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## Shanghai in 2020: Asia's Financial Centre

- Despite Shanghai's liquidity, the Chinese equity capital markets are relatively immature; we map out here the scope for greater deepening.
- This deepening will likely include the establishment of a foreign board, which could become an important conduit for foreign investment.
- We also believe China will move towards full currency convertibility and open up the A share market to foreign investors.
- Our estimates suggest equity liquidity in China could reach US\$455bn/day from US\$58bn/day currently, or roughly 70% of regional liquidity, in 2020, compared with 36% now; Shanghai should dominate China.
- We expect Shanghai to become a large domestic market rather than a broader regional market.
- To realize this growth, Shanghai needs to fulfil its ambitious infrastructure development plans, particularly on the soft side.
- We would expect other Asian financial centres to continue to press forward on financial innovation and product offerings, as they compete for the mind- and wallet-share of the investment community.

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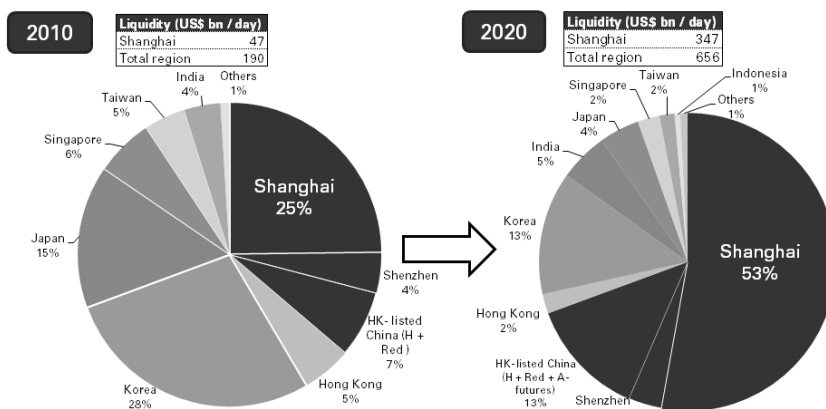
The prices in the body of this report are as of May 30, 2010, unless otherwise stated.

# Summary

- We expect Chinese economic growth to continue at a rapid pace over the medium term.
- Shanghai is already the dominant commercial centre in China.
- As we look forward over the next 10 years, we consider how Shanghai may change, given our forecast for rapid growth in China and the increasing openness of the economy, and given Shanghai's advantageous location in China and its future plans. In particular, we focus on Shanghai's standing as a financial centre.
- Despite Shanghai's image as a modern commercial centre and its notable achievements, China's equity capital markets are relatively immature; in this piece we map out the scope for greater deepening of the financial markets.
- This deepening is likely to include the establishment of a foreign board, which could become an important conduit for foreign investment in China in the medium term.
- In addition, we believe China will move towards two quantum changes in the next decade, which could dramatically change the financial landscape, namely:
  - a) Full currency convertibility.
  - b) The opening up of the A share market to foreign investors.
- Even though full opening is not our base case for 2020, the gradual opening up of the currency and equity markets, in combination with greater financial deepening, should play to Shanghai's strength as the financial capital of China.
- We estimate that the traded value of equities and futures in China could reach US\$455bn/day from US\$58bn/day currently, or roughly 70% of regional liquidity, compared with 36% now. The liquidity in Shanghai alone could reach over US\$350bn/day by 2020 vs US\$47bn/day at present, over 75% of Chinese liquidity, and as much as 53% of regional liquidity.
- Although in our view a foreign board in Shanghai would stand a good chance of success, as a financial centre, we believe that Shanghai would be modelled more closely on New York (that is, dominated by its domestic market) rather than a broader regional market.
- The implications of this magnitude of potential growth for Shanghai are that it needs to fulfil its ambitious infrastructure development plans, particularly on the 'soft' side, to enable and facilitate this level of expansion and to attract global talent.
- The rise of Shanghai as a trading centre also has implications for other financial centres, especially Hong Kong. We expect these centres will adapt, and find emerging areas of comparative advantage, partially facilitated by the rise of Shanghai.

## Our 2020 projections for Asian equity market liquidity

Market share of cash equity + futures turnover



Source: Bloomberg, WFE, World Bank, CFFEX, SHFE, GS Global ECS Research

# Shanghai in 2020: Asia's Financial Centre

## Shanghai: Stepping onto the World Stage

We step back to survey the phenomenon that is Shanghai, and try to peer into the future of this vibrant city, much as our seminal pieces on the BRIC economies have done, laying the intellectual foundation for the widespread acceptance of the BRICs 'dream'<sup>1</sup>.

We conclude that Shanghai has a good chance of becoming the dominant financial centre in China, and probably the dominant financial centre in the region as well, suggesting that other Asian financial centres will need to seek appropriate competitive areas. We think there will be a number of such areas.

As a financial centre, we expect Shanghai to develop more along the lines of the New York model—that is, primarily dedicated to its domestic market—rather than as a regional financial centre like London or Singapore. We argue that the financial deepening process of the Chinese equity markets has a long way to go, and that this should disproportionately benefit Shanghai.

The next decade will bring a number of daunting challenges for Shanghai, but we are impressed with the care and thoughtfulness of the longer-term planning in Shanghai, and believe that the city is poised to up the ante on what it means to be an international financial centre.

Shanghai shares some attributes with other 'second' cities that are port/financial centres, such as Chicago, Montreal, Osaka, Rotterdam and Busan (coincidentally, all of these are sister cities of Shanghai). There is an obvious and delineable division of responsibilities with Beijing, the capital and political centre of China. The Beijing-Shanghai High Speed Railway, scheduled to begin service in 2011, should help to further integrate the northern and central economic zones.

However, the relationship between Shanghai and Hong Kong is likely to undergo a higher level of change, around the financial fulcrums of currency convertibility and the opening up of the A share domestic equity market. Although the government is on the path towards full currency convertibility and the opening up of the domestic equity market, the process will probably be very gradual, and this could potentially benefit Hong Kong.

Although we do not include full convertibility in our base case for 2020, we think that both the currency and equity markets are likely to be much more open than they are now, in preparation for full convertibility.

## What Shanghai could look like in 2020

**Our assumptions for 2020 are that the CNY currency is well on the way to becoming fully convertible (but is yet to become fully convertible), and that domestic A shares are increasingly open to foreign investors, although trading restrictions would still apply.**

Although we don't have an exact timeframe for full convertibility/openness, the government has signalled both as eventual policy goals, given that the State Council has announced the national goal of making Shanghai an international financial centre<sup>2</sup>. It is our view that the plan to open up both markets constitutes the final, largely definitional, bridge to full convertibility.

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1. Refer to our BRICs research at <https://360.gs.com/gs/portal/research/econ/global/brics/>

2. On April 29, 2009, the Chinese government announced a policy entitled "the State Council's view on promoting Shanghai to build an international financial centre and international shipping centre by accelerating the development of a modern service industry and an advanced manufacturing industry."

To assess how Shanghai may change over the next ten years, we have divided up our report into the following sections:

**Current context:** we review our economic projections for Chinese economic growth, the context of Shanghai and the YRD (Yangtze River Delta) within China and the state of the capital markets, and summarize the plans that have been announced for Shanghai and the Pudong and Lujiazui areas.

**Financial deepening:** we argue that the financial deepening process will likely progress more rapidly on the turnover side than on the relative size of the capital markets, as the regulatory environment approaches regional standards, and market ownership starts to normalize.

**Establishing a foreign board:** even over the medium term, we believe there are strong arguments for allowing foreign companies to list in the A-share market. This would allow an increased level of domestic investment, without generating large currency inflows, while absorbing local liquidity and giving domestic investors access to foreign company exposure. In our view, Taiwan technology companies could be major participants in this area.

