

Research

# China through the mosaic of its share classes



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China's global competitiveness is not a recent phenomenon. The "Opium Wars" of 1839-1860 left China aspiring to the technological and industrial capabilities of Britain and France. Needing fresh capital in order to fund the desired advancements, the concept of a joint-stock company was introduced. This development led to the formation of the Chinese Steam Merchant's Company; and its shares began trading in Shanghai teahouses.<sup>1</sup> More companies followed, and by 1890 Shanghai had formally established a stock exchange. Fast forward one-hundred years, past several more wars and a redefining political revolution, and China was again on the path towards the formation of a stock exchange.

Beginning around 1980, a series of reforms were initiated with the overarching goal of improving the performance of state owned enterprises (SOEs). These reforms included making local governments the de facto owners of SOEs, introducing managerial performance incentives, and market-based pricing.<sup>2</sup> Partly in response to the rapidly increasing competitiveness of China's companies, the Shanghai Stock Exchange was founded in November 1990, shortly followed by the Shenzhen Stock Exchange. The ownership of publicly listed companies remained mostly in the hands of the government, but "free float shares"<sup>3</sup> were made available exclusively to domestic investors. The domestic-only "A-share" class, denominated in Renminbi was soon followed by the "B-share" class which was created to facilitate foreign ownership of Chinese companies. B-shares were still traded on the mainland but paid dividends and were settled in either US or Hong Kong dollars, allowing global investors to gain access to Chinese domestic companies. However, B-shares' usage and popularity was overshadowed almost immediately by another China share class, the H-share.

H-shares, as the first letter in the name suggests, are Hong Kong listings for companies that commonly have a corresponding mainland China A-share line. H-shares became the preferred route of China exposure for global investors because they were denominated in Hong Kong dollars and traded on the more familiar Hong Kong Stock Exchange (HKEX). Historically, H-shares also frequently traded at a discount to their corresponding A-share line making them even more popular with many investors.<sup>4,5</sup> In recent years, some companies with B-share listings have taken the step of converting them to A- and H-shares in order to broaden their potential pool of shareholders. Some China market observers have speculated that B-shares may eventually be folded into the A- and H-share markets as a way to consolidate liquidity and simplify the range of options available to foreign investors.<sup>6</sup>

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<sup>1</sup> Chen, Z. (2013). Capital Freedom in China as Viewed From the Evolution of the Stock Market. *Cato Journal*, Vol. 33, No. 3.

<sup>2</sup> Li, W. (1997). The Impact of Economic Reform on the Performance of Chinese State Enterprises, 1980-1989. *Journal of Political Economy*, Vol. 105, No 5, pp. 1080-1106.

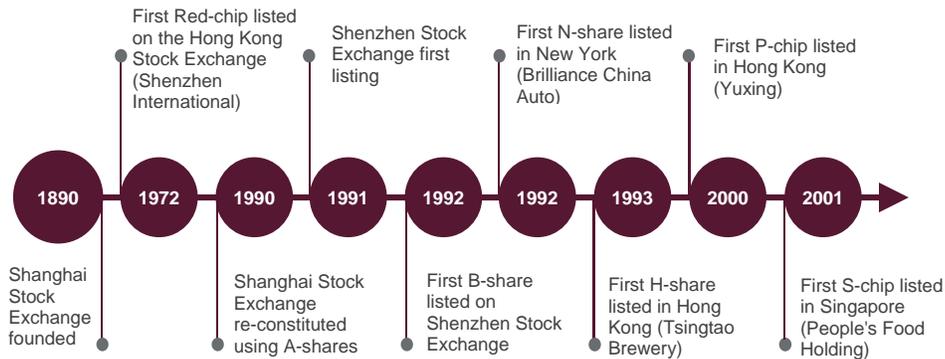
<sup>3</sup> "Free float" refers to the total number of a company's shares that could be publicly traded.

<sup>4</sup> Craighead, T. (2016). Mind the gap China style: Hong Kong vs. mainland share. Bloomberg Intelligence, accessed on August 15, 2016 at: <http://www.bloomberg.com/professional/blog/mind-the-gap-china-style-hong-kong-vs-mainland-shares/>

<sup>5</sup> Capturing the Chinese A-Shares and H-Shares Anomaly. (2016). FTSE Russell Research available at: [http://www.ftserussell.com/sites/default/files/research/arbitraging\\_the\\_chinese\\_a-shares\\_and\\_h-shares\\_anomaly\\_final.pdf](http://www.ftserussell.com/sites/default/files/research/arbitraging_the_chinese_a-shares_and_h-shares_anomaly_final.pdf)

<sup>6</sup> Noble, J. (2013). End of the road for China's 'B' market. *Financial Times*, accessed on 9/17/2015 at: <http://ft.com/intl/cms/s/0/254b3b6e-5a2a-11e2-a02e-00144feab49a.html>

## Exhibit 1: Timeline of China's share classes development.



Source: FTSE Russell as of June 30, 2016.

A-, B-, and H-shares are all linked to companies incorporated inside China. There are four additional stock types whose businesses and/or ownership can be traced to China but are incorporated outside the country: Red-chips, P-chips, S-chips and N-shares.<sup>7</sup> So-called Red-chip stocks were developed as a method to reform SOEs by encouraging competitiveness and improved governance. Listed on the Hong Kong Stock Exchange, the ownership of Red-chip companies can be linked to a mainland government entity, and historically have been subject to adhering to the listing and regulatory requirements of the HKEX and Securities and Future Commission (SFC).<sup>8</sup>

P-chips, S-chips and N-shares share many similarities but can be easily differentiated by where they are listed: P-chips in Hong Kong, S-chips in Singapore, and N-shares in New York. Companies listed using one of these three share types have a majority owner and are most often incorporated in a tax-advantaged country like the Cayman Islands or Bermuda. These companies can be formed using complex legal structures that may limit voting rights.<sup>9</sup> Where these companies decide to list also reflects the perceived attractiveness of a particular exchange. Hong Kong, Singapore and New York have all competed in the beauty contest for non-domestically listed Chinese companies – sometimes raising questions about the standards to which these companies are held.<sup>10</sup> The Hong Kong Stock Exchange has attempted over the years to facilitate the listings of dual-class shares but has been prevented by the Hong Kong regulator, the SFC, most recently in 2015.

Organizing the constellation of China-based share types together may seem as far flung as the listings themselves. But in the remaining sections of this report, we will endeavor to do just that by comparing and contrasting all seven China share classes. The paper will explore: the performance of each share type and in

<sup>7</sup> These are the main stock types although other minor types exist such as L-shares and F-shares that trade in London and Frankfurt.

<sup>8</sup> Tsiang, R. (1998). Making China's Red Chips Accountable. *The Wall Street Journal*, April 14, 1998, accessed on March 25, 2016 at: <http://www.wsj.com/articles/SB892499648667161000>

<sup>9</sup> Chapman, M.J. (2016). China's Variable Interest Entities in Context: Past, Present and Future. *University of New South Wales Law Journal*, No. 16-05, accessed on March 25, 2016 at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2720097](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2720097)

<sup>10</sup> Grant, J. (2012). Singapore Exchange tightens listing rules. *Financial Times*, accessed on March 26, 2016 at: <http://www.ft.com/cms/s/0/9bc8a0ca-d13a-11e1-8957-00144feabdc0.html#axzz4HcMmcSyg>

relation to the others, the characteristics of each share type and how those look when brought together in a combined index, the historical ownership profiles of the share classes, and survey the current landscape of usage within ETFs and mutual funds.<sup>11</sup>

## Performance

The performance of the China share classes as represented by the corresponding FTSE Russell index has varied, in some instances dramatically. Looking at the historical total return index values for the share classes, shown in Exhibit 2, a three-tiered pattern emerges. Red-chips and H-shares indexes finished our sample period with the highest total return index values of the seven share classes. These two Hong Kong-based share types may have benefitted from their combination of domestic exposure gained through a well-established international exchange. B-shares, P-chips and A-shares indexes comprise the middle tier of historical index values. N-shares and S-chips indexes ended the time period with the lowest index values, with S-chips notably diverging from the pack. S-chips were affected after a series of high profile corporate governance scandals beginning in 2010.<sup>12</sup> N-shares have also received scrutiny for the complexity of their corporate structures and have been excluded from standard global and emerging market indexes.<sup>13</sup>

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<sup>11</sup> Throughout the paper when referring to a share class, the underlying data will come from the corresponding FTSE indexes:

A-share – FTSE China A All-Share Index.

