The ‘new’ investment case for China for global/A-share investors

**SH-HK Stock Connect: Redefining the Chinese equity market**

The Connect scheme brings China A to the global arena and potentially unleashes significant portfolio flows from China to HK. We provide a framework for the new market landscape for global and A-share investors.

**Global investors: China A is too important to ignore**

1. The scheme creates a single ‘China’ market which ranks as the 2nd/3rd largest globally by cap/turnover, and adds 855 US$1bn companies to the investable universe. 2. China A will likely be included in global benchmarks soon, based on Korea’s and Taiwan’s experience. 3. Global investors may be able to trade China growth more efficiently in China A. Key micro overlays for stock picking may revolve around scarcity value, GDP proxy, high/stable yields, QFII ownership, and proper management incentive.

**A-share investors: Diversification, undervalued growth in HK**

The scheme allows Chinese households to diversify their inefficient asset allocation: 72% in property, 6% in equities. Their investment behavior and demand for diversification suggest they may focus on: (1) mid-cap growth stocks, including select dual-listed H on possible re-rating; (2) HK blue chips with global footprint; and (3) household brands not available in A.

**Think ahead and get prepared**

a) Future roadmap of the scheme; b) A-H valuation convergence; c) market impact of liberalization; d) end game for B shares; e) competition between SH and HK ; and f) business challenges for investors

*This report is a modified version of SH-HK Connect: New regime, unprecedented opportunity, originally published on Sep 1, 2014.*
Executive summary

A paradigm shift presents new opportunities

The SH-HK Stock Connect Scheme will likely commence in October this year, based on guidance from the exchanges when the scheme was first announced in April 2014. In this report, we aim to look beyond the short-term flow and investment implications, and focus on the structural opportunities and the new investment case for Chinese equities that this policy breakthrough may offer global and A-share investors. For our analytical purpose, we assume full liberalization of the scheme throughout this report unless otherwise stated. Our analysis and conclusions are structured as follows:

Part 1: Global investors—China A will become too big to ignore

- The scheme essentially integrates China A and HK, creates the 2nd/3rd largest equity market globally by market cap/turnover, and opens up the largely internally-driven China A shares to global investors. Close to US$4tn of incremental market cap and 855 companies (ex dual-listed) with above US$1bn of market cap will become accessible to investors through HK (568 companies with US$2.4tn on current configuration).
- We believe China A will soon be included in global equity benchmarks, expedited by the scheme, and supported by the experiences from Korea and Taiwan during their respective market opening process.
- Global investors may be able to monetize China’s still promising growth in a more efficient and less restrictive manner in A than has previously been the case.
- Other appeals: (1) High and stable dividend yields, and (2) Positive portfolio effects.

Part 2: A-share investors—Diversification, underpriced growth in HK

- Chinese household asset allocation is far from efficient: 72% in real estate, 6% in equities—They are incentivized to diversify but channels are rather limited.
- HK-listed stocks provide three themes of diversification: (1) Geographic (non-China revenues); (2) Sector (scarcity value); and (3) Business (Chinese household brands).
- A-share investors are biased towards growth and small caps—HK-listed stocks with similar profile and relatively low valuations than in A could re-rate.

Part 3: Think ahead and get prepared

- Future roadmap of the scheme: We see upside risk to both the scale and scope.
- End game for B shares: Likely more B-H conversion to take place.
- Shanghai vs. HK: Not a zero-sum game as two-way flows could be significant.
- Challenges: Revenue opportunities for investors will come with higher cost base.
Exhibit 1: What is the Shanghai-Hong Kong Stock Connect Scheme?

**Connectivity Model**

**Northbound**
- New Stock Connect Quota – RMB 300bn (~US$48bn, 33% of total)

**Existing (R)QFII Quotas – ~RMB 60bn (~US$96.848bn)**
- RMB 13bn (~US$2.1bn) daily quota (19% of SSE securities’ ADVT)
- RMB 300bn aggregated quota (~5% of SSE securities’ estimated float)

**Southbound**
- New Stock Connect Quota – RMB 250bn (~US$40bn, 33% of total)

**Existing QDII Quota – ~RMB 499bn (US$80.493bn)**
- RMB 10.5bn daily quota (~US$1.7bn) 33% of SEHK securities’ ADVT
- RMB 250bn aggregated quota (~3% of SEHK securities’ estimated float)

**Market Comparison**

**Northbound (to SSE)**
- Eligible Investors: Institutional investors (no restrictions on account balance)
- Retail investors with account balance > RMB 500,000
- Investible World: 568 Eligible Names
  - SSE 180 Index / 380 Index
  - Dual-listed A & H shares listed SSE
- Market Hours:
  - Opening Call Auction (09:15 – 09:25)
  - Morning Continuous Auction (09:30 – 11:30)
  - Afternoon Continuous Auction (13:00 – 15:00)
- Order Types:
  - Limit only (no amends, must cancel & re-enter)
  - Block / Manual Trades
  - Short Selling TBC (no naked shorts)
  - Securities Lending TBC (offshore)
  - Margin Trading TBC (offshore)
  - Intra-day Trading
- Pre-trade Checks:
  - Broker level checks on Sells (based on T-1 holdings)
  - Individual level checks on Buys (money) and Sells (stock)
- Trading Currency: RMB for trading & settlement
- Settlement Cycle:
  - T-day (stock), T+1 (money)
- Intra-day Trading: X
- Margin Trading: TBC (offshore)
- Securities Lending: TBC (offshore)
- Short Selling: TBC (no naked shorts)
- Block / Manual Trades: X (block not allowed / manual not supported)
- Settlement Cycle: T+2 (DVP)
- Confirmed Fees & Taxes (New CCASS fee, Mainland Dividend & Capital Gains taxes TBD):
  - Handling Fee (SSE)
  - Securities Mgmt. Fee (CSRC)
  - Seller Stamp Duty (SAT)
  - Clearing: Transfer Fee (ChinaClear) – Note par
  - Buy/ Sell Stamp Duty (HKIRD)
  - Transaction Levy (HKSFC)
  - Trading Fee (HKEx)
  - Clearing: Settlement Fee (CCASS)
- Handling Fee: 0.096 bps
  - 0.200 bps
  - 0.696 bps
  - 10.000 bps
- Clearing: Settlement Fee: 0.500 bps
- Buy/ Sell Stamp Duty: 0.300 bps
- Transaction Levy: 10.000 bps
- Trading Fee: HKD$2 - $100

