Sina was the first Chinese domestic entity to make use of a Variable Interest Entity (VIE) structure as a solution. Under the VIE structure, foreign investors gain de facto control over the operation and management of the domestic company through various contractual arrangements rather than direct shareholding. The VIE structure has been widely adopted by Chinese domestic companies seeking overseas listing, not limited to those from restricted or prohibited sectors such as internet based information services companies, as it also enables the listing body

²⁶ Source: <https://www.forbes.com/sites/liyanchen/2015/06/01/the-worlds-largest-telecom-companies-china-mobile-beats-verizon-att-again/#80d82014df4d>

²⁷ Source: FTSE Russell, data as of December 29, 2017

²⁸ Source: <http://www.businessinsider.com/tencent-beats-out-sony-and-activision-for-game-revenues-chart-2017-9>

²⁹ Source: FTSE Russell, data as of December 29, 2017

³⁰ To avoid double counting of shares in issue in its global indexes, FTSE Russell stipulates that ADRs with listed underlying shares are excluded for N Share classification. For example, the ADRs of China Mobile are not classified as N Shares since its ordinary shares are listed on the HKEX as Red Chips

(incorporated overseas) to consolidate the financial statements of the domestic company.

There are a couple of incentives for Chinese domestic companies to list in the US. The domestic stock market poses strict listing requirements on historical financial performance, which disqualified many innovative companies, e.g. internet service providers. Another important consideration is the flexibility of a company's share structure. Typically seen in internet companies, the founders and top executives desire to maintain control when the company goes public. One popular solution is the dual class share structure, first used by Baidu in its listing on NASDAQ in 2005. Its share structure allowed one vote for each of the ordinary Class A shares, while the Class B shares (reserved for insiders) would carry 10 votes. The US exchanges allow dual class share structures with differential voting rights, while historically the SSE, SZSE and HEKX do not. These restrictions led the e-commerce giant, Alibaba, to list in the US in 2014 preferring the flexibility of the dual class share structure. To attract listings, in December 2017 the HKEX proposed to accept companies with dual class share structures from emerging and innovative sectors on the main board, subject to certain limitations after a broad market consultation.³¹

The majority of the N Shares come from new economy sectors. Using the FTSE China N Share All Cap Index as a measure of the market, it is dominated by Consumer Services (68%) which includes Alibaba (47%), followed by Technology (28%).³²

S Chips – mid and small cap exposure with a focus on industrials

The S Chips refer to the securities of companies incorporated outside mainland China and traded on the SGX, while controlled by mainland entities, companies or individuals. Traditionally Singapore has attracted around 100 small and medium size Chinese companies to list their shares due to its advanced capital markets and cultural connections with China. Using the FTSE China S Chip All Cap Index as a measure of the market, S Chips are dominated by Industrials (64%).³³

Chinese share classes lined up

Having had a closer look at the history and evolution of each share class, we now look at how each compares or interacts with one another. Exhibit 9 summarizes the market size of each share class, as represented by its corresponding FTSE All Cap index. The A Shares market represents the largest opportunity set among the seven share classes, accounting for over half of the total net market capitalization. H Shares (16.6%) and P Chips (14.5%) are the next largest. It is worth noting that N Shares also have a weight of over 10% by net market capitalization, although with just 30 companies. In contrast, the market capitalization representation of the B Shares and S Chips is relatively smaller.

³¹ Source: http://www.hkex.com.hk/News/News-Release/2017/171215news?sc_lang=en

³² Source: FTSE Russell, data as of December 29, 2017

³³ Source: FTSE Russell, data as of December 29, 2017

Exhibit 9: Market size of Chinese share classes

Share Class	Number of Constituents	Full Market Cap (USD billion)	Net Market Cap (USD billion)	Net Market Cap (%)	Average Free Float (%)
A Share	1,916	7,269.9	1,765.0	51.1	24.3
B Share	56	26.2	19.4	0.6	74.3
H Share	140	1,082.3	575.0	16.6	53.1
Red Chip	62	601.9	194.9	5.6	32.4
P Chip	164	1,060.1	500.5	14.5	47.2
S Chip	7	9.6	4.1	0.1	42.6
N Share	30	740.9	395.1	11.4	53.3
Total	2,375	10,791.0	3,454.0	100.0	32.0

Source: FTSE Russell, data as of December 29, 2017. Each share class is represented by its corresponding FTSE All Cap index. Average Free Float incorporates foreign ownership limits for China A Shares.