B-share – FTSE China B All-Share Index.

H-share – FTSE China H Share Index.

N-share – FTSE China N Share All-Cap Capped Index.

Red-chip – FTSE Hong Kong Red Chips Index.

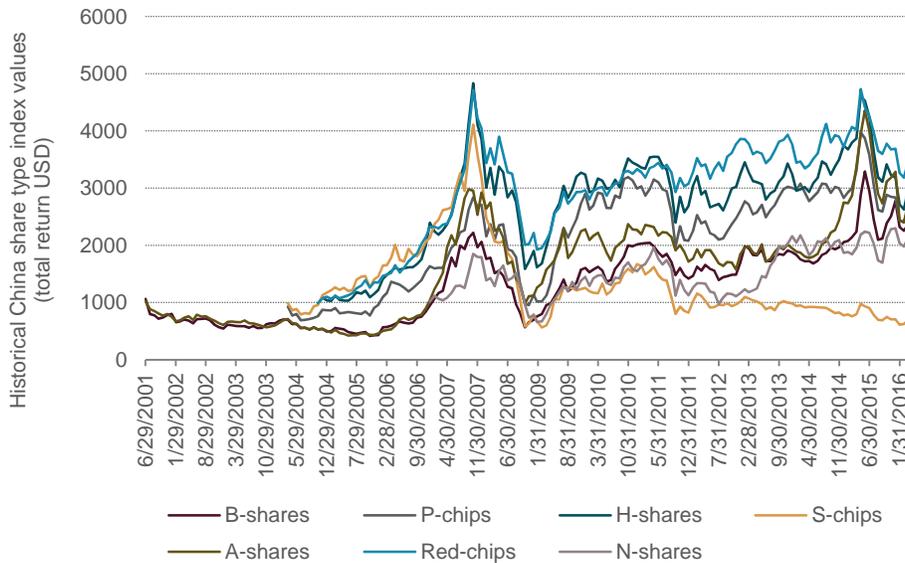
P-chip – FTSE P Chip All Cap Capped Index.

S-chip – FTSE China S Chip All Cap Index.

<sup>12</sup> Danubrata, E. & Kok, C. (2011). Accounting woes threaten Chinese listings in Singapore. *Reuters*, accessed on March 26, 2016 at: <http://www.reuters.com/article/singapore-listings-idUSL3E7HU0AB20110701>

<sup>13</sup> Hunter, G.S. (2015). FTSE Studying Include Companies With Primary Listings Overseas. *The Wall Street Journal*, accessed on April 1, 2016 at: <http://www.wsj.com/articles/ftse-studying-include-companies-with-primary-listings-overseas-1420810904>

**Exhibit 2: Historical total return index values (USD) by share type<sup>14</sup>**



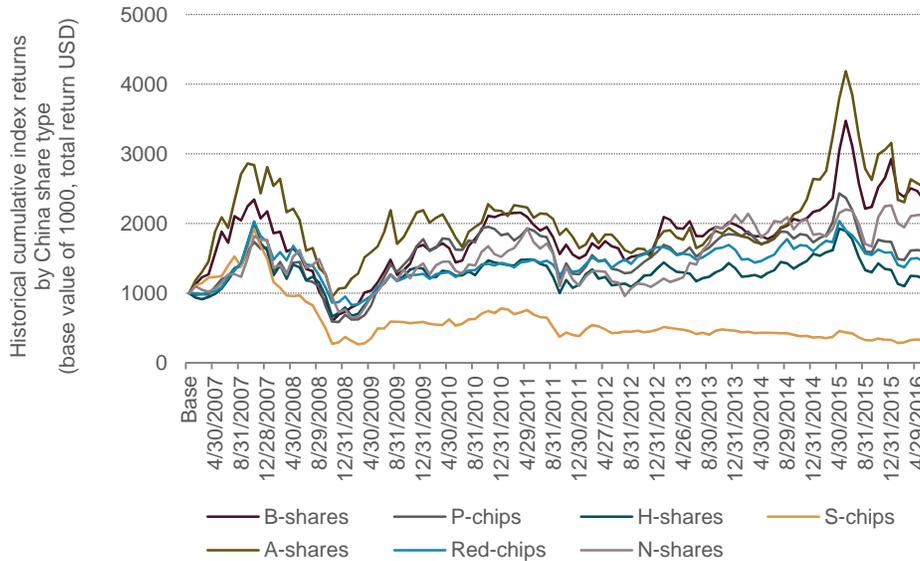
Source: FTSE Russell. Data as of June 30, 2016. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures.

In order to get a better sense of how the different share classes have performed relative to one another, we can use a common start date and base value (1000) for all. The earliest common start date from which monthly returns are available for all share types was December 2006, when the FTSE N Share All-Cap Capped Index began. As shown in Exhibit 3, the hierarchy of cumulative returns across the share classes can perform somewhat differently. The A-shares index stands out as having the highest cumulative return since 2007 despite two periods (2007-2008 and 2015-2016) of deep drawdowns – the B-shares index tracked closely behind. The cumulative performance of the S-chips index was lowest, falling more than 50% over the nearly 10-year time period evaluated.

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<sup>14</sup> The FTSE A All-Share Index and the FTSE B All-Share Index began with base values of 5000 which were re-scaled to 1000 in order to match the starting values of all other share classes.

**Exhibit 3: Total return index values (USD) by share type from 2007**

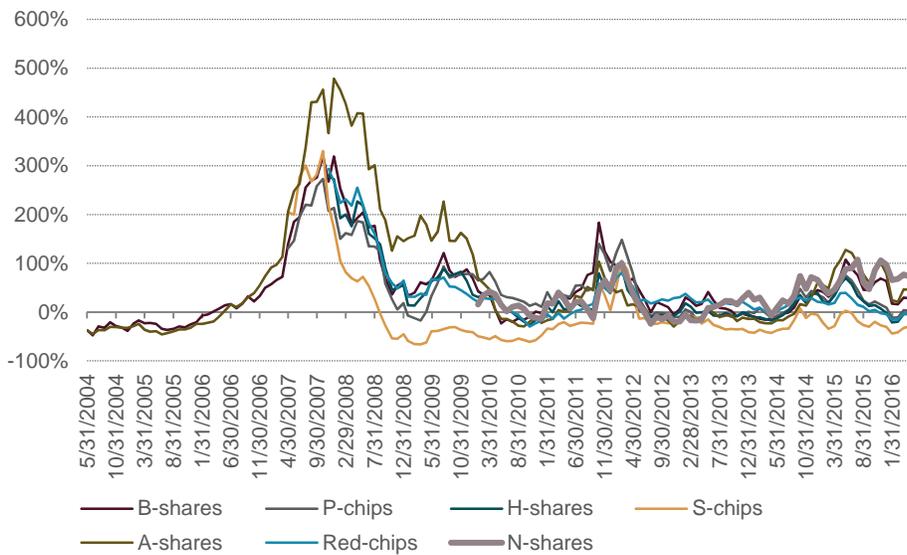


Source: FTSE Russell. Data as of June 30, 2016. Past performance is no guarantee of future results. Please see the end page for important legal disclosures.