**Southbound (to HKEx)**
- Eligible Investors: Retail investors
- Investible World: 266 Eligible Names
  - Hang Seng Composite LargeCap & MidCap Indices
  - Dual-listed A & H shares listed SSE
- Market Hours:
  - Pre-opening Session (09:00 – 09:30)
  - Opening Call Auction (09:30 – 11:00)
  - At Auction (Pre-opening)
- Order Types:
  - At Auction (Pre-opening)
  - Enhanced Limit (Continuous Trading)
- Pre-trade Checks:
  - No amends, must cancel & re-enter
- Trading Currency: HKD to trade, RMB to settle
- Settlement Cycle:
  - T-day (stock), T+1 (money)
- Intra-day Trading:
- Margin Trading: X
- Securities Lending: X
- Odd Lots: X
- Block / Manual Trades: X (block not supported / manual not allowed)
- Settlement Cycle: T+2 (DVP)
- Confirmed Fees & Taxes:
  - Handling Fee (SSE)
  - Securities Mgmt. Fee (CSRC)
  - Seller Stamp Duty (SAT)
  - Clearing: Transfer Fee (ChinaClear) – Note par
  - Buy/ Sell Stamp Duty (HKIRD)
  - Transaction Levy (HKSFC)
  - Trading Fee (HKEx)
  - Clearing: Settlement Fee (CCASS)
- Handling Fee: 0.096 bps
  - 0.200 bps
  - 10.000 bps
- Clearing: Settlement Fee: 0.500 bps
- Buy/ Sell Stamp Duty: 0.300 bps
- Transaction Levy: 10.000 bps
- Trading Fee: HKD$2 - $100
- Block / Manual Trades: X

Source: HKEx, SSE, SAFE, CSRC, Goldman Sachs Securities Division, Goldman Sachs Global Investment Research

Exhibit 2: Big picture: It is a part of the broader financial/capital market reform and liberalization process

- Started Personal RMB Business in HK
- Expand HK personal RMB Business
- Non-tradable share reform launched
- Expand RMB Trade Settlement Pilot Scheme
- RMB Trade Settlement pilot scheme
- RMB settlement expanded to whole China
- First RMB-denominated REIT listed
- Personal RMB business expanded to non-locals
- CNH HIBOR fixing launched
- 1. Settlement and Clearing agreement on RMB business between China and Korea
- 2. PBOC abolished quota to Korea and Germany respectively
- Providing RMB 80bn and RMB 80bn RQFII quota to Korea and Germany respectively
- 1. Settlement and Clearing agreement on RMB business between China and Korea
- 2. PBOC abolished pricing restrictions on banks; FX transactions with corporates and households
- Overnight RMB funds on T+0 basis and one-day funds on T+1 basis provided for Authorized Institutions
- SH-HK Stock Connect

Source: HKMA, PBOC, CSRC, SFC, SSE, Goldman Sachs Global Investment Research
Why the scheme is important to global investors

Exhibit 3: The combined A and HK market would be the 2nd largest equity market in the world and the 3rd largest by cash turnover—simply too big to ignore

Source: World Federation of Exchanges, Bloomberg, Goldman Sachs Global Investment Research

Exhibit 4: China A is under-represented in the global equity universe but global investors may find more ‘GDP proxies’ in the market (than in HK)...
Why the scheme is important to A-share investors

Exhibit 6: Chinese household balance sheets seem very skewed to real estate and cash equivalents

Housing assets as % of total household balance sheets

Exhibit 7: A-share investors are incentivized to diversify, and select HK stocks could help achieve that purpose

Exhibit 8: A-share retail investors prefer growth over value, small caps over large, and select underappreciated growth opportunities in HK may appeal to them

Source: OECD, CEIC, Davies et al. (2009), Central banks of respective countries, Goldman Sachs Global Investment Research.
Part 1: The case for Chinese (A-share) equities for global investors

Value proposition #1: Too big to ignore

- The Stock Connect scheme essentially integrates China A and the HK market, creates the world’s 2nd largest equity market by market cap (US$6.7tn) and the 3rd largest in terms of cash trading (US$35.7bn/day). Turnover velocity of the combined market would rank 2nd highest globally, just behind Nasdaq.

- The scheme may add close to US$4tn of incremental market cap, and 855 companies with over US$1bn of listed market cap to the investable universe assuming full liberalization (i.e. global investors can buy all A shares listed in both Shanghai and Shenzhen).

- The new investable universe represents 6.4% and 28.9% of the current MXAPJ market cap on partial (only 568 stocks listed on SHSE) and full liberalization based on free-float market cap. We only count A shares that are not listed in HK and A shares that are priced at a discount to their H-share counterparts in the partial universe.

Exhibit 9: The combined A and HK market could be the 2nd largest equity market in the world (by exchange)...

Exhibit 10: ...and 3rd largest in terms of cash turnover

Exhibit 11: The scheme may add close to US$4tn of incremental market cap to the investable universe assuming full liberalization

Exhibit 12: ...and 1,253 (1,171 ex dual-listed) companies with over US$1bn of listed market cap

Source: World Federation of Exchanges, Bloomberg, Goldman Sachs Global Investment Research

Source: CEIC, Goldman Sachs Global Investment Research.
Value proposition #2: China A will be added to global indexes soon

- MSCI announced in June 2014 that China A will not be included in the MSCI EM index for its upcoming index rebalancing largely due to the investability constraints linked to the QFII/ RQFII quota systems. However, China A will remain on the review list as part of the 2015 review process, results of which are to be revealed in June 2015.
- FTSE announced in June 2014 the launch of the FTSE Global R/QFII Index Series to prepare market participants for the inclusion of China A in FTSE’s standard indices as a separate index. The next review is due in September 2014.
- While China A isn’t in major global benchmarks yet, we believe the conditions for it to be included are already in place because:
  - China has further liberalized the A-share market by raising the size of QFII and RQFII, and broadening the scope of these programs geographically.
  - Although the Stock Connect is still subject to quota restrictions, it significantly improves the accessibility of China A to foreign investors, with the total Northbound quota representing close to 5%/20% of the existing free-float market cap/daily turnover of the Shanghai Stock Exchange.
  - Based on the past experiences from Korea and Taiwan during their capital market opening processes, it seems China A is not far from being included in terms of the progress made on financial market liberalization, in our view.

- We think the potential inclusion of China A in global equity benchmarks may catalyze a catchup of allocations to China by global investors as it is currently under-represented in the global equity market universe relative to its economic influence: China is 12.3% of global GDP, 11.3% of global trade, 23.1% of global FAI, and 7.9% of global consumption but China’s weight in MSCI AC World is only 2.2%. Furthermore, investors are generally underweight Chinese equities, as suggested by our positioning analysis (in the offshore market) and the low QFII ownership of 3.0% in the A-share market. If China A were to be included in MSCI global benchmark in the next review, we estimate it could result in US$5.3bn/US$21bn of passive fund buying in 2016 assuming a 5%/20% inclusion factor (IF).