Exhibit 10 shows the industry representation of each share class, as measured by the net market capitalization in its corresponding FTSE All Cap index, in percentage terms relative to the total net market capitalization of the seven share classes combined (i.e. total China). A Shares provide the most balanced exposure to different industries compared to any other share class. Although they have a larger weighting to traditional industries, such as Industrials, Consumer Goods, and Basic Materials, the new economy sectors of Consumer Services and Technology, are more represented in the P Chips and N Shares classes, with H Shares representing Financials and Oil & Gas, as well as Red Chips representing Telecommunications to supplement existing A Share listings.

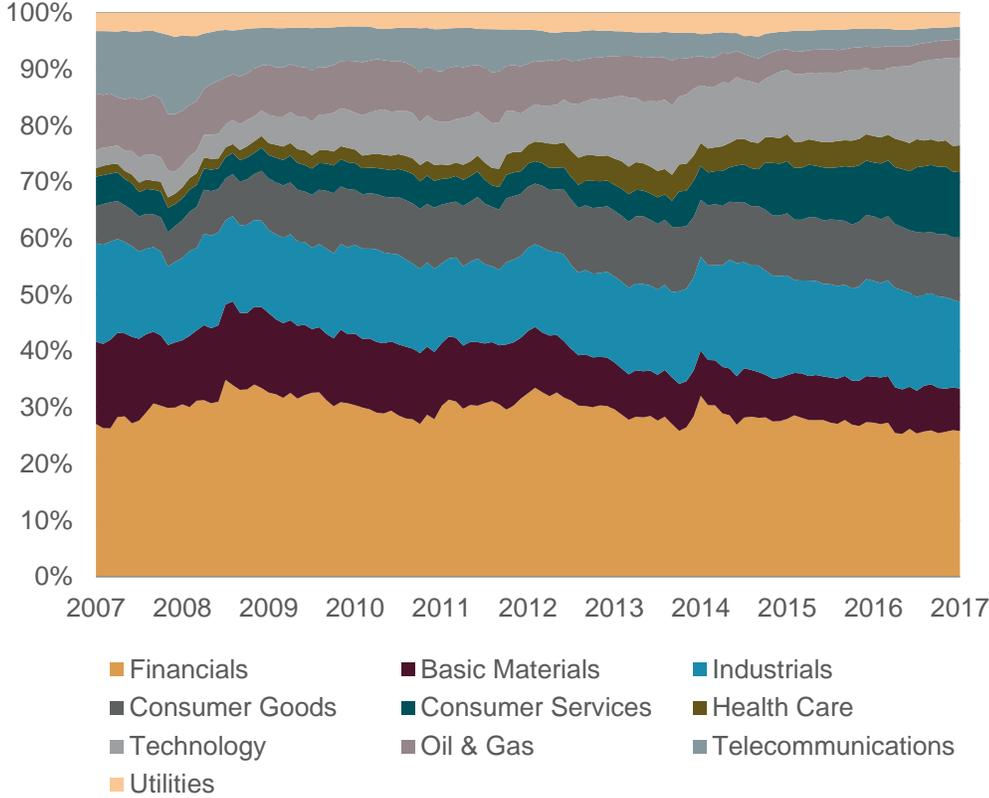
Exhibit 10: Industry representation of Chinese share classes

ICB Industry	A Share	B Share	H Share	Red Chip	P Chip	S Chip	N Share	Total
Oil & Gas	0.96	-	1.17	0.76	0.34	-	0.03	3.26
Basic Materials	6.03	0.08	0.79	0.02	0.59	0	-	7.52
Industrials	11.91	0.17	1.47	1	0.53	0.08	0.20	15.36
Consumer Goods	8.48	0.17	0.76	0.27	1.73	-	0.02	11.43
Health Care	3.33	0.01	0.38	0.1	0.82	-	0.14	4.78
Consumer Services	3.16	0.06	0.22	0.02	0.34	-	7.78	11.58
Telecommunications	0.26	-	0.19	1.77	-	-	-	2.22
Utilities	1.53	0.01	0.26	0.43	0.19	0.01	-	2.45
Financials	11.95	0.05	11.12	1.14	1.54	0.03	0.02	25.84
Technology	3.48	0.02	0.29	0.14	8.40	-	3.25	15.57
Total	51.1	0.56	16.65	5.64	14.49	0.12	11.44	100

Source: FTSE Russell, data as of December 29, 2017. Each share class is represented by its corresponding FTSE All Cap index. Past performance is no guarantee of future results.