Our final look at the share classes using index performance data will be through the lens of 36-month periods of rolling returns. Rolling returns are entry and exit time-dependent, but may more closely approximate the experience of investors transitioning into and out of asset classes and market segments. The three-year rolling returns make clear why A-shares have attracted so much attention as they cycled through three distinct periods (2007, 2011, and 2015) where the index return exceeded 100% – Exhibit 4. However, these index returns were short lived as most or all of those index gains were lost in subsequent periods. These cycles underscore: 1) the impact the timing of holding periods; 2) the implications of treating A-shares as a long-term vs. short term investment (see Exhibit 2); and 3) the potential benefits of a having a broad exposure to China that includes multiple share classes –something we will explore in greater detail in the sections below.

*The three-year rolling returns make clear why A-shares have attracted so much attention as they cycled through three distinct periods (2007, 2011, and 2015) where the index return exceeded 100%*

#### Exhibit 4: 36-monthly rolling returns for FTSE’s China share class indexes



Source: FTSE Russell. Data as of June 30, 2016. References to A-shares are to the FTSE China A All-Share Index. References to B-shares are to the FTSE China B All-Share Index. References to H-shares are to the FTSE China H-share Index. References to N-shares are to the FTSE China N Share All-Cap Capped Index. References to Red-chips are to the FTSE Hong Kong Red Chips Index. References to P-chips are to the FTSE P Chip All Cap Capped Index. References to S-chips are to the FTSE China S Chip All Cap Index. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures.

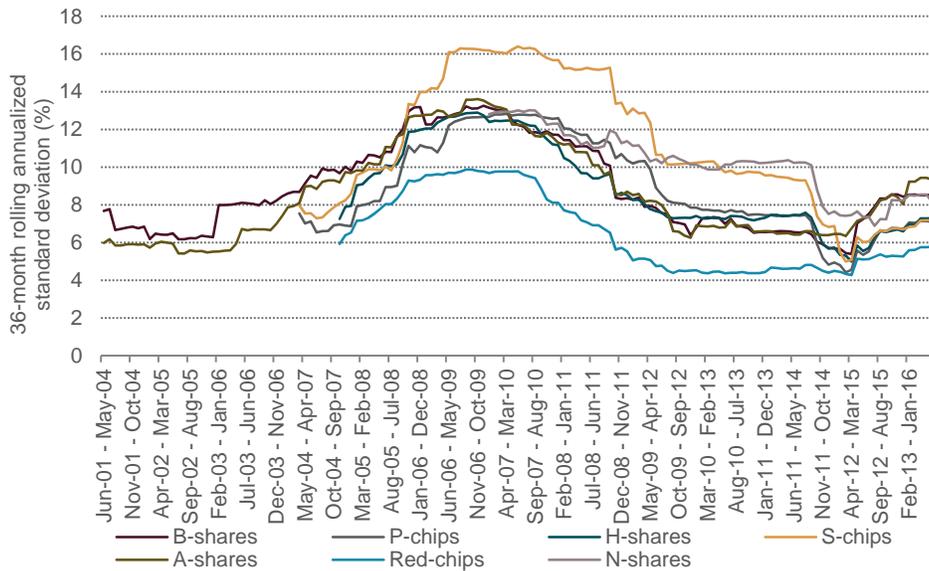
*The differences in risk between share classes, as displayed in Exhibit 5, has at times been dramatic – like the spread between S-chips and Red-chips around the financial crisis.*

### Volatility

As we have seen with returns, we can calculate volatility using 36-month rolling windows of standard deviation (standard deviation is a commonly used measure of “risk”). The differences in risk between share classes, as displayed in Exhibit 5, has at times been dramatic – like the spread between S-chips (yellow line) and Red-chips (teal line) around the financial crisis. The combination of low returns and higher risk produces a since inception Sharpe ratio for the S-chips index of .08, that is the lowest of the share type indexes.<sup>15</sup> After a period of increased volatility across all of China’s share class indexes around the global financial crisis, they have returned to a seemingly normal range of around 6%-10% with Red-chips at the lower bound and A-shares at the upper bound. A-share index volatility has historically been somewhere near the middle of that range, but concerns over credit, a property bubble and future economic growth has increased the risk of mainland stocks compared to the other share classes in the most recent period. As A-shares become more widely held by foreign institutional investors historical retail-driven risk and return patterns may lose their predictive power, particularly in response to global macro events.

<sup>15</sup> The Sharpe ratio is defined as portfolio return minus the return of a risk-free asset, divided by the standard deviation of the portfolio excess return over the risk-free asset. Here the risk-free asset is defined as the return of the Merrill Lynch 3-Month T-Bill Total Return Index.

**Exhibit 5: 36-month rolling standard deviation of FTSE’s China share class indexes**



Sources: FTSE Russell and MPI Stylus. Data as of June 30, 2016. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures.

**Correlation**

China’s share classes, despite sharing a common country of origin, do not always move in lockstep. As we explore in the sections that follow many of the share types have unique characteristics that help explain why the correlations between them are relatively low. The cross-correlations matrix found in Table 1 shows that no two share classes have a historical correlation greater than .85 (H-shares and P-chips). Other combinations like S-chips and A-shares ( $r = .42$ ), and A-shares and Red-chips ( $r = .48$ ) display much weaker relationships. These cross-correlation relationships can reveal more about managing volatility at the portfolio level.

The relationship of each share class to the US equity market, as measured by the Russell 3000® Index, is also very different. N-shares, listed in New York, show the strongest ties with the US market ( $r = .73$ ), followed by S-chips ( $r = .64$ ); both perhaps picking up small levels of market beta from their developed market hosts. A-shares showed the weakest relationship to US stocks ( $r = .30$ ), but that should be expected to change as A-shares are integrated into global equity portfolios.<sup>16</sup> For now, A-shares continue to offer diversification for developed market-oriented portfolios.

*...many of the share types have unique characteristics that help explain why the correlations between them are relatively low.*

16 Hoorn, H., Papaioannou, M.G., Park, J., & Pihlman, J. (2013). Procyclical Behavior of Institutional Investors during the Recent Financial Crisis: Causes, Impacts, and Challenges. IMF Working Paper, accessed on April 10, 2016 at: <https://www.imf.org/external/pubs/ft/wp/2013/wp13193.pdf>

**Table 1: Cross correlations of China's share classes from December 2006 – June 2016<sup>17</sup>**

|           | Russell<br>3000<br>Index | B-shares | P-chips | H-shares | S-chips | A-shares | Red-<br>chips | N-shares |
|-----------|--------------------------|----------|---------|----------|---------|----------|---------------|----------|
| B-shares  | 0.35                     | 1.00     |         |          |         |          |               |          |
| P-chips   | 0.64                     | 0.71     | 1.00    |          |         |          |               |          |
| H-shares  | 0.60                     | 0.69     | 0.85    | 1.00     |         |          |               |          |
| S-chips   | 0.64                     | 0.58     | 0.78    | 0.75     | 1.00    |          |               |          |
| A-shares  | 0.30                     | 0.84     | 0.60    | 0.62     | 0.42    | 1.00     |               |          |
| Red-chips | 0.55                     | 0.57     | 0.79    | 0.88     | 0.77    | 0.48     | 1.00          |          |
| N-shares  | 0.73                     | 0.53     | 0.79    | 0.70     | 0.63    | 0.46     | 0.66          | 1.00     |

Source: FTSE Russell. Data as of June 30, 2016. Past performance is no guarantee of future results. Please see the end page for important legal disclosures.