Exhibit 13: Korea’s and Taiwan’s experience suggests the conditions for A-share inclusion to global indexes are in place

Source: MSCI, Local stock exchanges, Goldman Sachs Global Investment Research
Exhibit 14: Chinese equities are under-presented in the equity space and the current foreign ownership is low

Value proposition #3: More opportunities to monetize China growth

- **Chinese equities haven’t been an efficient vehicle for investors to trade China’s strong GDP growth** in the past decade: HSCEI and CSI300 have generated 15% and 10% total return CAGR since 2003, trailing the nominal GDP (US$) CAGR of 18% and underperforming global peers in terms of converting economic growth into equity returns.

- The slippages between delivered equity returns and economic growth have been mainly driven by the **volatility of valuation changes** while corporate revenue and earnings have tracked macro growth reasonably well in A shares (Exhibits 16 and 17)

- Looking ahead, we think the efficiency of equity tracking economic growth may improve because:
  - **Valuations are already at historically and cyclically low levels**, measured by both P/E and P/B, thereby reducing valuation volatility, at least to the downside, in our view.
  - The opening up of the A-share market may allow investors to capture China growth in a more efficient manner as the **fundamentals (sales and earnings growth) of many A-share sectors seem more sensitive to economic growth than China stocks listed in HK**, and these sectors tend to have **better depth** (market cap, liquidity) and **breadth** (number of companies) relative to the HK market.
  - Investors have the opportunity to invest in ‘**scarce**’ sectors which are only available in the onshore market. Importantly, these sectors usually operate in niche markets where the sensitivity to policy swings and cyclical volatility tends to be lower than the traditional cyclical, FAI-related sectors, which make up a significant portion of the offshore equity universe.
Exhibit 15: Equity returns have trailed economic growth in China in the past decade

Exhibit 16: Earnings growth has been tracking GDP growth quite well but not for stock returns

Exhibit 17: High base and valuation volatility has been a key culprit for the lackluster headline index returns

Exhibit 18: Valuations (ex- and cum-banks) are at historically and cyclically low levels, suggesting lower downside valuation risks than in the past
Exhibit 19: Global investors may find more opportunities to monetize China growth in select A-share sectors

Average correlation/T-stats of SPSq & EPSq to GDPg, past 10 years

- Exhibit 19: Global investors may find more opportunities to monetize China growth in select A-share sectors

- Exhibit 20: Investors can find specific niche market exposures that are only available in A shares

Value proposition #4: Relatively high yields – compelling with global mandate

- Our economists expect global rates (DM in particular) to stay at low absolute levels in the foreseeable future although the Fed may begin to normalize its zero-interest-rate policy starting 3Q15.
- Markets with high dividend yields, and stable dividend growth and payout profile will continue to be in demand in a low rates environment, in our view. **China A is currently yielding in a range of 2.9% to 4.2%** depending on benchmarks, meaningfully higher than the global aggregate of 2.5%.
- Dividends of China A have also been growing very steadily with low volatility, partly supported by the solid fundamental growth, and partly buttressed by the government’s policy of encouraging dividends in the SOE sector.
- Importantly, the high-yield opportunities seem concentrated in the large-cap, liquid space which may attract interest from global investors with high-yield/income mandates. We estimate the AUM of this subset is about US$1.3tn, of which 30% is eligible to invest in A shares given their geographic focus.
Value proposition #5: Positive portfolio effects

- It is well documented that China A’s return correlation with global equities has been low as foreign investors’ access has been strictly regulated (by the QFII and RQFII programs) and the market (trading activity) is largely dominated by onshore individual investors who tend to embrace different investment objectives and styles than institutional investors globally.

- This unique characteristic of China A means adding it to a typical global, EM, or Asia-focused portfolio, in most cases would likely generate positive portfolio effects, and improve the theoretical efficient frontier in different phases of the business cycle. See Appendix for details.

- However, we reckon that as foreign participation and ownership increase, the benefits of diversification may recede over time as foreign liquidity flows and positioning become more important to market returns. See Part 3 for more analysis on this topic.

Exhibit 25: A shares have exhibited low return correlations with major global markets, given the low foreign investor participation and ownership

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<th>CN-A</th>
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<th>APJ</th>
<th>AeJ</th>
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Source: FactSet, MSCI, Goldman Sachs Global Investment Research.

Exhibit 26: Adding China A to an EM portfolio could provide positive portfolio effects...
Efficient frontier, MSCI China A vs. MSCI EM, past 10 years

Exhibit 27: ...similar to adding to a global equity portfolio
Efficient frontier, MSCI China vs. MSCI ACWI, past 10 years

Source: FactSet, MSCI, Goldman Sachs Global Investment Research.
Part 2: The case for HK-listed equities for A-share investors

Current state: A-share investors need to diversify

- Chinese households’ balance sheets are heavily skewed towards real assets and cash equivalents, with properties accounting for 72% of their total assets (financial assets + real assets) and cash equivalents representing 72% of their financial balance sheets. Equities, including both direct investment and indirect exposures through mutual funds and retirement money, only take up less than 20% of their financial holdings (6% of their total assets), significantly lower than the average of around 60% in more developed economies.

- As such, this creates a situation where the theoretical investment frontier for onshore investors is far from optimal. We believe a combination of factors is responsible for this, including:
  - Limited investment channels (capital account regulations);
  - Specific local investment preference (property-heavy); and,
  - Inefficient interest rate setting mechanism (non-market-based, implicit guarantee of SOE debts).

In the current setup, we estimate the optimal allocation for A-share investors is to heavily overweigh corporate bonds (mainly due to moral hazard inefficiency), funded by government bonds (unattractive risk/reward relative to corporate bonds), with properties and onshore equities combining to around a quarter of the portfolio (Exhibit 29).

- Assuming no drastic changes to the capital account and interest rate profile in the near future, our model suggests adding global equities to the portfolio would enhance the portfolio’s risk/reward tradeoff, with global equities taking shares from all domestic asset classes.

- Indeed, we note that the demand for diversification (or ‘going out’) from Chinese investors (and consumers) has been strong, as evidenced by the rapid rise of outbound FDI, overseas real asset (property) investment, and outbound consumption, although outward equity portfolio flows have been subdued, constrained mainly by the lack of investment channels.