The historical evolution of industry representation of total China is shown in Exhibit 11. It is clearly seen that the new economy industries (e.g. Consumer Services, Health Care and Technologies) have expanded in the past decade and have reached a comparable scale to the traditional industries (e.g. Basic Materials, Industrials and Consumer Goods). This exposure, which closely reflects the shift of the real economy, could not be obtained with any of the individual share classes.

Exhibit 11: Changes in total China industry weights (December 2007- December 2017)

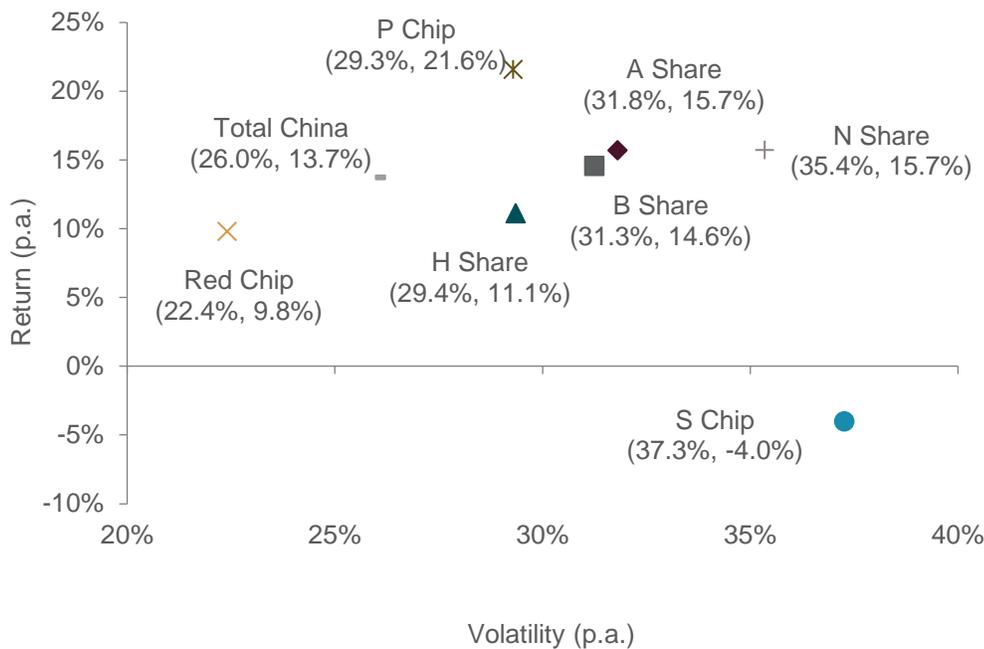


Source: FTSE Russell, data from December 31, 2007 to December 29, 2017. Total China is represented by the combination of the seven share classes as represented by their corresponding FTSE All Cap indexes. Past performance is no guarantee of future results. Weights shown before the index launch date reflect hypothetical historical data.

Exhibit 12 shows the volatility and performance of each share class from December 2005 to December 2017, as represented by its corresponding FTSE All Cap index. Although representing Chinese companies, the different share classes exhibit quite diverse results. This could be attributed to several reasons, such as their industry representation, ownership structure and trading venue. For example, compared to H Shares and P Chips which are also listed on the HKEX, Red Chips have much lower historical volatility, possibly explained by their SOE nature and industry representation.

What is also shown in Exhibit 12 is the volatility and performance of total China. It indicates that the combination of the share classes brings diversification benefits as the combined benchmark has historically exhibited lower volatility than the majority of the individual share classes.

**Exhibit 12: Volatility and performance of each share class and total China
(December 2005 - December 2017)**



Source: FTSE Russell, gross total returns in USD from December 30, 2005 to December 29, 2017. Each share class is represented by its corresponding FTSE All Cap index. Total China is represented by the combination of the seven share classes as represented by their corresponding FTSE All Cap indexes. Volatility is calculated as the annualized standard deviation of monthly returns. Past performance is no guarantee of future results. Returns shown before the index launch date reflect hypothetical historical performance. Please see the end for important legal disclosures.

Exhibit 13 shows the correlation among the different share classes, as represented by their corresponding FTSE All Cap indexes, based on their monthly returns. It reveals that China's domestic stock markets are less integrated with international markets as indicated by the lower correlation between A Shares (or B Shares) and the overseas listed share classes. This correlation structure explains the reduced volatility after combining the seven share classes together.