## Characteristics of China's share classes

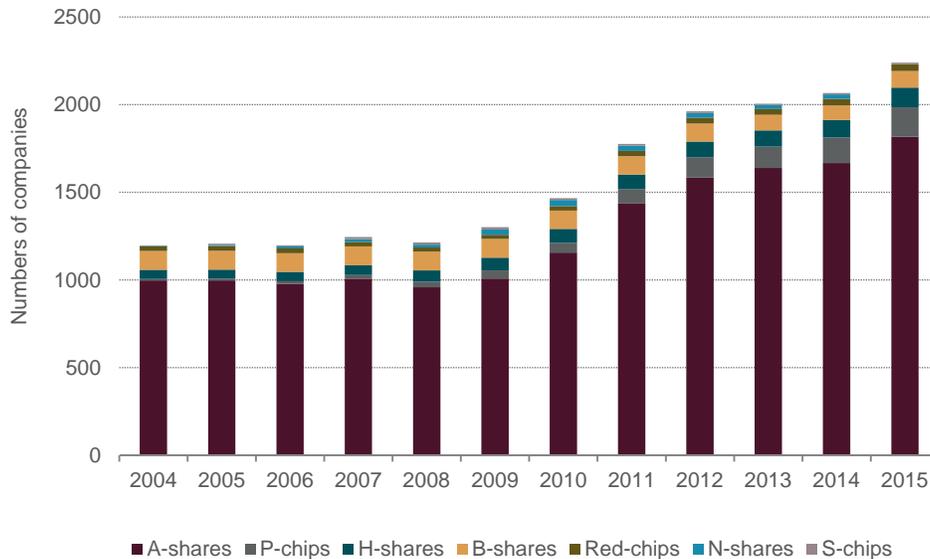
### Numbers of companies

Just like the differences we observed in our analysis of share class performance, there are fundamental differences in the characteristics of China's share classes. We will begin exploring these differences by looking at the proportional size of the China opportunity across share classes. By virtually any measure of size the A-share market dwarfs the other share classes. There are more than 1,500 A-share index constituents as compared to less than 200 each for the H-share and P-chip classes – Exhibit 6. The number of B-shares has dwindled from a high of 108 in 2007 to 95 by the end of 2015. N-share listings grew dramatically from a total of 3 in 2004 through a peak of 36 in 2010, before receding to 26 through December, 2015.

*By virtually any measure of size the A-share market dwarfs the other share classes.*

<sup>17</sup> Date range common to all share types.

## Exhibit 6: China's share classes by numbers of stocks



Source: FTSE Russell as of June 30, 2016.

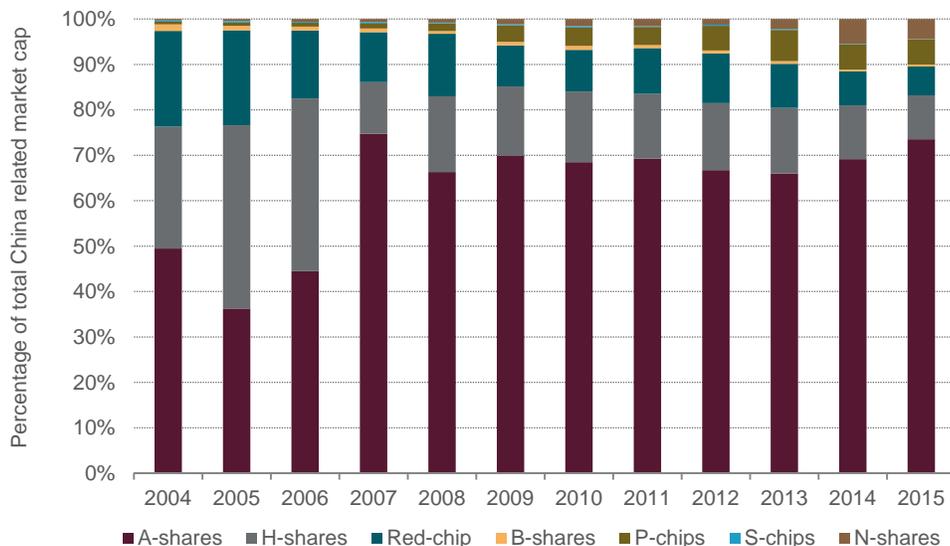
## Market cap representation

Approximating the scale of opportunities by numbers of companies is complimented by looking at the proportion of total market cap held by each share class. Again we find support for the strong interest in the A-share market among investors as they represent more than 70% (~\$6.5T) of China's equity market capitalization. After the A-shares, Hong Kong listed Red-chips and H-shares combined make up about 15% of the approximately \$8.5T in total market cap of all Chinese stocks as of December 31, 2015.<sup>18</sup> Although representing only a fraction of the total number of Chinese companies, the N-shares have a disproportionately high percentage of market cap. This out-sized presence is due to large cap companies like JD.com, Baidu, and most prominently the mega-cap e-commerce giant Alibaba, being among the N-share constituency.

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<sup>18</sup> FTSE Russell. Data as of December 31, 2015.

## Exhibit 7: Proportion of total market cap among China's share classes



Source: FTSE Russell. Data as of June 30, 2016. Past performance is no guarantee of future performance. Please see the end page for important legal disclosures.

*The portion of each share class available to the market, or its “free float”, in most cases reflects the creation story underlying the share class.*

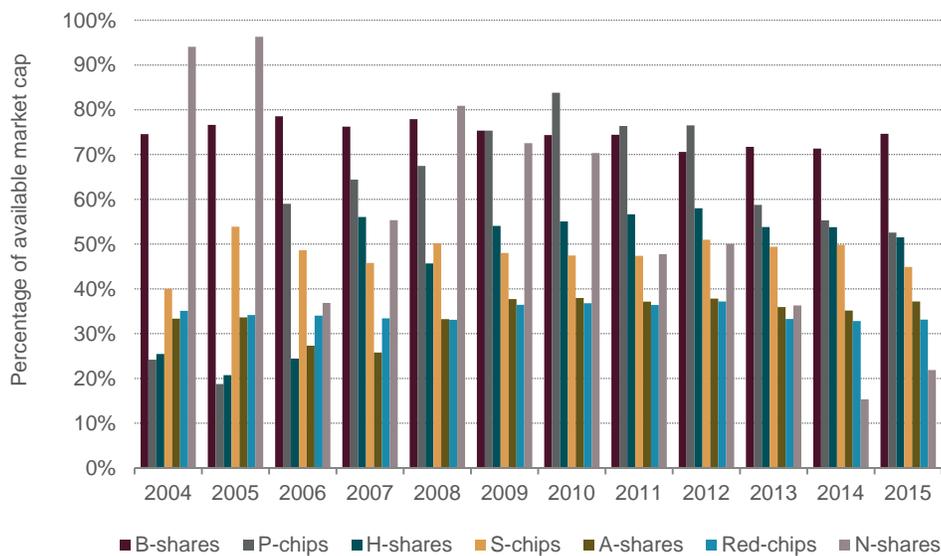
## Ownership structures

Ownership structure is another area where size can be used to contrast the characteristics of the share types. The portion of each share class available to the market, or its “free float”, in most cases reflects the creation story underlying the share class. Take Red-chips for example, which is a share class that exists to give SOEs access to investors on the Hong Kong Stock Exchange. As seen in Exhibit 8, Red-chips (teal bars) have a free float, as measured by the percentage of available market cap, which has consistently hovered below 40% due to government-related holdings. B-shares (burgundy bars), intended for foreign ownership, have had availability closer to 70%.<sup>19</sup> As a group, N-shares have experienced a large decline in free float which can be attributed to the “arm’s length” nature of the ownership structures among large companies like Alibaba; whereby the controlling interest is kept with the founder and/or a small group of individuals. But we should acknowledge that concentrated controlling interests have increasingly become the norm for technology firms including the likes of Google and Facebook.<sup>20</sup>

<sup>19</sup> B-share listings often have a corresponding A-share listing that is substantially larger in size.