Exhibit 28: Chinese household balance sheets seem very skewed to real assets and cash equivalents

- Housing assets as % of total household balance sheets

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<tr>
<td>Taiwan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>India</td>
<td></td>
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<tr>
<td>Indonesia</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>4</td>
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</table>

- Composition of household financial balance sheets

<table>
<thead>
<tr>
<th>Currency</th>
<th>Others</th>
<th>Other Securities</th>
<th>Insurance &amp; Pension</th>
<th>Mutual Fund</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>72%</td>
<td>15%</td>
<td>9%</td>
<td>11%</td>
<td>17%</td>
<td>33%</td>
</tr>
<tr>
<td>54%</td>
<td>31%</td>
<td>13%</td>
<td>15%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>28%</td>
<td>42%</td>
<td>6%</td>
<td>6%</td>
<td>11%</td>
<td>21%</td>
</tr>
<tr>
<td>45%</td>
<td>37%</td>
<td>8%</td>
<td>2%</td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>22%</td>
<td>46%</td>
<td>6%</td>
<td>10%</td>
<td>18%</td>
<td>28%</td>
</tr>
<tr>
<td>46%</td>
<td>35%</td>
<td>6%</td>
<td>7%</td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>22%</td>
<td>42%</td>
<td>7%</td>
<td>6%</td>
<td>11%</td>
<td>17%</td>
</tr>
<tr>
<td>42%</td>
<td>37%</td>
<td>9%</td>
<td>2%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>15%</td>
<td>31%</td>
<td>3%</td>
<td>11%</td>
<td>33%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Note: OECD countries as of 2010; others as of 2000 except stated otherwise

Source: OECD, CEIC, Davies et al. (2009), Central banks of respective countries, Goldman Sachs Global Investment Research.
Exhibit 29: Adding international equities to a typical onshore investor’s portfolio could improve the risk/reward tradeoff

Note (1): We use 1-year time deposit rate, S&P China Govt. Bond Index, S&P China Corp. Bond Index, and average building selling price (+ rental yield) to proxy returns for deposit, government bonds, corporate bonds, and properties respectively.

Note (2): Annualized total return is the 10-year CAGR (Loc) for different asset classes; Risk is the annualized standard deviation of monthly returns.

Note (3): The mean-variance efficient frontier (MVEF) is constructed based on the assumption that investors’ goal is to maximize the expected return on their portfolio for a given level of risk taken (i.e. maximizing the mean for a given variance). For every level of expected return, there is a set of portfolio weights that minimizes the return volatility, and thus MVEF is constructed by different sets of optimal portfolio.

Note (4): Optimal combination is calculated based on a hypothetical multi-asset-class portfolio that maximizes the Sharpe ratio with risk-free rate being assumed to be the 1-year time deposit rate. Investors with different risk appetites are expected to hold different optimal portfolios lying on the MVEF that offers the best possible expected return at a given risk level.

Source: FactSet, Bloomberg, Wind, CEIC, Goldman Sachs Global Investment Research.

Exhibit 30: Demand for ‘going out’ is strong...

Note: Outbound FDI is from Bloomberg. Total Chinese spending overseas is from World Tourism Organization, Real Estate investment overseas is from Jones Lang Lasalle.

Source: Bloomberg, World Tourism Organization, Jones Lang Lasalle, Goldman Sachs Global Investment Research

Exhibit 31: ...but portfolio flows (both in and out) are constrained by the capital account regulations

Source: Bloomberg, CEIC, Goldman Sachs Global Investment Research
Value proposition #1: Three themes of diversification in HK

We see HK’s diversification appeal for A-share investors coming from 3 different angles:

- **Revenue diversification**: A-share companies’ revenues, and to a large extent H-share companies, are China-centric, with China A and H generating less than 10% of their total revenues from non HK/China regions.

In HK, using the MSCI HK index as a proxy, HK companies generated over 30% of their sales overseas, with a number of the largest listed companies in HK (excluding A-H dual-listings) boasting significant business footprints in non HK/China regions.

Looking ahead, the well-developed capital market infrastructure, efficient market access, and enhanced integration with China (HK’s hinterland) should continue to help attract multinational and emerging companies to list their shares in HK, further reinforcing HK’s status as the financial gateway of liquidity flows in and out of China.

- **Sector diversification**: Similar to the argument for global investors who look to broaden their investment frontier in the A-share market, we believe A-share investors would embrace a similar mentality when they position in the HK market. Upstream oil/gas producers, Macau gaming, and property/casualty insurance are the three major sectors that are available only in HK and not in China A, based on GICS sub-industry classification (level 4).

- **Business diversification**: A-share investors (and press) often bemoan the fact that some of the Chinese household brand names are not listed domestically and hence they are unable to monetize the growth opportunities that these companies may offer. Based on Interbrand’s ranking, we note that 12 out of the top-50 Chinese brands are only listed in HK, with a combined brand value of over US$300bn by Interbrand’s valuation methodology.

**Exhibit 32**: Select HK stocks offer geographic exposure diversification to A-share investors

**Exhibit 33**: Top-10 largest stocks in HK (ex H shares) generated a large portion of their revenues overseas

**Exhibit 34**: Upstream oil/gas companies, Macau gaming, and P&C insurance are not available in the A-share market

<table>
<thead>
<tr>
<th>GICS Sub-industry</th>
<th>Industry availability</th>
<th># of companies</th>
<th>Total freefloat market cap (US$ mn)</th>
<th>Average Freefloat market cap (US$ mn)</th>
<th>Total industry ADVT (US$ mn)</th>
<th>Average company ADVT (US$ mn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil &amp; Gas Exploration &amp; Production</td>
<td>HK v  A X</td>
<td>6</td>
<td>41,197</td>
<td>6,996</td>
<td>119</td>
<td>20</td>
</tr>
<tr>
<td>Casinos &amp; Gaming</td>
<td>HK v  A X</td>
<td>8</td>
<td>58,718</td>
<td>7,340</td>
<td>320</td>
<td>40</td>
</tr>
<tr>
<td>Property &amp; Casualty Insurance</td>
<td>HK v  A X</td>
<td>2</td>
<td>7,867</td>
<td>3,934</td>
<td>23</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Bloomberg, FactSet, MSCI, Goldman Sachs Global Investment Research.
Value proposition #2: Underappreciated growth opportunities

- **A strong preference towards growth and small caps.** Given onshore individual investors are likely to be the key participants in the scheme (institutional investors can invest overseas through QDII), we feel it is important to understand their investment behavior.

Exhibits 36 and 37 compare the retail ownership of stocks based on their perceived proposition to investors and their liquidity profile in terms of market cap and turnover velocity. It seems clear that A-share retail investors have shown a strong preference towards growth over value, and with noticeable small-mid-cap bias. Sectorally, they seem to favor tech (both Semi and Hardware), ‘New China’ such as Internet and Media, and select consumer sectors including retailing and staples, partly reflecting the abovementioned style and liquidity partiality.