**Big Sha-Bang:** As a separate case, we consider the potential effects of 1) full currency convertibility, and 2) the opening up of A shares to foreign investors, on the position of Shanghai as a financial centre, particularly with regard to the equity markets.

**Projections for 2020:** overlaying our hypotheses of financial deepening and the partial opening of the currency and equity markets on our economic forecasts and on a rough model of liquidity, we estimate aggregate daily liquidity for Shanghai, and compare this to the rest of the region. We do not assume fully open currency and equity markets by then.

**Implications for Shanghai and other centres:** if the reality in 2020 is anywhere near our projections, Shanghai will need to address many larger issues to successfully navigate the transition to the dominant equity trading centre in Asia. Similarly, Shanghai's rise will create the need for adaptive changes in other financial centres, particularly Hong Kong.

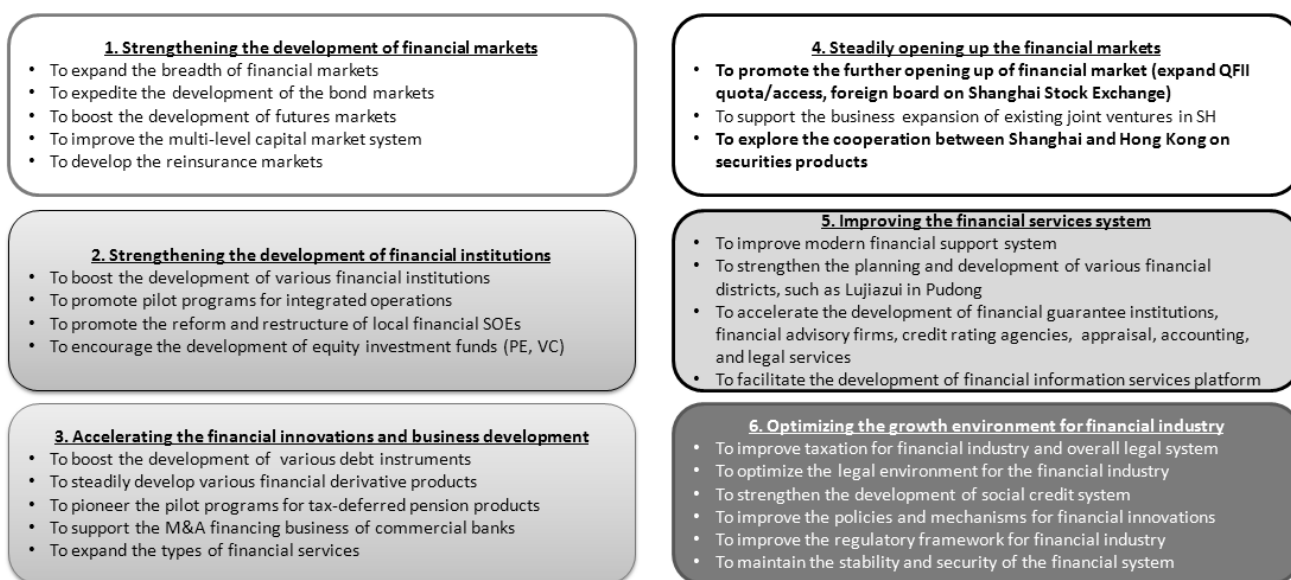
### **Caveats relating to our methods and estimates**

Although we have attempted to arrive at reasonable estimates for the region in 2020, ten years is a long time and the future is likely to diverge from the simple extrapolation of current trends. Some readers may disagree with our conclusions, which is to be expected. We fully acknowledge that many things can change along the path to 2020, and that many points of view on how the region will develop may exist. Hence, in no way do we aim to suggest that our forecasts are the only path for the region over the next ten years.

**We view our base case scenario as a central tendency, given everything we know at present, but fully expect other financial centres to adapt and modify their strategies, creating potential outcomes that we could not have fully foreseen.** We hope this report stimulates thoughtful debate both in Shanghai and throughout Asia, and we look forward to engaging in those discussions and helping to take them forward in any way we can.

Lastly, although we survey the fixed-income and commodities markets in China, we have focused our efforts on the equities and related markets. The concept of a financial centre is admittedly a vague one, and readers are asked to indulge our loose definition of financial centres as being anchored by a large listed equity market, even though this isn't necessarily always the case (Chicago, for example).

**Exhibit 1: Shanghai's vision to become an international financial centre by 2020**  
Based on Shanghai Government's response to the State Council announcement<sup>3</sup>



Source: Shanghai Government

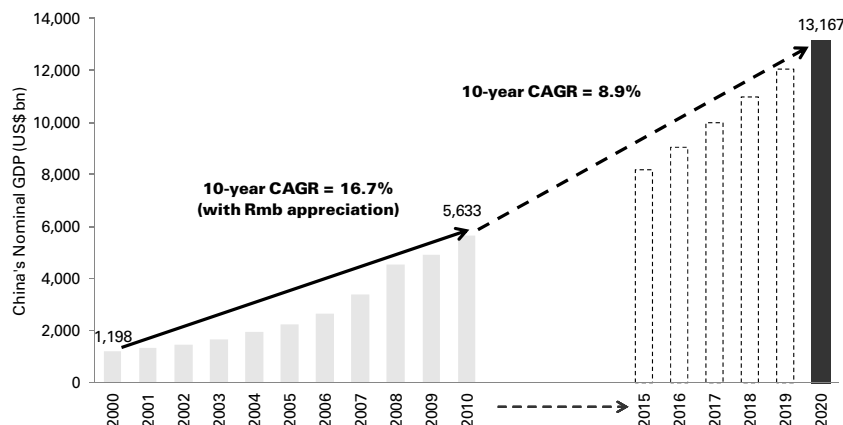
## Context: China's Growth and Shanghai's Position in China

Our Global Economics team is currently bullish about Chinese growth and we summarize our latest forecasts here. Much of the foundation for our conclusions depends on the accuracy of these estimates, although for our analysis, the critical part is whether our economic forecasts are correct in relative terms, and not whether they are correct in absolute terms.

### China's growth to 2020 and beyond

In their report *The Long-Term Outlook for the BRICs and N-11 Post Crisis* (December 2009), our economists argue that the 2008 crisis has been helpful in encouraging many of the emerging markets —especially China— to focus on

**Exhibit 2: China's nominal GDP will grow by 178% from 2010 to 2020, according to our BRICs' model**



Source: Goldman Sachs Global ECS Research.

3. On May 8, 2009, the Shanghai government announced a policy entitled 'Shanghai to fulfill "State Council's view on promoting Shanghai to build an international financial centre and international shipping centre by accelerating the development of modern service industry and advanced manufacturing industry.'"

**Exhibit 3: Average growth projections from 2020 and beyond**

Based on GS Global Economics 2008 BRICs forecast

	<b>Average nominal GDP growth projections (% per annum)</b>		
	<b>2021-2030</b>	<b>2031-2040</b>	<b>2041-2050</b>
Brazil	4.4	4.4	3.9
Russia	3.1	2.4	1.5
India	6.4	6.6	5.8
<b>China</b>	<b>5.7</b>	<b>4.4</b>	<b>3.6</b>

Source: Goldman Sachs Global ECS Research.

domestic demand. In their view, the long-term 2050 BRIC ‘dream’ projections are now even more likely to materialize. According to our BRICs model, China’s economy will grow by 178% between 2010 and 2020 in US\$ terms (8.9% CAGR), and it is possible that the Chinese economy could become as large as the US’s by 2027—in less than 18 years.

Since mid-2008, our global economists have believed that China could deliver a higher average growth rate than we previously thought. Over the 2010-2050 horizon, we forecast that it could grow 1.3% faster than previously estimated.