<sup>20</sup> Summers, N. (2014). Why Google Is Issuing a New Kind of Toothless Stock. *Bloomberg*, accessed on June 21, 2016 at: <http://www.bloomberg.com/news/articles/2014-04-03/why-google-is-issuing-c-shares-a-new-kind-of-powerless-stock>

## Exhibit 8: Percentage of available market cap (free float) across China share classes



Source: FTSE Russell. Data as of June 30, 2016.

## Sector composition

A critical distinguishing characteristic between China's share classes is the sector composition of each. Like the free float analysis above, sector concentrations (or diversification) can reveal the DNA of a particular share type. It is noteworthy that A-shares are the only share type that does not have a sector with a historical average weighting greater than 30%. Indeed as the class representing the broadest swath of the Chinese economy, A-shares are the most diversified of China's share types with a Herfindahl Index concentration score of 0.16.<sup>21</sup> H-shares have averaged an approximately 50% exposure to the Financials sector as Chinese banking/insurance institutions have listed in Hong Kong to gain access to overseas capital. It's important to note that although there is overlap between A-share and H-share listings, broadly holding one share class versus the other will likely result in meaningful differences in portfolio composition. H-share listings are also much smaller by number and typically tied to large cap A-share companies.

Sector concentrations among other share classes reflect certain industries' efforts to break free of mainland controls over certain areas of the economy. Red-chips are concentrated by weight in the Telecommunications sector because it includes China Mobile's massive ~\$230B market cap. Similarly, N-shares are heavily tilted toward the Technology and Consumer Services sectors. Many of the underlying companies from these sectors desired access to capital that might have otherwise been blocked or limited by restrictions on foreign investor participation. While it is common for countries to restrict

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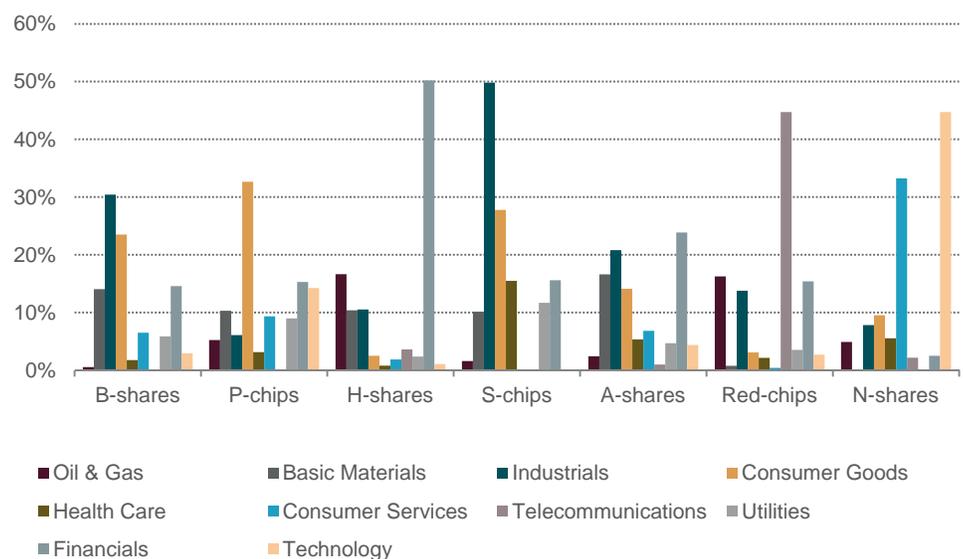
<sup>21</sup> The Herfindahl-Hirschman Index (HHI) is an economic concept that measures the concentration of a set of companies based on their size within the group. Scores range between 0-1, with higher scores corresponding with more concentration. The HHI is calculated as:

$$HHI = \sum_{i=1}^N s_i^2$$

non-domestic access to natural resources, media, and defense related industries, the breadth of investment restrictions on foreign investors in China contributes to such companies' decisions to list on a foreign exchange. Along these lines we should note that the China has never codified the legality of the types of corporate structures used by the likes of Alibaba and Baidu and is now formulating plans to regulate them.<sup>22</sup> The potential impacts of existing and future regulation should be given careful consideration when weighing whether or not to include a particular company or share class as part of an overall allocation to China. However, these same companies and sectors are widely regarded as representing China's "new" economy and cannot simply be ignored.

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**Exhibit 9: Historical averages of ICB sector weightings across China's share classes<sup>23</sup>**



Source: FTSE Russell. Data as of June 30, 2016.

In an attempt to bring the disparate sector exposures together we have created two hypothetical weighted-average indexes to glimpse what a "total" China apportionment might look like. We will assume for the purpose of this scenario that the indexes generally do not include the A-share and H-share classes simultaneously. In order to isolate the effects of including one share class versus the other on the "total" China universe, we have created our two indexes by including either A-shares (burgundy bars), or H-shares (gray bars), but not both. As shown in Exhibit 10, the exclusion of A-shares can create some significant differences in the resulting composition of the index, despite including all the other share classes. Setting accessibility issues aside, let us assume that the index including A-shares is the most comprehensive representation of the China-based equity market. We can see that, as compared to a mature economy like the US where the Technology and Healthcare sectors each have a weight of approximately 15% within the Russell 3000 Index, the modest weights of those

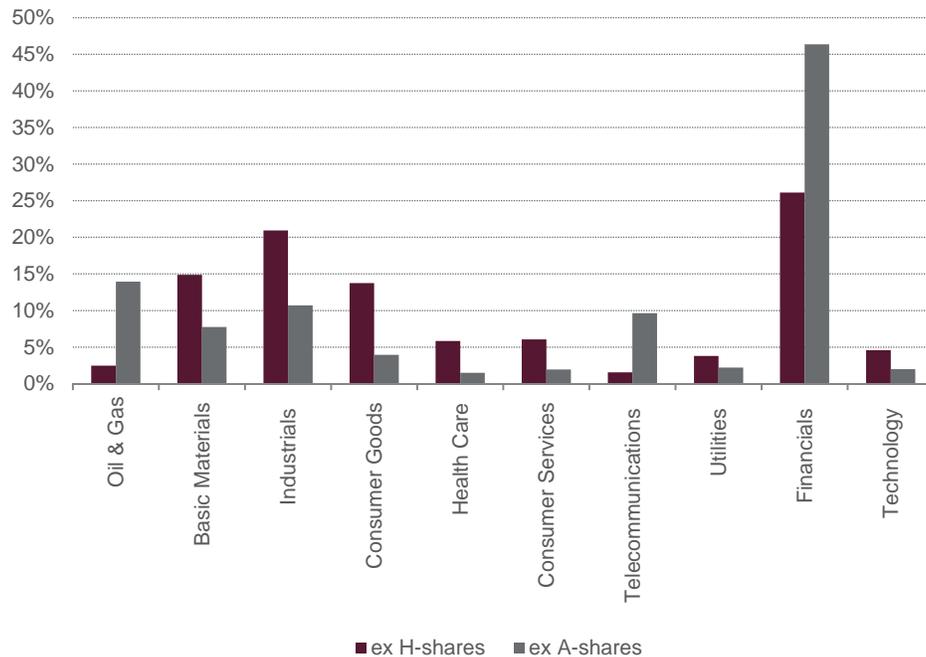
<sup>22</sup> Clover, C. (2015). China proposes to change status of foreign stakes in tech sector. *Financial Times*, accessed on June 15, 2016 at: <http://www.ft.com/cms/s/0/dc6b479a-a211-11e4-aba2-00144feab7de.html#axzz4HcMmcSyg>

<sup>23</sup> Represents the historical averages from sector weightings as of December 31 from 2004-2015.

same sectors in China may have room to grow, especially as China's demographics change.