- **Growth stocks are in demand in China A.** Onshore retail investors’ investment preference, coupled with the fact that they represent 82% of the aggregate A-share market turnover, has led to a phenomenon where high-growth, mid-cap stocks in China A are trading at meaningfully higher valuations relative to their offshore-listed comparables (including ADRs). From a PEG (price-to-earnings-growth) standpoint, growth stocks in China A are priced at close to a 100% premium vs. their offshore counterparts (Exhibits 39 and 40).

- **Potential re-rating of select growth stocks in HK.** We think it is reasonable to expect the A-H valuation gaps to gradually narrow, facilitated by the improving liquidity porosity between China A and H on the back of the scheme. That said, considering the investment style of both A and HK investors and the potential costs of engaging in that trade, we believe the re-rating opportunities will likely manifest in:
  - Small/mid cap universe;
  - High-growth stocks;
  - Select sectors, mostly from non-traditional spaces that offer strong growth but are priced at discounts to A.
  - Select dual-listed names that trade at H-share discounts to A.

Exhibit 37: Retail investors are arguably the marginal price setter in China A given their lion’s share of turnover.

Exhibit 38: A-share investors seem to favor ‘New China’ sectors and tech companies.

Source: CEIC, Goldman Sachs Global Investment Research

Exhibit 39: ‘New China’ and high-growth stocks are generally priced more attractively in HK than in China A...

Exhibit 40: ...also with lower PEG ratios.

Source: Wind, Goldman Sachs Global Investment Research

Exhibit 41: Select sectors in HK offer high growth but at discounts to their A-share peers.

Source: Bloomberg, FactSet, IBES, Wind, Goldman Sachs Global Investment Research.
Part 3: Think ahead and be prepared

#1: Future roadmap

While the Stock-Connect scheme is undoubtedly a major policy breakthrough in the context of the Chinese capital market, we see this as one of the key steps and milestones in the overall market liberalization regime, because:

- It is an important piece of the broader reform puzzles in China, linking financial market reforms (Rmb internationalization, market efficiency) and SOE reforms (foreign capital participation and SOE restructuring), which we view as the top priority in the policy agenda. Hence it is backed by strong political commitments, implying upside risk to both the scale and scope.

- Experiences of previously announced market liberalization measures, including QFII, QDII, and RQFII, suggest the scheme could gradually expand, especially when the relevant regulatory bodies gain confidence about the executional issues as it develops. In numbers, we forecast the accumulative outward (from China) and inward equity investment portfolio flows attributable to the scheme to exceed **US$1tn and US$2tn by 2020**, translating into significant revenue opportunities for market intermediaries including exchange operators and brokers.

Exhibit 42: The scheme is one of the major pieces in the broader reform agenda in China

<table>
<thead>
<tr>
<th>Key areas of reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal reforms</td>
</tr>
<tr>
<td>Financial market reforms</td>
</tr>
<tr>
<td>SOE reforms</td>
</tr>
<tr>
<td>Land/rural/hukou reforms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>POLICIES/DEVELOPMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division of responsibility and spending</td>
<td>VAT reform extended to Telecom industry</td>
</tr>
<tr>
<td>rights between the central and local</td>
<td>Suggested budget management and tax collection system</td>
</tr>
<tr>
<td>govs, more transparency and accountability</td>
<td>modification</td>
</tr>
<tr>
<td>on spending responsibilities, and a more</td>
<td>Further discussion of introducing property tax (by State Council)</td>
</tr>
<tr>
<td>sustainable fiscal revenue model.</td>
<td>Allowing local govt to issue debt on a trial basis</td>
</tr>
<tr>
<td>Increasing the role of market forces,</td>
<td>- Expanded CNYUSD trading band</td>
</tr>
<tr>
<td>improving transparency and efficiency of</td>
<td>- Preferred share issuance pilot program</td>
</tr>
<tr>
<td>financial markets, reinforcing the mutual</td>
<td>- SH-HK Stock Connect scheme</td>
</tr>
<tr>
<td>beneficial relationship between the real</td>
<td>- Nine new capital market reform measures</td>
</tr>
<tr>
<td>economy and the financial market.</td>
<td></td>
</tr>
<tr>
<td>Raising competitions between SOE and private</td>
<td>- Lowering ChiNext IPO access indicator</td>
</tr>
<tr>
<td>companies, enhancing SOEs’ profitability</td>
<td>- Banks not allowed to use backdoor transaction that</td>
</tr>
<tr>
<td>by introducing private capital/expertise</td>
<td>involves disguising corporate loan</td>
</tr>
<tr>
<td>and instilling cost awareness, and</td>
<td>- Bank’s L/D ratio adjustment</td>
</tr>
<tr>
<td>encouraging M&amp;As to solve over-capacity.</td>
<td></td>
</tr>
<tr>
<td>Encouraging urbanization, circulation of</td>
<td>- CITIC Pacific acquired CITIC Group’s entire asset</td>
</tr>
<tr>
<td>agricultural land, developing intensive</td>
<td>- Opened up 80 state projects for private investment</td>
</tr>
<tr>
<td>farming, and bringing rural commercial</td>
<td>- PetroChina injected its Eastern China’s asset into a</td>
</tr>
<tr>
<td>collective land into the market to sustain</td>
<td>subsidiary and allowed private investment</td>
</tr>
<tr>
<td>and rebalance growth.</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Goldman Sachs Global Investment Research*
Exhibit 43: Big picture: The scheme is an important part of the broader financial/capital market reform

Exhibit 44: The scale of previously announced market liberalization measures has increased gradually over time

Exhibit 45: Further expansion in terms of scale, scope, and geographic linkages of the Scheme is likely, in our view
#2: A-H valuation convergence

While the aggregate A-share premium has compressed significantly over time, the upcoming Stock Connect has prompted investor questions on (and desire to trade) the price equalization between dual-listed A and H shares, with the former currently trading at a 24% premium on average but 8% discount to H weighted by total market cap.

Given the scope of this report, we focus on the practical aspects without going into the theoretical arguments behind this phenomenon. Again, we feel it is important to understand the following characteristics between the two markets:

- **Style difference:** As shown in Exhibits 35 and 36, A-share investors generally prefer growth over value, and small caps over large caps, while offshore investors in HK tend to focus more on valuations, relatively speaking.

- **Marginal price setter:** A-share retail investors are arguably the price setter in the onshore market as they account for around 80% of the turnover, while HK is driven more by institutional flows, which have an estimated 61% market share (in 2013) based on the survey compiled by HKEx.