**Shanghai is the dominant commercial area of China**

Situated at the centre of the Yangtze River Delta (YRD), Shanghai is the dominant commercial centre of China, followed by Guangzhou and the Pearl River Delta (PRD), and the Bohai Economic Rim (BER) around Beijing/Tianjin. The YRD region accounts for more than 20% of total Chinese economic output (US\$1trillion in 2009 nominal GDP, which would rank it #13 globally on its own), and has a population of just 147 million people, 11% of China’s total population. As a trading centre, Shanghai is anchored by its status as the dominant port-city in China; in fact, the YRD region, which also includes the major port of Ningbo, was responsible for as much as 32% of all cargo volume in China, and 10% of all global volume in 2008.

**Exhibit 4: The context of Shanghai: Shanghai, YRD, PRD, BER, China aggregate**

	2009 Nominal GDP (US\$ bn)	2009 GDP per capita (US\$)	2009 population (mn)	Land (km <sup>2</sup> )
Shanghai	218.2	11,355.2	19.2	6,340
Zhejiang	334.3	6,491.2	51.5	101,800
Jiangsu	498.7	6,476.1	77.0	102,600
<b>Yangtze River Delta (YRD)</b>	<b>1,051.2</b>	<b>7,116.0</b>	<b>147.7</b>	<b>210,740</b>
Guangdong	572.2	5,966.0	95.9	177,900
Hong Kong	215.1	30,700.1	7.0	1,104
Macau	21.1	38,795.4	0.5	29
<b>Pearl River Delta (PRD)</b>	<b>808.5</b>	<b>7,814.1</b>	<b>103.5</b>	<b>179,033</b>
Beijing	173.7	9,899.3	17.6	16,808
Tianjin	109.8	9,136.6	12.0	11,920
Shandong*	247.5	5,241.0	47.2	78,350
Hebei*	124.6	3,555.3	35.1	93,850
Liaoning*	110.3	5,109.5	21.6	72,950
<b>Bohai Economic Rim (BER)</b>	<b>766.0</b>	<b>5,740.4</b>	<b>133.4</b>	<b>273,878</b>
<b>China</b>	<b>4,910.0</b>	<b>3,613.9</b>	<b>1,358.7</b>	<b>9,630,960</b>
<b>YRD (as % of China)</b>	<b>21.4%</b>	<b>197%</b>	<b>10.9%</b>	<b>2.2%</b>
<b>PRD (as % of China)</b>	<b>16.5%</b>	<b>216%</b>	<b>7.6%</b>	<b>1.9%</b>
<b>BER (as % of China)</b>	<b>15.6%</b>	<b>159%</b>	<b>9.8%</b>	<b>2.8%</b>

On May 24, 2010, China’s State Council announced a report entitled “Yangtze River Delta Regional Planning” which introduced Shanghai, Zhejiang and Jiangsu as the official composition of YRD. We estimate that only 50% of Shandong, Hebei and Liaoning should be included in the BER.

Source: CEIC, National Bureau of Statistics, Provincial Bureau of Statistics, Goldman Sachs Global ECS Research

### Manufacturing is twice as large as finance, for now

Although the nominal GDP of Shanghai has more than quadrupled since 1997, the sector breakdown hasn't changed much—the shares of manufacturing and finance have remained relatively stable at around 40% and 20%, respectively.

The stability of Shanghai's manufacturing sector is in contrast to Hong Kong, where manufacturing contributed around 20% of GDP in the mid-1980s compared with just 2% now, after the rise of the Pearl River Delta in the mid-1980s led to a shift towards finance and other services.

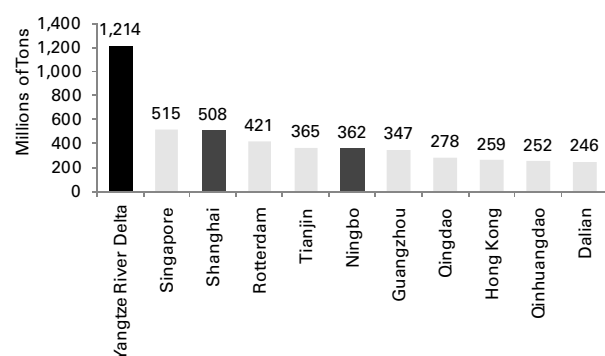
However we think the ratio of manufacturing may begin to change for Shanghai, in favour of finance and other services, for the following reasons:

- The government's focus on developing the Western and Central areas of China will probably attract more manufacturing into those regions.
- Rising wage growth in the coastal area also puts pressure on Shanghai-based manufacturers, compared with the inland provinces.
- Inland manufacturing should drive more demand for ancillary services, including transport, logistics and finance.

In many ways, we think Shanghai may partially emulate the development of Hong Kong during the 1980s and 1990s, when manufacturing was gradually replaced by higher value added services, and the compound GDP growth rate stood at nearly 12%, despite fears of economic 'hollowing out'.

**Exhibit 5: Total cargo volume in 2008**

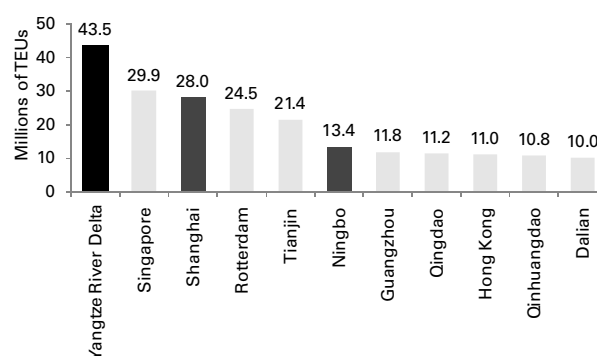
Based on annual survey by AAPA



Source: AAPA, World Bank, Goldman Sachs Global ECS Research

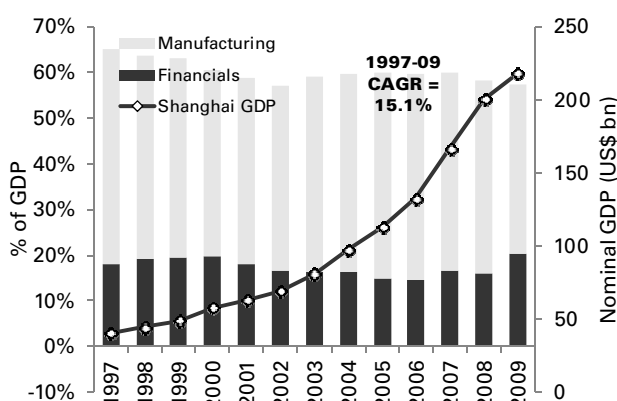
**Exhibit 6: Total container traffic in 2008**

Based on annual survey by AAPA



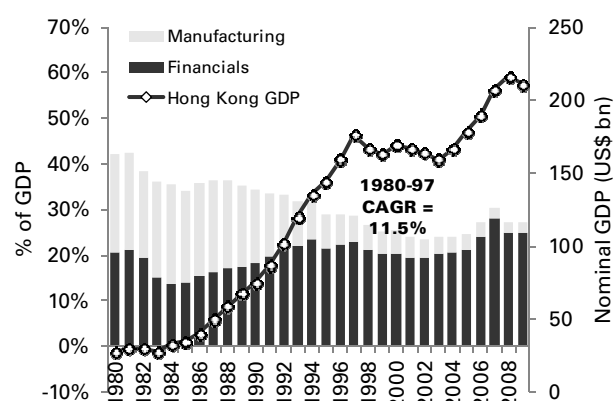
Source: AAPA, World Bank, Goldman Sachs Global ECS Research

**Exhibit 7: Shanghai economic growth, industry split**



Source: World Bank, CEIC, Goldman Sachs Global ECS Research

**Exhibit 8: Hong Kong economic growth, industry split**



Source: World Bank, CEIC, Goldman Sachs Global ECS Research



In order to achieve the national strategy of becoming an international financial centre and transportation hub, the Shanghai government has designated various economic zones to stimulate growth and generate synergy with each other, including:

- The Lujiazui Financial City (Shanghai Stock Exchange, Shanghai Futures Exchange, China Financial Futures Exchange and bank regional headquarters).
- The Bund Financial Square (where Shanghai's Bull, the Chinese version of Wall Street's Charging Bull, is located).
- The Zhangjiang Financial Information Service Industrial Park.
- The Yangshan Free Trade Port Area.