In fact, the segregation of China's domestic stock markets from international markets is also evidenced by the A/H premium, i.e. the pricing differential between A Shares and H Shares of the dual listed companies. In an ideal world without market barriers, the price of two different share classes in the same company should be close to each other. However, it is well-documented that the prices of A Shares and H Shares of the same company can diverge, with positive premium often seen in A Shares. This phenomenon persists and remains as a popular research topic even after cross-market trading mechanisms have been introduced and improved.

Exhibit 13: Monthly return correlation among share classes (December 2005 - December 2017)

	A Share	B Share	H Share	Red Chip	P Chip	S Chip	N Share
A Share	1.00						
B Share	0.84	1.00					
H Share	0.65	0.71	1.00				
Red Chip	0.53	0.62	0.90	1.00			
P Chip	0.58	0.69	0.84	0.81	1.00		
S Chip	0.41	0.57	0.74	0.78	0.76	1.00	
N Share	0.44	0.47	0.66	0.62	0.78	0.58	1.00

Source: FTSE Russell, gross total returns in USD from December 30, 2005 to December 29, 2017. Each share class is represented by its corresponding FTSE All Cap index. Correlation calculation is based on monthly returns. Past performance is no guarantee of future results. Returns shown before the index launch date reflect hypothetical historical performance. Please see the end for important legal disclosures.

Exhibit 14 shows the calendar year returns of each share class index and total China between 2008 and 2017, as represented by its corresponding FTSE All Cap index, in descending order. The indication is that historically the relative performance of the different share classes varies and no individual share class has consistently outperformed. It highlights the benefits of diversifying across share classes.

Exhibit 14: Calendar year returns of each share class and total China (2008 - 2017)

2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
P Chip 90.80%	P Chip 8.40%	B Share 26.50%	A Share 42.40%	N Share 80.70%	P Chip 27.60%	Red Chip -9.00%	S Chip 32.90%	P Chip 167.90%	Red Chip -47.30%
N Share 73.10%	H Share 3.00%	A Share 16.00%	Total China 23.50%	P Chip 29.00%	Red Chip 25.40%	N Share -14.40%	B Share 26.40%	B Share 128.60%	H Share -52.00%
S Chip 49.70%	N Share -2.30%	P Chip 11.50%	H Share 15.10%	B Share 10.40%	S Chip 23.30%	Total China -20.80%	N Share 24.20%	A Share 98.70%	Total China -56.90%
H Share 29.60%	Red Chip -7.30%	Total China 6.70%	B Share 7.90%	Total China 7.10%	H Share 20.90%	H Share -21.40%	Red Chip 12.00%	N Share 93.20%	P Chip -56.90%
Total China 29.00%	Total China -10.90%	N Share 0.90%	N Share 7.10%	A Share 3.70%	B Share 19.80%	A Share -22.70%	H Share 5.70%	Total China 80.80%	A Share -62.60%
Red Chip 19.00%	S Chip -15.80%	Red Chip -0.80%	P Chip -0.10%	H Share 0.50%	Total China 14.70%	P Chip -27.90%	Total China 4.00%	H Share 71.50%	N Share -64.60%
A Share 13.20%	A Share -19.60%	S Chip -9.00%	Red Chip -0.10%	Red Chip 0.10%	A Share 6.40%	B Share -29.10%	P Chip 2.60%	S Chip 58.60%	B Share -65.80%
B Share 6.90%	B Share -19.60%	H Share -14.60%	S Chip -21.30%	S Chip -3.00%	N Share -6.70%	S Chip -50.80%	A Share -3.20%	Red Chip 39.10%	S Chip -75.40%

Source: FTSE Russell, gross total returns in USD from December 31, 2007 to December 29, 2017. Each share class is represented by its corresponding FTSE All Cap index. Total China is represented by the combination of the seven share classes as represented by their corresponding FTSE All Cap indexes. Past performance is no guarantee of future results. Returns shown before the index launch date reflect hypothetical historical performance. Please see the end for important legal disclosures.

The Total China Concept

By combining the share classes together, rather than only including one share class of a company over another, we effectively capture the overall investable market capitalization of each constituent company.

The complete picture of the different share classes presents us with the benefits of a total China concept. The aggregate of the seven share classes achieves the most complete representation of the China economy. A Shares represent half of the opportunity set and provide broad exposure to various industries, and where industries are less represented these are supplemented by the other share classes.