Using a FTSE China A Inclusion Index Series index and a corresponding FTSE Global Equity Index Series index (e.g. Global, All World, Emerging) allows the market participant to conduct a similar contrast of index characteristics with and without A-shares across a broadened universe of countries.<sup>24</sup>

**Exhibit 10: Averaged ICB sector weights within simulated ex-H-shares and ex-A-shares indexes<sup>25</sup>**



Source: FTSE Russell as of June 30, 2016. Past performance is no guarantee of future performance. Please see the end page for important legal disclosures.

**Fundamental characteristics**

The final element in our analysis of the characteristics that give each share class a unique DNA examines a set of three fundamental characteristics: dividend yield, price-to-earnings (P/E) and return-on-equity (ROE). These characteristics are widely used by market participants to assess relative valuation, relative quality and total return potential. We turn our attention first to dividend yield, where we find an understanding of the sector exposures as presented Exhibit 9 is useful in understanding the differences. Remember that H-shares have the highest exposures to the Financials and Oil & Gas sectors, which are traditionally strong dividend payers. So it comes as no surprise that the H-shares index (teal line) has historically recorded one of the highest dividend yields among the China share classes – Exhibit 11. A-shares and the Technology sector concentrated

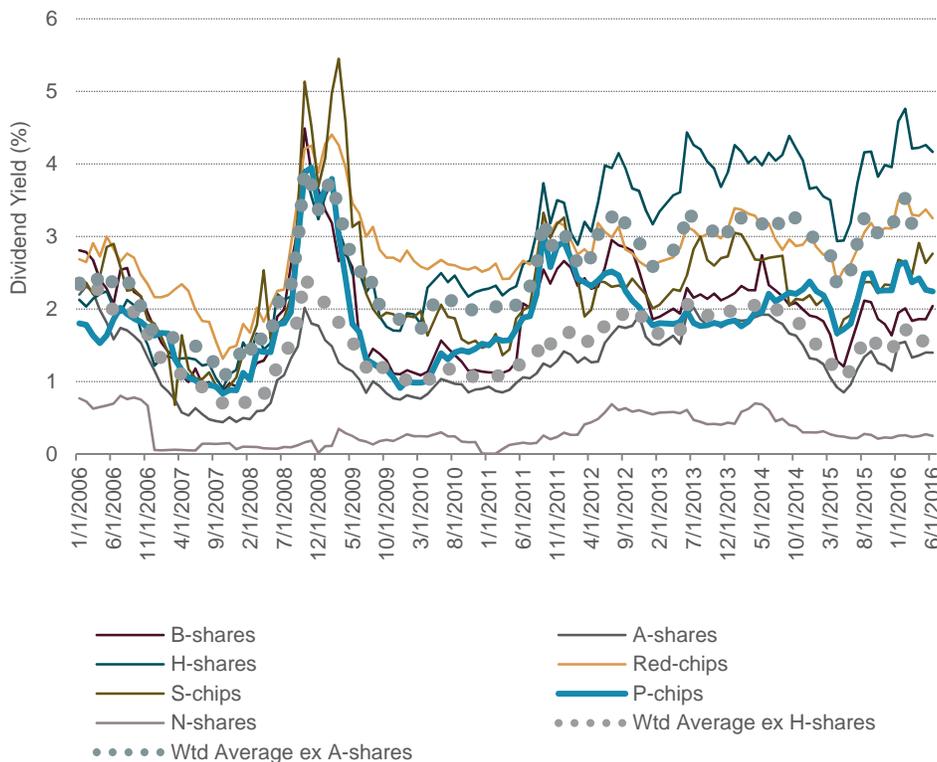
<sup>24</sup> For more information on the FTSE China A Inclusion Index Series please visit: <http://www.ftserussell.com/files/research/managing-transition-ftse-global-china-inclusion-indexes>

<sup>25</sup> Each sector weight represents the 2004 – 2015 average of the summed products of the ICB sector weight and corresponding share class weight (excluding H-shares or A-shares) as of December 31<sup>st</sup>.

N-shares indexes have the lowest historical dividend yields of the share class indexes.

Similar to Exhibit 10, above, we have created two simulated weighted indexes, one excluding H-shares, the other excluding A-shares, that provide a view of our three fundamental characteristics at the total index level. The dotted lines in Exhibit 11 track the two weighted averages and show the impact to the index dividend yield of including H-shares compared with A-shares. With H-shares, the weighted average dividend yield hovers around 3%; with A-shares it falls beneath 2%.

**Exhibit 11: Dividend yield of China’s share classes and simulated weighted index averages<sup>26</sup>**



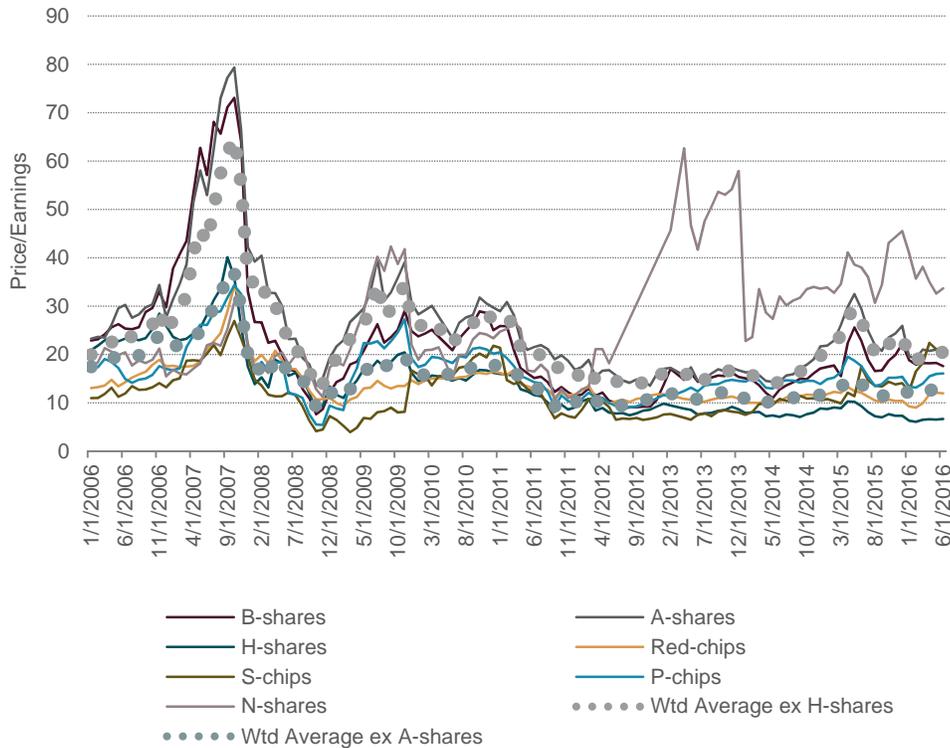
Source: FTSE Russell as of June 30, 2016. References to A-shares are to the FTSE China A All-Share Index. References to B-shares are to the FTSE China B All-Share Index. References to H-shares are to the FTSE China H-share Index. References to N-shares are to the FTSE China N Share All-Cap Capped Index. References to Red-chips are to the FTSE Hong Kong Red Chips Index. References to P-chips are to the FTSE P Chip All Cap Capped Index. References to S-chips are to the FTSE China S Chip All Cap Index. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures

As measured by price-to-earnings (P/E), A-shares and the tech-heavy N-shares have historically been the most “expensive” share classes. Red-chips and H-shares have been the “cheapest” of the group. Since 2012, the P/E of N-shares has broken away from the pack as investors have been willing to pay more for their expectations of the future growth potential of these companies. As with dividend yield, the choice between A-shares and H-shares creates a

<sup>26</sup> The simulated weighted average indexes were calculated using the summed products of the monthly ROE and the corresponding share class weight (excluding H-shares or A-shares) as of December 31 of the previous year.

meaningful difference between our simulated weighted index average P/E. With A-shares (ex-H-shares), the weighted average P/E has moved in a range around 20. By excluding A-shares, the weighted average P/E falls to a range around 12.