In addition to the 'hardware' infrastructure build-up, the Shanghai government also plans to revamp the 'software' infrastructure of the city, such as taxation, environmental protection, education and healthcare, to attract foreign professionals and retain domestic talent. This is important given that financial centres are so reliant on human capital.

In our discussions with officials from a variety of these institutions, we have been impressed by their thoughtfulness and vision, as well as by their candour regarding the significant challenges facing the city.

While the 2010 World Expo probably provided an important boost to improving the basic infrastructure of Shanghai, the authorities are now focusing on the 'soft' infrastructure of Shanghai, where much progress is still to be made. Officials mentioned the importance of addressing commercial issues such as the legal infrastructure and taxation, as well as liveability concerns, such as management education and medical infrastructure, in order for Shanghai to realize its larger ambitions. Many mentioned to us how important it is for Shanghai to internationalize further, in order to attract first-rate talent globally.

## State of the Financial Markets

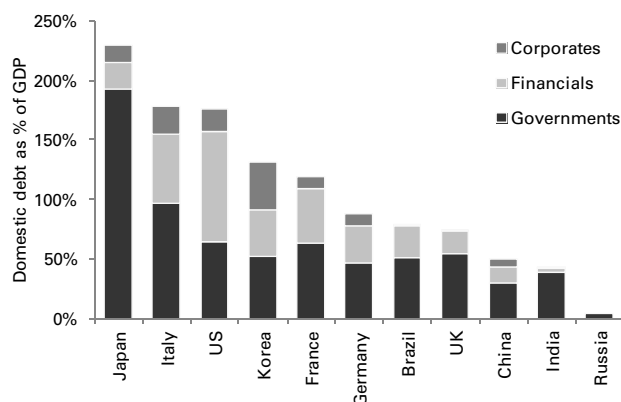
**We provide an overview of the fixed income, commodity and equity markets in China. For Shanghai in particular, we believe there is a great deal of upside in the development of the commodities and equity markets.**

### **China's fixed income market: much more growth, but dominated by interbank trading**

China's domestic bond market has been growing at a CAGR of 31% since 2000 and at the end of Sep 2009 had about US\$2.4 trillion notional of debt securities outstanding. While this number is fairly significant in absolute terms, it is only equivalent to half of China's GDP in 2009. Relative to the size of its economy, China's domestic debt market is quite small by international comparison (see Exhibit 9).

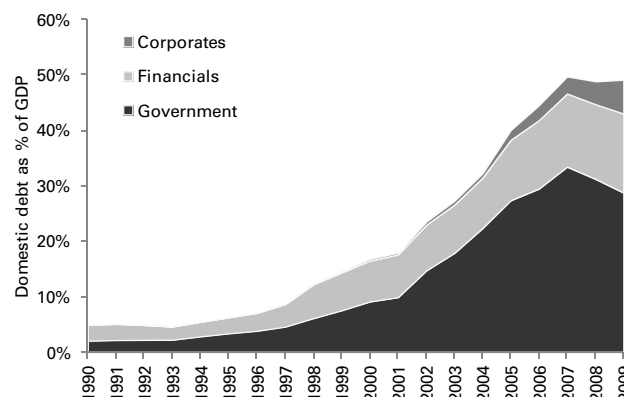
Based on their 2009 proposals, the State Council and the Shanghai government will stimulate the growth of a domestic bond market by promoting new issuance and enhancing the linkage between the inter-bank bond market, which totally dominates turnover (Exhibit 12), and the secondary bond market trading on the listed exchanges. Interbank trading is apparently much more popular than listed trading because most bonds aren't listed; empirically, the benefits of listed trading doesn't seem to justify the paperwork and effort involved in listing. Corporations and municipalities will be encouraged to issue domestic debt securities such as corporate/enterprise bonds, asset-back securities and revenue bonds. The regulators will also study the issuance of foreign currency denominated debt.

**Exhibit 9: China's domestic debt is below 50% of GDP**  
Debt outstanding as of Sep 2009



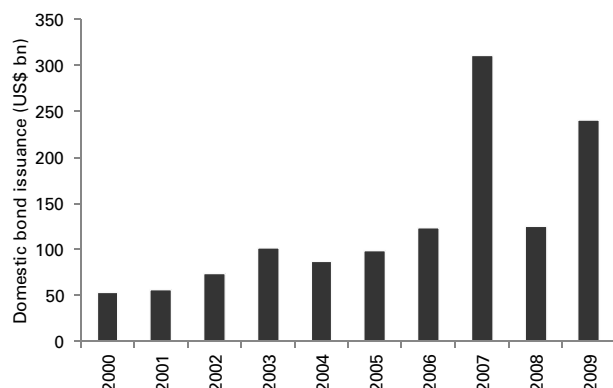
Source: BIS, Goldman Sachs Global ECS Research.

**Exhibit 10: In China, corporate bond issuers have emerged since 2002**  
Debt outstanding as of Sep 2009



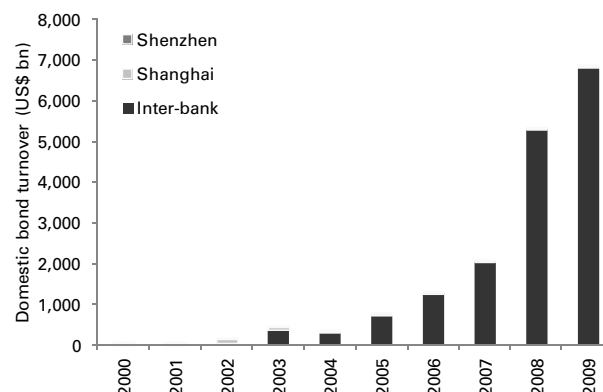
Source: BIS, Goldman Sachs Global ECS Research.

**Exhibit 11: China's domestic debt issuance**



Source: Wind Information, Goldman Sachs Global ECS Research.

**Exhibit 12: Turnover has grown faster than issuance**



Source: Wind Information, Goldman Sachs Global ECS Research.

As our colleagues Francesco Garzarelli and Sandra Lawson discussed in their *Global Economics Paper*, “Bonding the BRICs: A Big Chance for India’s Debt Capital Market” (November 2007), *full* capital account convertibility is not a pre-requisite for creating a strong domestic debt capital market (DCM). In fact, DCM development can and should help to pave the way to full convertibility.

We believe China would benefit from the expansion of its debt capital market as municipal governments gain access to alternative funding sources while reducing their dependency on bank loans. Given their low level of debt, Chinese corporations would also be able to lower their cost of capital by achieving a more balanced mix of debt and equity financing instruments, and subsequently boosting the appeal of their equities.

In response to the State Council announcement on April 29, 2009, the Shanghai government plans to liberalize and promote the domestic bond market by:

- Expanding the inter-bank market to include international financial institutions.
- Supporting CNY-denominated bond issuances by foreign companies with significant operations in China.

- Gradually promoting qualified foreign corporations to issue debt in the Chinese domestic bond market.
- Researching and exploring the introduction of fixed income derivatives based on currency, interest rates, bonds and bank loans.