Compared to the majority of the individual share classes, the combination of the share classes results in improved risk-adjusted returns (as indicated in Exhibit 12 and 14). This diversification benefit is especially valuable given the historical volatile nature of Chinese equities.

Another important yet implicit benefit of the total China concept is that it provides exposure to the new economy and innovative companies of the future. For example, Chinese internet companies have historically treated New York as their preferred listing venue due to the flexibility of its listing rules. Going forward, young and innovative companies could seek to list on the HKEX as the latter becomes more attractive to dual class share structure listings. In addition, the A Shares market may attract more companies in the new economy sectors via Chinese Depository Receipts (CDRs) —a pilot program that allows overseas incorporated Chinese technology companies to list in the domestic market—or when the A Share listing regulations evolve to accommodate them. If CDRs become a popular listing venue it has the potential to become a sizable market. Nevertheless, no matter where the changes take place, these new opportunities would be captured under the total China concept.

For more information about our indexes, please visit ftserussell.com.

© 2018 London Stock Exchange Group plc and its applicable group undertakings (the "LSE Group"). The LSE Group includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE TMX Global Debt Capital Markets Inc. and FTSE TMX Global Debt Capital Markets Limited (together, "FTSE TMX"), (4) MTSNext Limited ("MTSNext"), (5) Mergent, Inc. ("Mergent"), (6) FTSE Fixed Income LLC ("FTSE FI") and (7) The Yield Book Inc ("YB"). All rights reserved.

FTSE Russell[®] is a trading name of FTSE, Russell, FTSE TMX, MTS Next Limited, Mergent, FTSE FI and YB. "FTSE[®]", "Russell[®]", "FTSE Russell[®]", "MTS[®]", "FTSE TMX[®]", "FTSE4Good[®]", "ICB[®]", "Mergent[®]", "WorldBIG[®]", "USBIG[®]", "EuroBIG[®]", "AusBIG[®]", "The Yield Book[®]", and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of the LSE Group or their respective licensors and are owned, or used under licence, by FTSE, Russell, MTSNext, FTSE TMX, Mergent, FTSE FI or YB.

All information is provided for information purposes only. All information and data contained in this publication is obtained by the LSE Group, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or of results to be obtained from the use of the FTSE Russell Products or the fitness or suitability of the FTSE Russell Products for any particular purpose to which they might be put. Any representation of historical data accessible through FTSE Russell Products is provided for information purposes only and is not a reliable indicator of future performance.

No responsibility or liability can be accepted by any member of the LSE Group nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any error (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analysing, editing, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of the LSE Group is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of the LSE Group nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing contained in this document or accessible through FTSE Russell Products, including statistical data and industry reports, should be taken as constituting financial or investment advice or a financial promotion.

Past performance is no guarantee of future results. Charts and graphs are provided for illustrative purposes only. Index returns shown may not represent the results of the actual trading of investable assets. Certain returns shown may reflect back-tested performance. All performance presented prior to the index inception date is back-tested performance. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. However, back- tested data may reflect the application of the index methodology with the benefit of hindsight, and the historic calculations of an index may change from month to month based on revisions to the underlying economic data used in the calculation of the index.

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of the LSE Group. Use and distribution of the LSE Group data requires a licence from FTSE, Russell, FTSE TMX, MTSNext, Mergent, FTSE FI, YB and/or their respective licensors.

About FTSE Russell

FTSE Russell is a leading global index provider creating and managing a wide range of indexes, data and analytic solutions to meet client needs across asset classes, style and strategies. Covering 98% of the investable market, FTSE Russell indexes offer a true picture of global markets, combined with the specialist knowledge gained from developing local benchmarks around the world.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create investment funds, ETFs, structured products and index-based derivatives. FTSE Russell indexes also provide clients with tools for asset allocation, investment strategy analysis and risk management.

A core set of universal principles guides FTSE Russell index design and management: a transparent rules-based methodology is informed by independent committees of leading market participants. FTSE Russell is focused on index innovation and customer partnership applying the highest industry standards and embracing the IOSCO Principles. FTSE Russell is wholly owned by London Stock Exchange Group.

For more information, visit ftserussell.com.

To learn more, visit ftserussell.com; email info@ftserussell.com; or call your regional Client Service Team office:

EMEA

+44 (0) 20 7866 1810

North America

+1 877 503 6437

Asia-Pacific

Hong Kong +852 2164 3333

Tokyo +81 3 3581 2764

Sydney +61 (0) 2 8823 3521