**Exhibit 12: Price-to-earnings (P/E) of China's share classes and simulated weighted index averages<sup>27,28</sup>**



Source: FTSE Russell as of June 30, 2016. References to A-shares are to the FTSE China A All-Share Index. References to B-shares are to the FTSE China B All-Share Index. References to H-shares are to the FTSE China H-share Index. References to N-shares are to the FTSE China N Share All-Cap Capped Index. References to Red-chips are to the FTSE Hong Kong Red Chips Index. References to P-chips are to the FTSE P Chip All Cap Capped Index. References to S-chips are to the FTSE China S Chip All Cap Index. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures

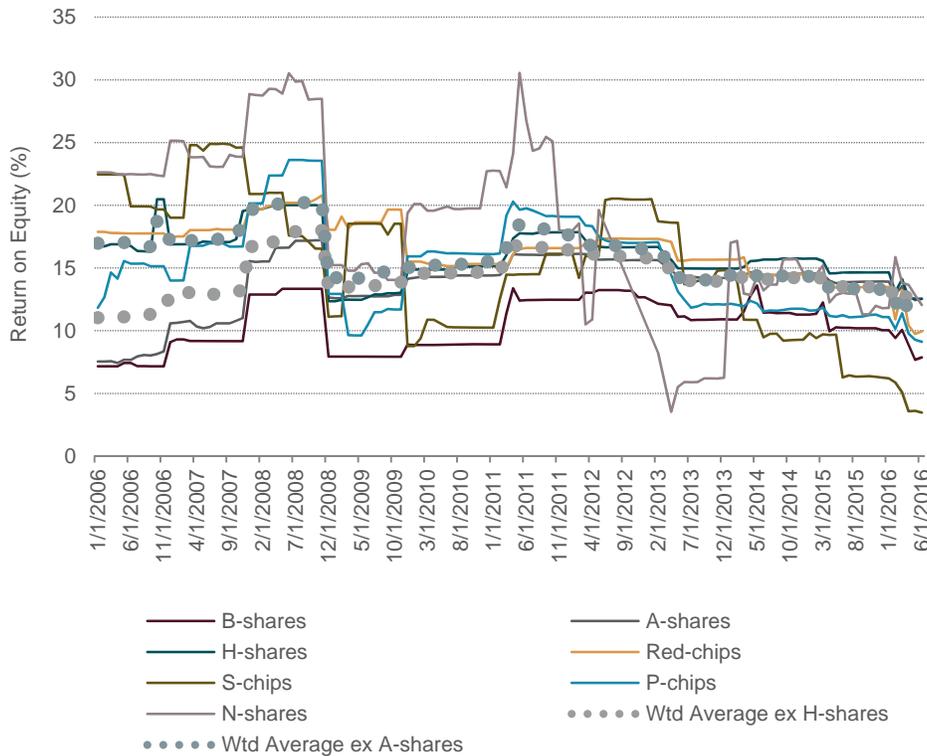
Return-on-equity (ROE) is the last in our sample set of three fundamental characteristics and a common measure of quality. The balance sheet-focused ROE is a useful compliment to dividend yield and P/E, which are driven by market pricing. N-shares have consistently had one of the highest ROEs among China's share classes which may provide some support for the elevated P/E we observed in Exhibit 12. S-chips have been specifically affected by accounting inaccuracies involving overstated earnings; the ROE for the share class has been among the lowest of China's seven share types. Our simulated indexes

<sup>27</sup> As part of our data results, a ten-month period of abnormal results for the P/E of N-shares between May, 2012 and February, 2013; and a two-month period of abnormal results for the P/E of S-chips between February 2016 and March, 2016, were observed. For the N-shares values, we took the trailing 12-month average and the forward 12-month average on either side of the outlier period and applied a decaying weighted approach that began with a 90:10 (trailing vs. forward) mix which then shifted 10% of the weight to the forward average in each successive month. For the S-chip values, we took the trailing 12-month average and the forward 3-month average on either side of the outlier period and applied a decaying weighted approach that began with a 60:40 (trailing vs. forward) mix which then shifted 20% of the weight to the forward average in the following month.

<sup>28</sup> The simulated weighted average indexes were calculated using the summed products of the monthly P/E and the corresponding share class weight (excluding H-shares or A-shares) as of December 31<sup>st</sup> of the previous year.

show a convergence in the difference between including H-shares compared with A-shares. That the weighted average ROEs of the ex-H-shares and ex-A-shares indexes have tracked closely post financial crisis is an expected result of the overlap at the company level between the two share classes.

**Exhibit 13: Return-on-equity (ROE) of China’s share classes and simulated weighted index averages<sup>29,30</sup>**



Source: FTSE Russell as of June 30, 2016. References to A-shares are to the FTSE China A All-Share Index. References to B-shares are to the FTSE China B All-Share Index. References to H-shares are to the FTSE China H-share Index. References to N-shares are to the FTSE China N Share All-Cap Capped Index. References to Red-chips are to the FTSE Hong Kong Red Chips Index. References to P-chips are to the FTSE P Chip All Cap Capped Index. References to S-chips are to the FTSE China S Chip All Cap Index. Past performance is no guarantee of future results. Returns shown may reflect hypothetical historical performance. Please see the end page for important legal disclosures

29 As part of our data results, a ten-month period of abnormal results for the ROE of N-shares between May, 2012 and February, 2013; and a two-month period of abnormal results for the ROE of S-chips between February 2016 and March, 2016, were observed. For the N-shares values, we took the trailing 12-month average and the forward 12-month average on either side of the outlier period and applied a decaying weighted approach that began with a 90:10 (trailing vs. forward) mix which then shifted 10% of the weight to the forward average in each successive month. For the S-chip values, we took the trailing 12-month average and the forward 3-month average on either side of the outlier period and applied a decaying weighted approach that began with a 60:40 (trailing vs. forward) mix which then shifted 20% of the weight to the forward average in the following month.

30 The simulated weighted average indexes were calculated using the summed products of the monthly ROE and the corresponding share class weight (excluding H-shares or A-shares) as of December 31<sup>st</sup> of the previous year.

# Inclusion among indexes and investment products

## Indexes

The representation of China's equity market by index providers has approximated the introduction of its share classes – one step at a time. Though there are now “Greater China” index options that include a mix of the share classes from China along with domestic stocks from Taiwan and Hong Kong, H-shares continue to be the predominate route into China for global investors.<sup>31</sup> However, that dynamic is gradually starting to change as the barriers to direct investment in mainland China stocks fall away.<sup>32</sup> A-shares remain on FTSE Russell's “watch list” for classification as an emerging market, the condition which would allow the A-share class into the applicable global and emerging indexes.<sup>33</sup> Similarly, N-shares have been excluded from some global indexes due to the above-mentioned combination of governance and regulatory concerns.