Cross-sectional analysis reveals that **large-cap stocks with relatively low turnover velocity usually trade at A-share discounts** (H premiums) and vice versa, primarily reflecting the difference of investment style and philosophy of the two investor pools, in our view. This is the case for Financials but also applicable to Energy and Utilities.

The enhancing flows connectivity between the two exchanges should help improve the price discovery efficiency and narrow the gaps between A and H. However, investors should be mindful of the following caveats:

- The two markets are still largely dominated by **separate investor pools** with different investment philosophies.

- **Full legal fungibility** (the ability to deliver either A or H shares to settle trades), which would almost certainly make the shares trade within a narrower band (not always at parity), **is still absent**.

- It is difficult to predict **in which direction the gaps may converge** (i.e. whether A falls or H rises, or a combination of both). Specifically, there are 4 possible ‘arbitrage’ scenarios:
  1. Offshore investors sell the overvalued H and buy the undervalued A (large-cap sectors like Financials and Energy). They may be incentivized to switch (assuming they already have positions on H) but it depends on how high the switching costs (transaction cost and market impact) might be. We think select well-held offshore names could be disproportionately impacted by these arbitrage flows.
  2. Offshore investors buy small-cap H shares (most are not well covered with thin liquidity) and go short their expensive A-share counterparts, which practically speaking is difficult to execute.
  3. A-share investors go short the expensive large caps in HK and buy the undervalued A shares in China, which doesn’t conform to their investment style.
  4. **A-share investors buy undervalued small-cap H, funded by their A shares, which appears the most plausible scenario to us among the four.**
Exhibit 46: A-H premium, while it still exists, has compressed meaningfully over time

![Graph showing A/H Premium over time]


Exhibit 47: Small caps, which are favored (and frequently traded) by A-share investors, tend to trade at valuation premiums over their H-share counterparts

![Graph showing bubble size vs. A/H premium]


Exhibit 48: Cross-sectional regression model also suggests market cap and turnover ratios are reasonable explanatory factors for A-H premium

<table>
<thead>
<tr>
<th>Cross-sectional regression</th>
<th>T-stats</th>
<th>Latest premium</th>
<th>1Y Avg premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total listed cap (Log scaled)</td>
<td>-7.32</td>
<td>-5.94</td>
<td></td>
</tr>
<tr>
<td>Annualized turnover velocity</td>
<td>2.15</td>
<td>1.40</td>
<td></td>
</tr>
<tr>
<td>A/H share ratio</td>
<td>1.41</td>
<td>1.08</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market</th>
<th>T-stats</th>
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</thead>
<tbody>
<tr>
<td>Consumer Discretionary</td>
<td>1.02</td>
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<tr>
<td>Consumer Staples</td>
<td>-0.65</td>
</tr>
<tr>
<td>Energy</td>
<td>0.13</td>
</tr>
<tr>
<td>Financials</td>
<td>-1.23</td>
</tr>
<tr>
<td>Health Care</td>
<td>-0.03</td>
</tr>
<tr>
<td>Industrials</td>
<td>0.40</td>
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<tr>
<td>Information Technology</td>
<td>0.50</td>
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<tr>
<td>Materials</td>
<td>0.64</td>
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<tr>
<td>Utilities</td>
<td>-0.76</td>
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<table>
<thead>
<tr>
<th>Sector</th>
<th>T-stats</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Squared</td>
<td>0.63</td>
</tr>
<tr>
<td>Adjusted R Squared</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Source: Goldman Sachs Global Investment Research.

Exhibit 49: Price differentials exist even for fully-fungible dual listings

![Graph showing Price (HKD) and HSBC HKEx-listed vs. LSE-listed shares]

Source: FactSet.
#3: Market impact of liberalization

We believe the Stock Connect scheme will create a platform whereby A-share and global investors can exchange investment philosophies, allowing the two investor pools to assimilate and reshape the future development of the Chinese capital market. In the short run, however, the collision of the two groups may usher in new dynamics to the market. We examine two important events—allowance of direct foreign participation in local equity market (e.g. QFII), and MSCI EM inclusion—in Korea’s and Taiwan’s respective market liberalization processes, which may shed light on what may take place in China in the next few years.

- **Market returns**: Korea and Taiwan allowed foreign investors to directly purchase domestic equities in 1992 and 1991 respectively subject to specific regulations. In the same year, Korea was admitted to the MSCI EM universe and Taiwan was added in 1996. These two events appeared to have limited return impact on Korea while Taiwan enjoyed a strong rally (and outperformance) on these catalysts.

- **Valuations**: Taiwan’s rally was primarily fuelled by multiple expansion, and we note there was similar re-rating in Korea, although it was short-lived and lasted for only 1-2 months.

- **Turnover velocity**: We note there were meaningful increases in turnover velocity in all the three episodes but the rise in trading activity only sustained for 2-3 months, possibly reflecting investors’ initial excitement about the market liberalization developments.

- **Volatility**: Volatility rose significantly before the QFII implementation in Taiwan but subsequently normalized. In the other two cases, volatility remained largely stable around the events.

- **Return correlation**: Contrary to common perception, the opening up of these two markets didn’t introduce higher return correlation with global equities (we use MXAPJ as a proxy). We think this reflects the positioning shifts of domestic investors in anticipation of the liberalization measures, and the lagged effects between the opening up and actual implementation by foreign investors when they enter into a new market.

- **Foreigners drive market returns? Possibly longer term, but unlikely in China A in the near future**: While the relationships are far from stable, foreign investors’ influence on stock prices has been generally high in Asian markets in recent years, much more so for Korea and Taiwan, mainly attributable to the relatively high foreign ownerships in these two markets.

  Given the QFII (based on granted quota) and the Northbound Stock Connect quotas in aggregate represent 5.5% of free float A-share market cap, with much lower turnover velocity than individual A-share investors, we believe the latter would remain a dominant marginal price setter in the onshore market until foreign ownership reaches more meaningful levels.
Exhibit 50: Taiwan rallied on its market liberalization events...

Rebased price index (LOC) (event dates = 100)

Source: FactSet, Goldman Sachs Global Investment Research.

Exhibit 51: ...and the returns were mainly driven by valuation expansion

f-12m P/E (X)

Source: DataStream, I/B/E/S, MSCI, Goldman Sachs Global Investment Research.

Exhibit 52: Turnover velocity rose immediately post these market events but normalized thereafter

Annualized turnover velocity, 3M moving average

Source: TWSE, KSE, WFE, CEIC, Goldman Sachs Global Investment Research.

Exhibit 53: Volatility decreased after Taiwan implemented the QFII system

Annualized volatility, rolling 260D

Source: FactSet, Goldman Sachs Global Investment Research.