In short, we think that the fixed income markets will enjoy considerable growth as China transitions away from a bank-driven credit economy, but that trading of fixed income securities will continue to be very much an interbank market.

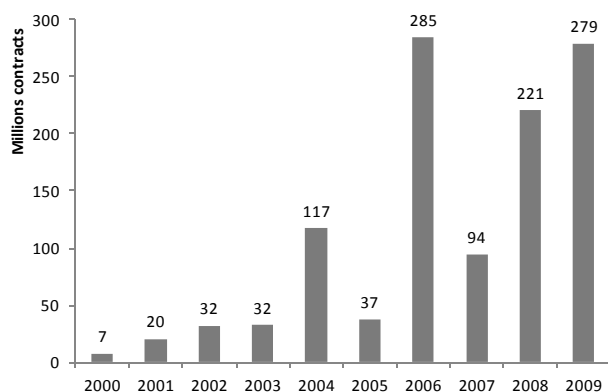
For fixed income derivatives, we would expect CFFEX in Shanghai to play an important role, as the primary centre of financial derivatives in China.

### China's commodity markets:

#### Global leaders in volume and increasing influence

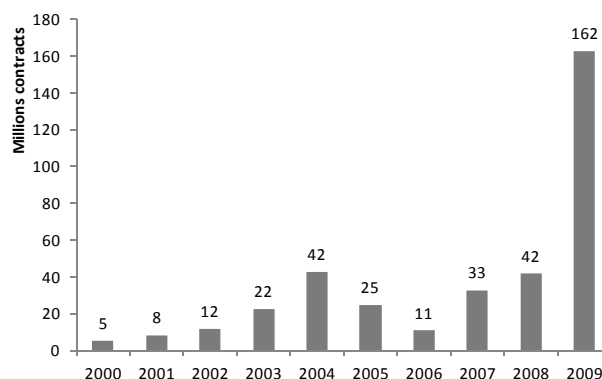
China has three major commodity exchanges: the Shanghai Futures Exchange (gold, copper, aluminium, rubber, steel rebar), the Dalian Commodity Exchange (agricultural products—soybeans, corn) and the Zhenzhou Commodity Exchange (sugar, cotton). According to the Futures Industry Association, SHFE, Dalian and Zhenzhou ranked 10, 11 and 14 respectively among global futures exchanges (including equity and fixed income futures) in terms of the number of contracts traded in 2009. Aluminium and rubber are two of the most popular contracts listed on the Shanghai Futures Exchange.

**Exhibit 13: Shanghai aluminium contracts**



Source: SHFE, Goldman Sachs Global ECS Research.

**Exhibit 14: Shanghai copper contracts**



Source: SHFE, Goldman Sachs Global ECS Research.

**Exhibit 15: 2009 trading snapshot of Shanghai Futures Exchange (SHFE)**

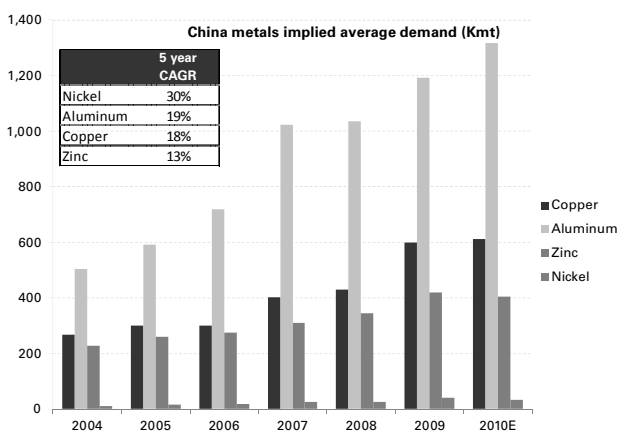
SHFE contracts	Average daily turnover (US\$ mn)	% of daily turnover	Average daily volume (# contracts)	% of daily volume
Copper	9,954	42.8%	665,717	16.9%
Steel Rebar	5,125	22.0%	1,700,784	43.1%
Natural Rubber	4,493	19.3%	729,803	18.5%
Zinc	1,406	6.0%	264,372	6.7%
Fuel Oil	964	4.1%	375,033	9.5%
Aluminum	838	3.6%	168,283	4.3%
Gold	458	2.0%	27,920	0.7%
Steel Wire Rod	32	0.1%	11,495	0.3%
<b>Overall</b>	<b>22,129</b>	<b>100%</b>	<b>3,564,460</b>	<b>100%</b>

\* Average daily turnover = one-way transaction value; SHFE publishes turnover as two-way transaction value

Source: SHFE, Goldman Sachs Global ECS Research.

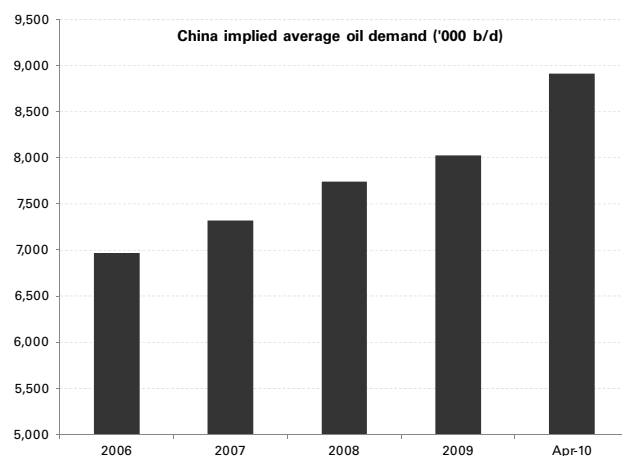
China has a significant role to play in the overall emerging market demand for commodities, especially base metals and Oil. Exhibit 16 – 18 show that Chinese demand for base metals and oil has remained robust over the past few years and, in the longer term, we expect demand to continue to improve.

**Exhibit 16: Chinese demand for base metals has been rising...**



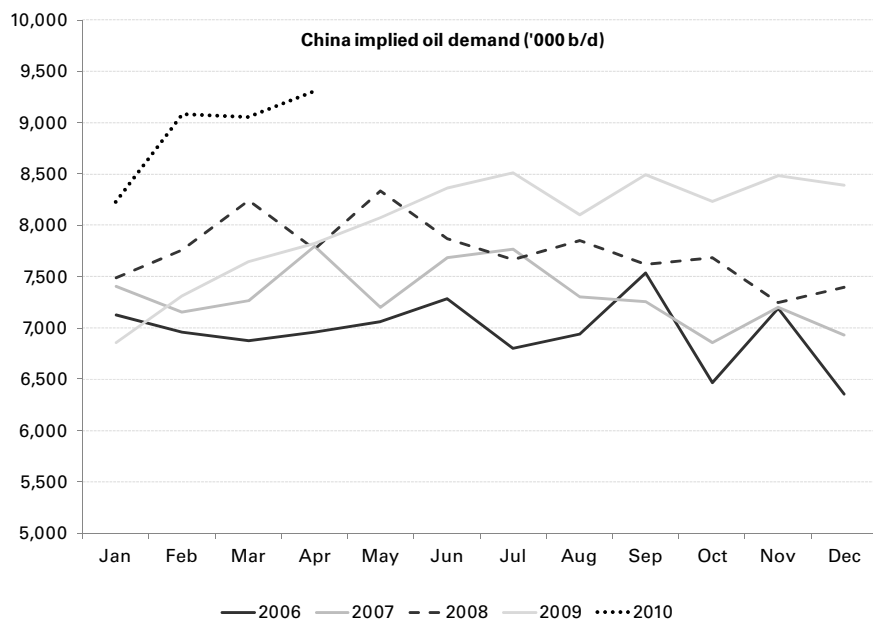
Source: China Non-Ferrous Metal Industry Association, Goldman Sachs Global ECS Research

**Exhibit 17: ...and so has the demand for oil**



Source: CNBS, Goldman Sachs Global ECS Research

**Exhibit 18: Chinese oil demand continues to increase, growing 1.3mb/d yoy ytd.**



Source: CNBS, Goldman Sachs Global ECS Research

In response to the State Council's decision to promote Shanghai as an international financial centre, the Shanghai government plans to expand Shanghai's commodity markets through the following initiatives:

- Support the introduction of crude oil, diesel, asphalt and other petrochemical products future contracts.
- Promote the Shanghai crude oil contract to become the benchmark for the Asia Pacific region, similar to WTI and Brent.
- Support the introduction of option contracts on copper and aluminium.
- Develop the future contract for lead and platinum, as well as futures for commodity indices.
- Explore the appropriate access level for QFII investors.