## Investment products

The topography of China-based investment reflects the development of the country's equity market from the outside in. Surveying Morningstar's database of China-based equity funds, we were able to divide the market into four categories: active and passive funds, and of those, which excluded A-shares compared with those that were focused on A-shares. Exhibit 14 displays both the AUM growth of actively managed China funds over time, and the number of funds in this space. Not surprisingly, due to the accessibility issues that still remain, there is a significantly larger base of assets and products associated with funds that forgo an exposure to A-shares. Through the first half of 2016 there was approximately 35B USD spread across nearly 500 funds that do not include A-shares. These figures compare to ~3B USD and 130 funds invested in A-shares. The composition of the non-A-share funds, as well as number of A-share specific offerings, could change dramatically as China opens up and once A-shares are added to standard benchmarks.

*The AUM of passive funds focused on China is almost evenly split between A-share and non-A-share products despite a smaller number of A-share offerings.*

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31 For more information on the types of FTSE China Indexes available please visit:

[http://www.ftserussell.com/index-series/index-spotlights/china-indexes?\\_ga=1.141247606.598541195.1471468497](http://www.ftserussell.com/index-series/index-spotlights/china-indexes?_ga=1.141247606.598541195.1471468497)

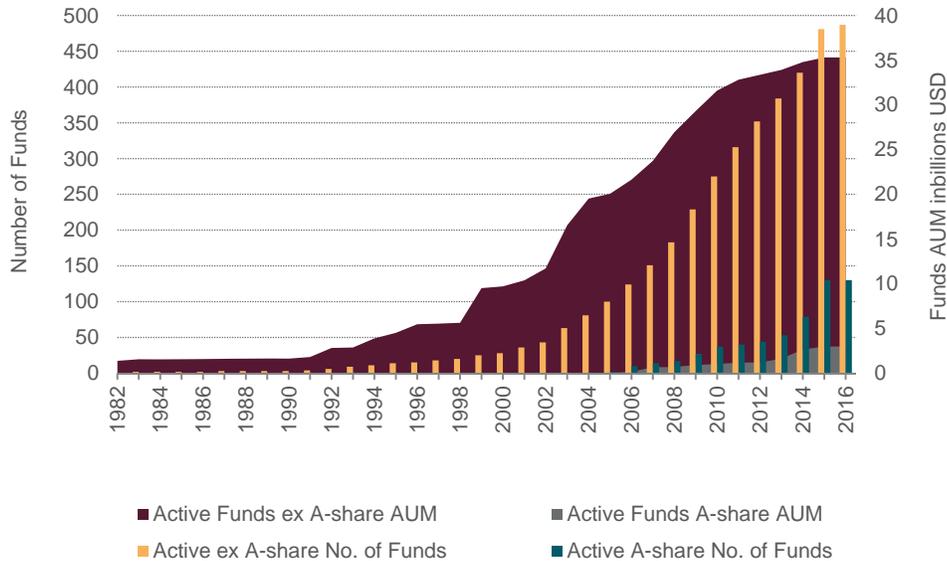
32 For more information regarding China's progress towards inclusion in global benchmarks please see:

[http://www.ftserussell.com/sites/default/files/research/preparing\\_for\\_chinas\\_inclusion\\_in\\_global\\_benchmarks\\_final.pdf](http://www.ftserussell.com/sites/default/files/research/preparing_for_chinas_inclusion_in_global_benchmarks_final.pdf)

33 For more information about FTSE's Country Classification process and outcomes please visit:

<http://www.ftse.com/products/indices/country-classification>

## Exhibit 14: Actively managed China-based equity funds

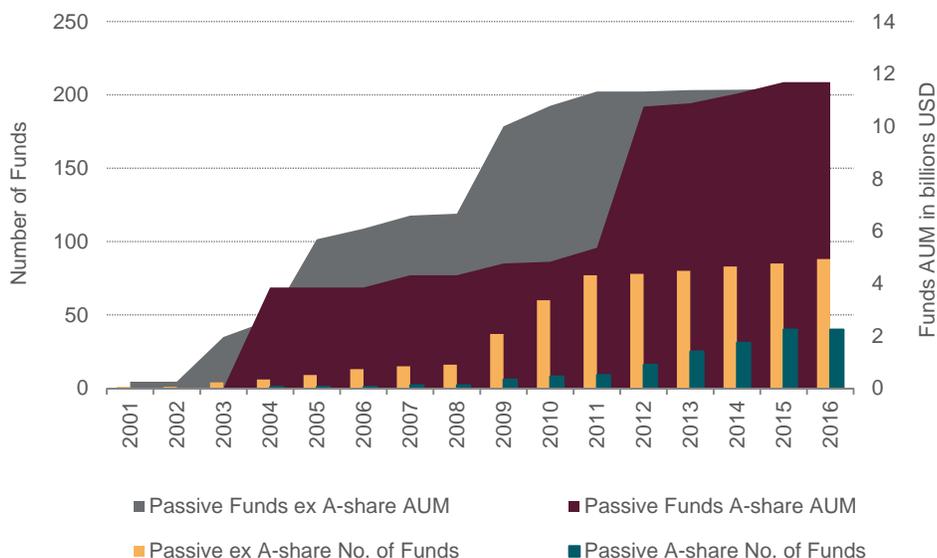


Source: Morningstar as of June 30, 2016.

The AUM of passive funds focused on China is almost evenly split between A-share and non-A-share products despite a smaller number of A-share offerings. The distinctly stair-stepped nature of AUM growth in passive products tracking an A-share benchmark marks the two periods of enhanced accessibility of the A-shares market for foreign investors. The first jump in assets followed the 2002 launch of China's Qualified Foreign Institutional Investor (QFII) program which provided access to A-shares under a tightly managed quota system. The second step up has occurred during a new period of openness to foreign investment that began with introduction of the Renminbi Qualified Foreign Institutional Investor (RQFII) program in 2011 and has seen a wide range of market reforms since. A third "step" in the growth of passive assets may be driven by the addition of A-shares in to global and emerging markets benchmarks, where, given the magnitude of its projected size, China may be managed as a stand alone country exposure similar to the US.<sup>34</sup>

34 Chan, E., Perrett, J. & Pong, E. (2014). Preparing for China's Inclusion in Global Benchmarks. *The Journal of Index Investing*, Vol. 5, No. 3, pp. 33-45; and, Ottawa, B. (2011). China could become 'separate asset class' says RCM. Investment & Pensions Europe, accessed on June 14, 2016 at: <http://www.ipe.com/china-could-become-separate-asset-class-says-rcm/40518.fullarticle>

## Exhibit 15: Passively managed China-based equity funds



Source: Morningstar as of June 30, 2016.

## Conclusions

China's share classes represent the arc of the country's transformation from an inward-facing society to bustling center of global commerce. Each new share class has marked both an increased openness and often a new phase in China's economic development. B-shares were the first invitation to foreign equity investors to participate in what was to be a rapidly expanding and diversifying economy. Red-chips are an acknowledgment of the need for reform, including better governance, but also the spillover effect of a growing Telecommunications sector. N-shares and P-chips provide foreign investor access to e-businesses that tap into the rapidly growing middle class consumer base in China.

At times, the speed of China's economic development has out-gained the measured pace of its reforms promoting openness. This friction has led to the concentrations of certain industries that are listed outside of mainland China. It also explains why A-shares, despite good progress, remain on FTSE's country classification watch list for eligibility as an emerging market. One day in the not too distant future, China's openness will allow for the inclusion of A-shares in global benchmarks. The inclusion of A-shares will mark another milestone in the development of the country and ripple across the investment products landscape. But China's story, as told by its share classes, won't end there. It will simply be a new beginning for a market that had its first more than 120 years ago.

## **For more information about our indexes, please visit [ftserussell.com](http://ftserussell.com).**

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