Exhibit 54: Empirically, market return correlations with global equities didn’t rise post the events

Monthly price (US$) correlation vs. MXAPJ, rolling 2 years

Source: FactSet, MSCI, Goldman Sachs Global Investment Research.

Exhibit 55: Foreign investors generally have high market impact on most Asian bourses

Rolling 5Y monthly correl. (net foregin inflows vs. market returns)

Current foreign ownership (%)

Source: Bloomberg, Local stock exchanges, Goldman Sachs Global Investment Research
#4: End game for B shares

- The B-share market, founded in 1992, was originally designed specifically for foreign investors, but domestic individuals have been allowed to participate since 2001. However, we believe the market is losing its relevance (or its capital raising/allocation function), as evidenced by its falling turnover, and decreasing number of listed stocks. The Stock Connect scheme may further jeopardize its strategic value, in our view.

- We believe the inactivity of the B-share market is partly driven by the very narrow universe (only 104 listed B shares), relatively more complex trading procedures compared to A shares, and foreign currency risk for mainland investors, all contributing to the valuation discounts that B shares are being priced at relative to their A-share tickers.

- B-to-H share conversion seems an effective tool to resolve this legacy issue. We believe B to H conversion offers several advantages: 1) it allows companies to access offshore financing, which is more favorable than onshore funding given the interest rate spreads; 2) illiquidity overhang issues related to B shares would ease; and, 3) listing offshore may enhance a company’s image.

- Three companies have successfully converted their B shares to H in recent years and created meaningful re-rating/trading opportunities during the process. Overall, we believe B shares with stronger balance sheets (especially cash and current assets) are better positioned for the conversion.

Exhibit 56: The relevance and importance of the B-share market as a capital intermediary have declined

Exhibit 57: B-share discounts to A have gradually normalized, but still at meaningfully high levels

Source: CEIC, Goldman Sachs Global Investment Research

Source: Wind, Goldman Sachs Global Investment Research
#5: Competition between Shanghai and HK

Our Global Macro team estimates that equity liquidity in China could reach US$165bn/day, or roughly 70% of regional (Asia-Pacific) liquidity, in 2020, compared with 40% now; and Shanghai could become China’s financial center and dominate China’s equity liquidity by then. However, we do not think Hong Kong will be marginalized due to the rise of Shanghai because:

- As long as the “one-country, two systems” framework remains in place in Hong Kong, and China continues to adopt its current judicial system (civil law based with local characteristics and influence from the CPC) and regulation on information flow, we think Hong Kong will remain the only Chinese city (or Special Administrative Region) where the regulatory and judicial frameworks are aligned with Western practices.

- The rising prominence of Shanghai is predicated on China’s gradual and eventual capital account convertibility. However, we do not think the opening up of the capital account will lead to only one-way capital flow (into China) as:
  - Cross-country, empirical evidence suggests the relaxation of capital controls tends to stimulate two-way portfolio investment flows;
  - Our interactions with domestic Chinese investors suggest that there is still significant demand for outbound investment and asset diversification from China, which should benefit Hong Kong in the long term.

- Assuming ongoing policy support from China and the determination for the Chinese government to reform its financial markets remains in place, we believe Hong Kong has the necessary qualities to retain its status as a leading financial hub, specializing in connecting China to the rest of the world given its status as China’s offshore Rmb center, and providing asset management services to institutional investors and high net worth individuals in the region.
Exhibit 58: Shanghai’s cash equity turnover is already 2X that of HK...

Exhibit 59: ...but we still expect HK (HKEx) to capture a significant portion (in nominal terms) of China’s outward investment flows through the Stock Connect

Exhibit 60: Removal of capital controls tends to stimulate two-way investment flows


Exhibit 61: HK is still enjoying its first-mover advantage in terms of amassing Rmb liquidity, which seems sticky

Source: CEIC, HKMA, Monetary Authority of Singapore, SWIFT Watch.
#6: Human capital and capex

We expect China to account for almost 25% of global equity market capitalization by 2030, primarily led by its robust economic growth and continuing financial market deepening, coupled with what we view as reasonable assumptions on normalized equity valuation. Against that backdrop, we see significant business opportunities centering on the following areas:

- DM investment flows (both new buying as well as customary portfolio trading);
- Growth in domestic EM institutional business as domestic saving pools become more institutionalized;
- Addressing the domestic retail investor base;
- Primary issuance, placements;
- Derivative and structured product businesses as equity and related options and futures markets become larger and more liquid;
- Proprietary activities;
- Related businesses- including stock loan, custodial services, foreign exchange settlements, and advisory work- that will be driven by larger and deeper equity markets.

To give a rough sense of the magnitude of the potential ‘plain vanilla’ revenues, we have calculated potential fees on: a) the US$3.9tn of primary issuance that we estimate may transpire over the next 15 years; and, b) secondary market commissions (based on average market cap, 100% annual turnover ratio and 10bp commission rate. Using conservative estimates, these add up to about US$360bn of revenues over the next 15 years or a simple average of US$24bn annually. Given the diverse array of generally more profitable businesses that complement these core equity intermediary activities, the business opportunity is clearly meaningful and could be several multiples of these base figures, in our view.

That said, competitive pressures will probably intensify and the competitive landscape will gradually evolve as the revenue opportunities become more recognized. Specifically:

- Stronger local players will no doubt emerge and change the competitive landscape, leading to more M&A and international expansion.
- The ‘war for talent’ will also become a real issue as financial intermediaries compete to attract capable and experienced people, especially for those who can apply ‘local’ knowledge and investment framework to the increasingly integrated HK/China market.
- The incentive and pressure for localization will increase for global investors: Coverage footprints will expand, demand for local language capabilities will increase as the client mix shifts more towards domestic institutions, and management pressures (for global or regional intermediaries) will intensify given inevitable tensions between local norms/objectives and a given firm’s broader culture and goals.
- The potential revenue opportunity will likely come with a higher cost base, since a greater local focus makes it harder to have scale efficiencies across geographic borders, i.e. a ‘hub and spoke’ model will become more difficult to deploy. This will also make it harder for financial firms to manage through the cycles that will inevitably take place within the context of the longer term structural trends.
Exhibit 62: Economic growth tends to lead to financial/capital deepening

- Cap to GDP ratios, adjusted for valuations
- Cap to GDP ratios, unadjusted
- GDP per capita (right)

Source: WFE, IMF, Goldman Sachs Global Investment Research

Exhibit 63: We forecast China to represent almost 25% of global market cap by 2030

As % of global market cap share

- China
- Brazil, Russia, and India
- DM Europe
- DM Asia
- Other EM

Source: PBOC, various Central Banks, WFE, IMF, Goldman Sachs Global Investment Research