In our view, the introduction of crude oil contracts and various commodity derivatives would boost Shanghai's status as the regional centre for commodities trading, and contribute to the overall development of Shanghai's goal of becoming an international financial centre.

### China's equity markets: young and fragmented

Despite the high level of liquidity and capitalization (Exhibits 21 and 23), Shanghai's equity market is small relative to its future potential on our estimates. There are three major reasons for our hypothesis:

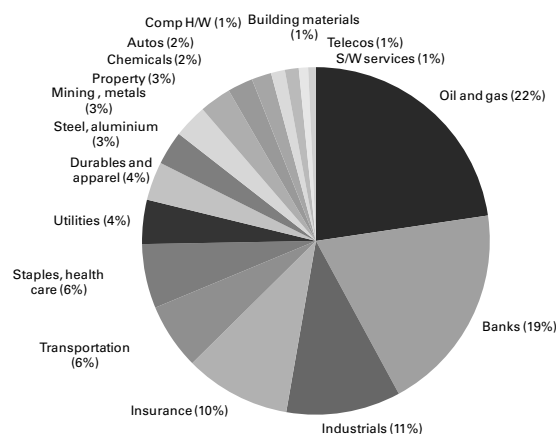
#### The IPO pipeline has much farther to go

Even though there have been many large IPOs in China, the IPO pipeline is closely managed and many large state-owned companies have yet to list. In addition, behind the SOEs, a number of private companies have been waiting to tap the financial markets. Moreover, China's economic growth should continue to stimulate new capital formation.

#### China's equity markets are uniquely fragmented

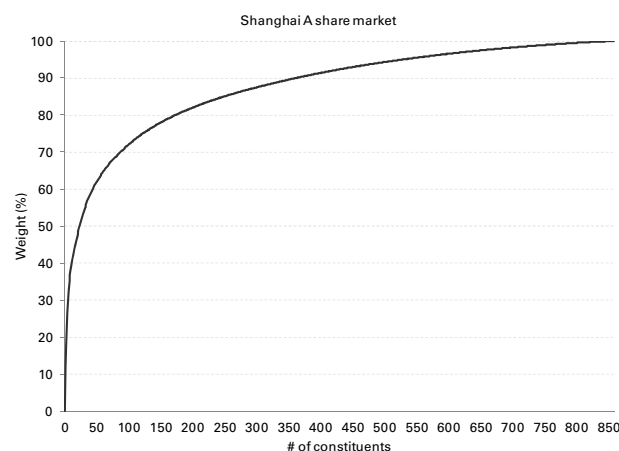
The Shanghai market, which is the dominant A share exchange, is only one of a number of exchanges for Chinese equity capital, the other major ones being Hong Kong, New York, Shenzhen and Singapore. The fragmentation is largely in response to the closed nature of the domestic market, so the opening up of the domestic market should generally promote de-fragmentation and

**Exhibit 19: Shanghai equity market breakdown by GS sector**



Source: Bloomberg, CSI, SHSE, GS Global ECS Research

**Exhibit 20: Cumulative Shanghai A share weight distribution**



Source: Bloomberg, CSI, SHSE, GS Global ECS Research

integration. Shanghai's current share of China's aggregate capitalization is just 58%, and its liquidity share is 60%.

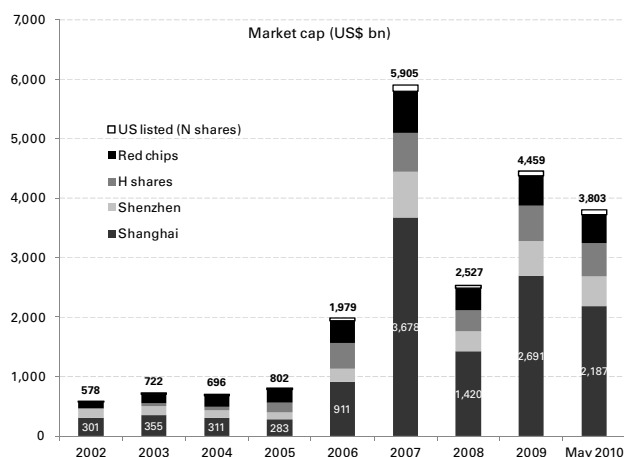
As shown in Exhibits 19 and 20, just three sectors account for more than 50% of the index weight, and the concentration of weight in the top names is fairly high. This factor is related to both market fragmentation (nearly all the large internet companies are listed in New York, for instance) and the fact that the process of privatizing the SOEs is still in its early stages.

Even before the advent of full currency convertibility, we would expect the authorities to allow foreign capital into the domestic equity markets, and allow domestic capital to invest outside of the country. This should further consolidate Shanghai's position at the centre of Chinese financial markets, particularly in terms of equity and financial derivatives.

### Market structure is relatively immature

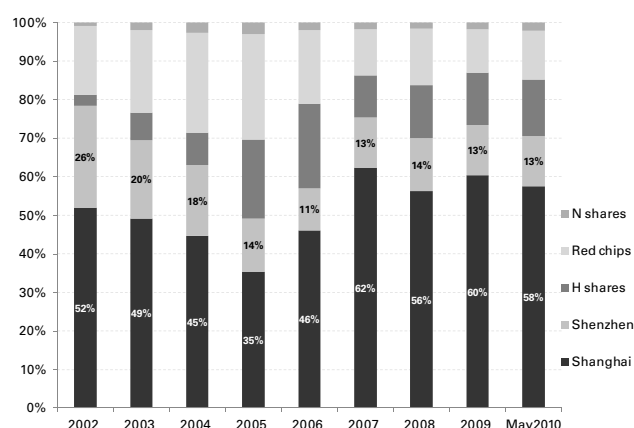
From a trading standpoint, the structure of Shanghai's equity market is still relatively undeveloped by regional standards, as Chinese regulators have taken a gradualist approach to market development. As we will explain in more detail, the Shanghai market has a number of important gaps compared with global and regional norms, which should further increase turnover in the medium term, even before the A share market is opened up to foreign investors.