Exhibit 64: China already has an active and sizeable equity market, but it needs more soft infrastructure capex to support further growth

<table>
<thead>
<tr>
<th>Equity market cap (US$bn)</th>
<th>China (SH+SZ)</th>
<th>Hong Kong</th>
<th>Singapore</th>
<th>London</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 13</td>
<td>3,949</td>
<td>3,101</td>
<td>744</td>
<td>4,429</td>
<td>24,035</td>
</tr>
<tr>
<td>Avg daily equity market turnover (US$bn), 2013</td>
<td>31.8</td>
<td>6.1</td>
<td>1.1</td>
<td>12.3</td>
<td>169.5</td>
</tr>
<tr>
<td>Issuance, IPO + FO (US$ bn), 2013</td>
<td>70.2</td>
<td>48.8</td>
<td>7.4</td>
<td>47.5</td>
<td>190.3</td>
</tr>
<tr>
<td># of companies &gt;US$1bn by market cap</td>
<td>901</td>
<td>377</td>
<td>94</td>
<td>422</td>
<td>2,317</td>
</tr>
<tr>
<td># of companies &gt;US$1bn by free float cap</td>
<td>337</td>
<td>230</td>
<td>51</td>
<td>363</td>
<td>2,097</td>
</tr>
<tr>
<td>Size of bond market as % of GDP, 2013*</td>
<td>50%</td>
<td>71%</td>
<td>83%</td>
<td>242%</td>
<td>216%</td>
</tr>
<tr>
<td>Avg daily FX turnover (US$bn), 2013*</td>
<td>44</td>
<td>275</td>
<td>383</td>
<td>2,726</td>
<td>1,263</td>
</tr>
<tr>
<td>Assets under management (US$tr), 2012*</td>
<td>0.6</td>
<td>1.5</td>
<td>1.2</td>
<td>7.3</td>
<td>39.6</td>
</tr>
<tr>
<td>Employees in the financial sector (000')</td>
<td>294#</td>
<td>239.9</td>
<td>190.1</td>
<td>367.7</td>
<td>599.0</td>
</tr>
<tr>
<td>Finance employees as % of total</td>
<td>5.3%#</td>
<td>6.4%</td>
<td>5.4%</td>
<td>7.4%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Total number of CFA*</td>
<td>2,919</td>
<td>5,777</td>
<td>3,235</td>
<td>7,219</td>
<td>55,013</td>
</tr>
</tbody>
</table>

Note: * referring to the whole country; # referring to SH only.

Source: HKMA, WFE, AsiaBondOnline, TheCityUK, SFC, CEIC, Wind, CFA institute, GS Global Investment Research

Exhibit 65: International brokers may need to increase their coverage footprint in China A

# of stocks

- HSCI
- CSI300
- CSI300 ex A-H dual listed

Source: Bloomberg
### Appendix

**Exhibit 66: China A could add positive portfolio effects even during market upturns, mainly due to their low return correlations with regional and global peers**

Annualized (total) returns (US$) and volatility, MSCI universe, past 10 years

<table>
<thead>
<tr>
<th>Expansion</th>
<th>China-A</th>
<th>China-H</th>
<th>MXAPJ</th>
<th>China-A</th>
<th>MSCI EM</th>
<th>China-A</th>
<th>MSCI AC</th>
<th>World</th>
<th># of months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>43%</td>
<td>45%</td>
<td>43%</td>
<td>45%</td>
<td>43%</td>
<td>47%</td>
<td>43%</td>
<td>32%</td>
<td>46</td>
</tr>
<tr>
<td>Risk</td>
<td>28%</td>
<td>20%</td>
<td>28%</td>
<td>18%</td>
<td>28%</td>
<td>20%</td>
<td>28%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>40%</td>
<td>33%</td>
<td>31%</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimal weight</td>
<td>21%</td>
<td>79%</td>
<td>19%</td>
<td>81%</td>
<td>21%</td>
<td>79%</td>
<td>14%</td>
<td>86%</td>
<td></td>
</tr>
</tbody>
</table>

| Slowdown | Return    | 14%     | 21%     | 14%   | 18%     | 14%     | 20%     | 14%     | 13%     | 54     |
| Risk      | 32%     | 27%     | 32%     | 18%     | 32%     | 20%     | 32%     | 12%   |            |
| Correlation | 64%  | 48%     | 48%   |         |         |         |         |       |            |
| Optimal weight | -16% | 116%  | -5%   | 105%    | -4%     | 104%    | 3%      | 97%   |            |

| Contraction | Return   | -53%   | -49%   | -53%  | -51%   | -53%   | -54%   | -53%   | -41%   | 12 |
| Risk        | 36%     | 37%    | 36%    | 31%    | 36%    | 34%    | 36%    | 25%   |            |
| Correlation | 72%    | 71%    | 69%    | 63%    |         |         |         |       |            |
| Optimal weight | 69% | 31%   | 35%   | 65%    | 39%    | 61%    | 32%    | 68%   |            |

| Recovery | Return | 8%   | -31%    | 8%    | -37%   | 8%    | -40%   | 8%    | -42%   | 8 |
| Risk      | 27%    | 30%   | 27%    | 26%    | 27%    | 25%    | 27%    | 20%   |            |
| Correlation  | 34%  | -3%   | -3%    | 2%     | 2%     | 2%     | 2%     | -28%  |            |
| Optimal weight | NM  | NM    | NM    | NM     | NM     | NM     | NM     | NM    |            |

| Full period | Return | 13%   | 14%   | 13%   | 12%   | 13%   | 12%   | 13%   | 8%   | 120 |
| Risk        | 32%    | 27%   | 32%   | 22%   | 32%   | 24%   | 32%   | 17%   |            |
| Correlation | 59%    | 48%   | 48%   | 47%   | 48%   | 47%   | 48%   | 39%   |            |
| Optimal weight  | 23%  | 77%   | 26%   | 74%    | 31%    | 69%    | 39%    | 61%   |            |

**Note:**
- Returns are expressed in annualized total returns (CAGR) for MSCI indexes in US$;
- Risk: annualized standard deviation of monthly returns;
- Correlation: between monthly returns of both asset classes;
- Optimal weights are calculated based on a hypothetical two-asset-class portfolio that maximizes the Sharp ratio with risk-free rate being assumed to be the period’s monthly average three-month US Treasury Bill yield.

**Source:** FactSet, MSCI, Goldman Sachs Global Investment Research.
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<table>
<thead>
<tr>
<th>Rating Distribution</th>
<th>Buy</th>
<th>Hold</th>
<th>Sell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>32%</td>
<td>54%</td>
<td>14%</td>
</tr>
</tbody>
</table>

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