**Exhibit 21: Market capitalization since 2002**



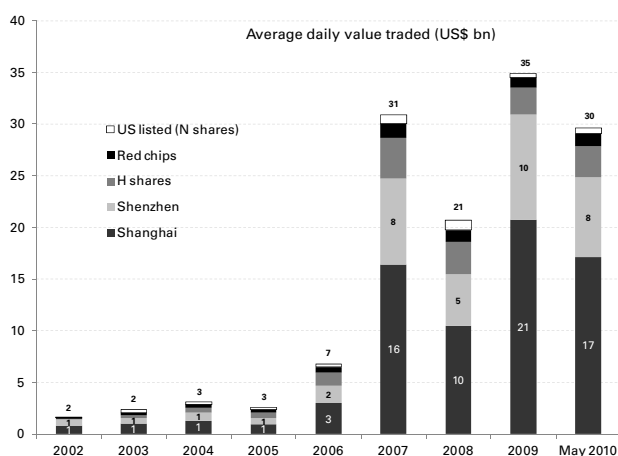
Source: Bloomberg, CSI, SHSE, GS Global ECS Research

**Exhibit 22: Market cap breakdown by share class**



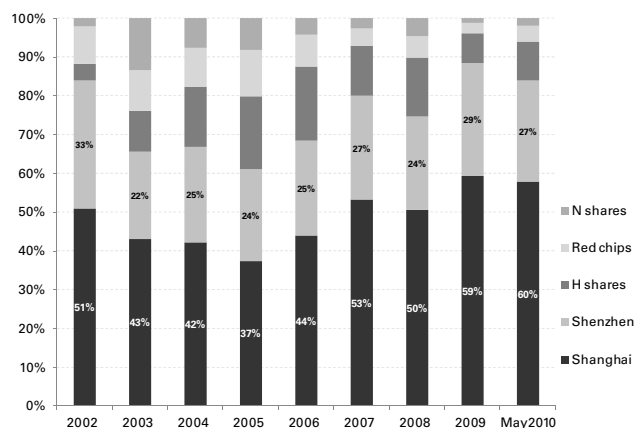
Source: Bloomberg, CSI, SHSE, GS Global ECS Research

**Exhibit 23: Average daily turnover of Chinese equities**



Source: Bloomberg, CSI, SHSE, GS Global ECS Research

**Exhibit 24: Daily turnover breakdown by share class**



Source: MSCI, CSI, SHSE, FactSet, GS Global ECS Research

**Exhibit 25: Structurally, Chinese markets are underdeveloped compared with their Asian peers**

Market	Primary Exchange	Margin available (Y / N)	Stock loan / Short selling restrictions	Day trading allowed	Foreign Ownership	Freefloat %	MSCI EM / DM member	Listed index options	Listed index futures	ID market
Australia	ASX	Y	Naked short sell prohibited while covered short sale permitted	Y	NA	91%	DM	N	Y	N
Japan	Tokyo SE	Y	Naked short sell prohibited	Y	24.0%	76%	DM	Y	Y	N
Taiwan	Taipei	Y	Short selling permitted	Y	32.1%	71%	EM	Y	Y	Y
Korea	KSE	Y	Naked short sell prohibited	Y	30.8%	64%	EM	Y	Y	Y
Singapore	Singapore	Y	Short selling permitted	Y	NA	56%	DM	Y	Y	N
Hong Kong	HKSE	Y	Covered short sales when stock loan is available	Y	NA	53%	DM	Y	Y	N
China Offshore	HKSE	Y	Covered short sales when stock loan is available	Y	NA	47%	EM	Y	Y	N
Malaysia	Kuala Lumpur	Y	Short selling permitted, more often via derivatives	Y	NA	43%	EM	Y	Y	N
Indonesia	Indonesia SE	Y	Short selling permitted in eligible securities	Y	NA	41%	EM	N	N	N
Thailand	Bangkok	Y	Short selling allowed	N	29.0%	35%	EM	Y	Y	N
India	NSE	Y	No Synthetic Shorts on cash market	Y	14.3%	35%	EM	Y	Y	Y
Philippines	Manila	Y	Short selling permitted	N	19.7%	32%	EM	N	N	Y
<b>China - A</b>	<b>Shanghai</b>	<b>Limited</b>	<b>Limited</b>	<b>N</b>	<b>0.5%</b>	<b>30%</b>	<b>-</b>	<b>N</b>	<b>Y (Apr 16, 2010)</b>	<b>Y</b>

Source: CSI, SHSE, PSE, SEBI, FSA, GS Global ECS Research

## Theme 1. Deepening of the Domestic Equity Markets

Despite perceptions of a trading-oriented market, the environment for China's equity markets is still quite conservative by regional standards. We believe that over time, as China relaxes its trading environment, turnover could increase much further, as more sophisticated trading methods are introduced, and market participation deepens.

### Leverage and shortability for single stocks

In most markets, margin and leverage form part of the trading environment, but until earlier this year, all trades in the A-share market were fully funded.

In the first phase, margin longs have been approved for 90 large cap stocks, which cover 65% of the CSI 300 index weight. Margin shorts have been approved for the same 90 stocks, but availability is a function of broker longs and can vary widely.

The size of the margin financing/stock borrow program is still small. Currently, there is only US\$90mn notional outstanding (99% long margin). The typical loan-to-value ratio is between 60% and 70%.

As domestic brokers allocate more capital to their margin businesses, and investors and regulators become more comfortable with the margin businesses, we expect the amount of leverage in the domestic equity business to rise dramatically, producing significantly higher turnover ratios. We would also expect greater leverage to produce higher single stock and index volatility.

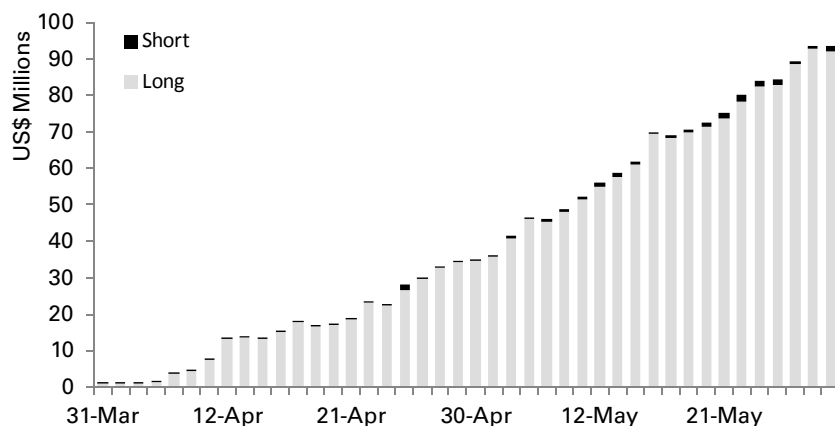
### T+0 trading for single stocks

Although there are no current plans for the introduction of T+0 (day) trading for individual stocks, we think this convention is likely to be adopted in the medium term.

The popularity of T+0 settlement—and therefore the ability to buy and sell on the same day—is supported by the experience of the index futures, described below, where less than 30,000 active accounts created close to US\$30bn of daily liquidity one month after futures were introduced. The experience of commodity futures, which also have T+0 settlement, also lends support to this idea.

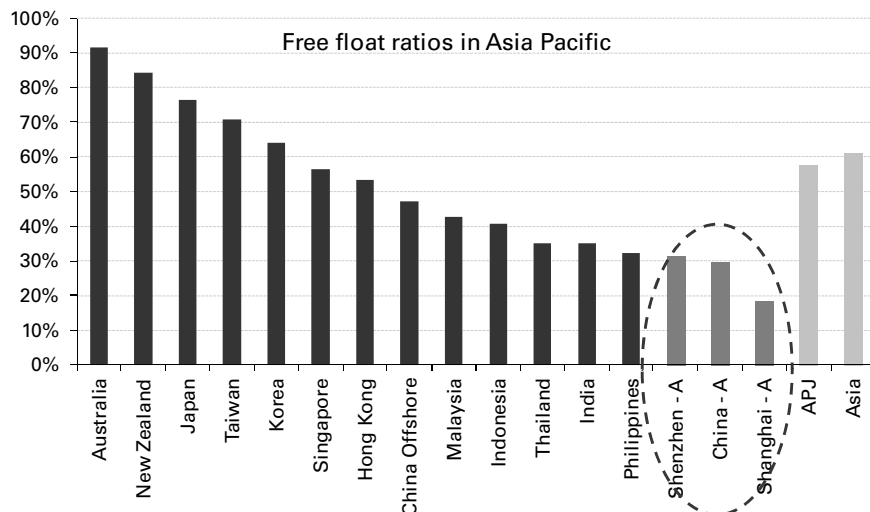
### Exhibit 26: Notional of margin outstanding

Notional of margin financing and stock lending compiled by Shanghai Stock Exchange



Source: SSE, Goldman Sachs Global ECS Research.



**Exhibit 27: China has the lowest free-float ratio in Asia**

Source: MSCI, CSI, GS Global ECS Research

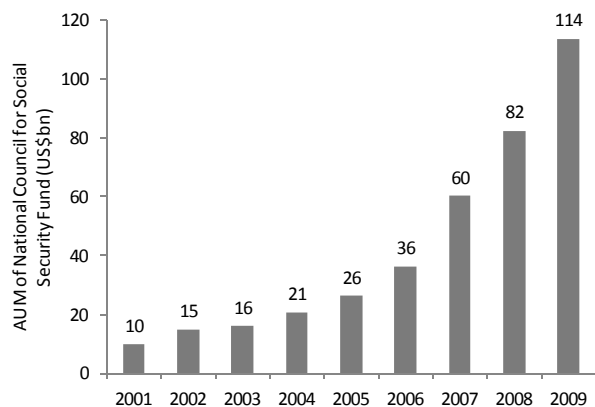
The high degree of trading volume in the ETFs is probably also explained by the T+0 settlement cycle for ETFs, whereby traders can buy the shares underlying the ETF, and later sell the ETF in the same day.

The higher volatility of single shares, coupled with the ability to trade them on an intraday basis, would probably boost exchange liquidity by a significant amount.

### Reduction of state-owned shares

Even after the enactment of the non-tradable share reform in 2005, the free-float ratio of China A shares remains the lowest in Asia (Exhibit 27).

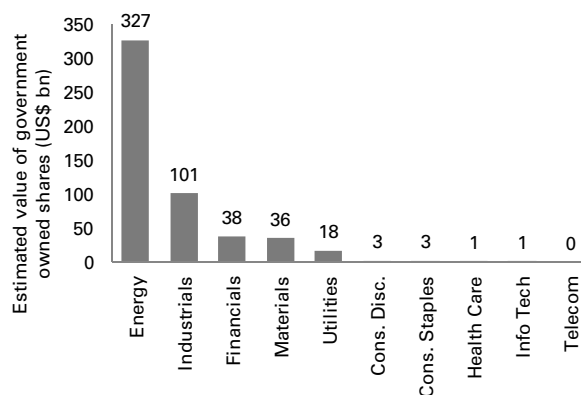
The State-owned Asset and Supervision and Administration Commission (SASAC) is the government entity charged with holding and administering the large state-owned positions. These shares were classified as non-tradable until 2005, when the non-tradable share reform gave share dividends to free-float shareholders in exchange for making the government-held shares tradable (but with certain constraints). Over time, we believe that the SASAC will continue to sell down these holdings on the margin, while keeping the bulk of the shares.

**Exhibit 28: AUM of NCSSF**

Source: NCSSF, Goldman Sachs Global ECS Research.

**Exhibit 29: Potential growth for market turnover**

Estimated value of government-owned non-tradable (lockup) shares



Source: WIND Information, Goldman Sachs Global ECS Research.

In addition, local governments and affiliated entities often own large share stakes, and over time we would expect these to decrease as well.

One of the major buyers of these shares could be the National Council for Social Security Fund, which is responsible for the public social security fund. Since a government-funded social savings net is an essential part of the long-term plan to reduce the high household savings in China, we would fully expect the NCSSF to grow in stature and asset size, potentially buying many of the SOE stakes from SASAC.

The overall picture is of a gradual shift in state ownership for policy purposes to one with investment objectives; this shift should increase the free float of the market, and provide the backdrop for the institutionalization of the domestic equity market.

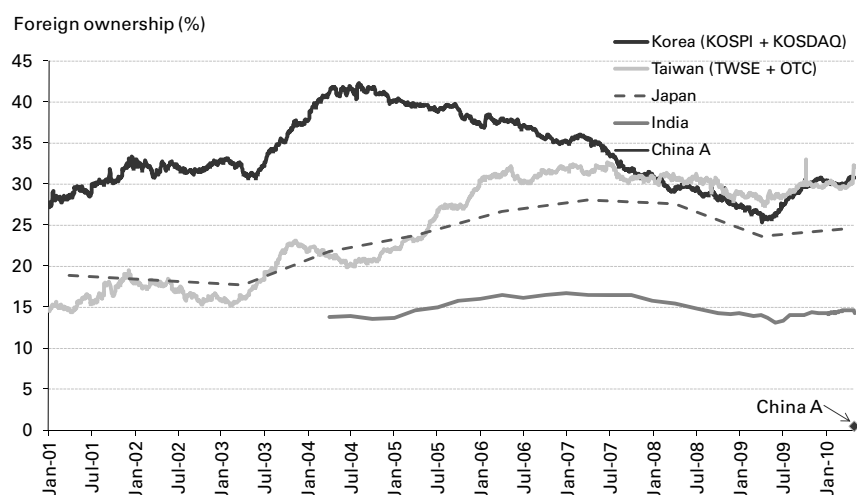
### More access for foreign investors: a one-way street

Foreign institutional investors currently access the domestic A-share market via the Qualified Foreign Institutional Investor (QFII) program, which has allowed US\$30bn of foreign investment into A shares, which implies that foreign investors only hold 0.5% of the A share market capitalization.

Even before the full opening of the domestic equity markets, we would expect this number to grow, as the vast majority of the A-share listed companies are not dual-listed in Hong Kong, and therefore investors cannot get exposure without having access to the A-share market. This is particularly true of consumption names, one of the major areas of investor focus, as the vast majority of the companies in this sector are only listed on the domestic market. (See our report *China: Portfolio Strategy: Picking the Chinese consumption winners*, Feb 26, 2010 for details.) The diminished valuation premium for A shares should also help generate demand from foreign investors.

However, once the currency becomes fully convertible and the A-share market is opened to foreign investors, the potential for foreign participation is likely to jump by an order of magnitude. As shown in Exhibit 30, foreign investors hold 25% of the capitalization in the lower-growth developed market of Japan, 30% in the higher-growth markets of Korea and Taiwan. The lower level of foreign ownership (14%) in India is explained by the weighted average foreign ownership limit (35%), and possibly the fact that the aggregate market currently has the highest valuations in the region. In our A-H dual listed

**Exhibit 30: Foreign ownership of major Asian markets**



Source: Bloomberg, TWSE, TEJ, TSE, GS Global ECS Research

**Exhibit 31: Ownership breakdown for heavy-weight A/H dual-listed stocks**

Company	Total listed market cap (US\$ bn)	% of A-shares market cap	% of H-shares market cap	Government holding (% of overall share count)	QFII holdings as of 1Q2010 (% of overall share count)	Foreign Strategic investors holding (% of overall share count)	Non-China-based institutional holdings based on top-20 H-shares holders (% of overall share count)
PetroChina	282.0	92.1%	7.9%	86.2%	0.0%	0.0%	2.6%
ICBC	219.8	72.4%	27.6%	70.8%	0.0%	4.1%	4.8%
CCB	184.4	3.6%	96.4%	57.1%	0.0%	16.6%	2.5%
BOC	141.9	73.6%	26.4%	67.5%	0.0%	5.1%	7.1%
China Life	107.3	70.2%	29.8%	68.5%	0.2%	0.0%	11.9%
Sinopec	103.8	87.4%	12.6%	75.8%	0.0%	0.0%	7.1%
<b>Weighted Average</b>		<b>67.0%</b>	<b>33.0%</b>	<b>72.4%</b>	<b>0.0%</b>	<b>4.5%</b>	<b>5.1%</b>

Source: Wind, Bloomberg, GS Global ECS Research

universe, we calculated the weighted average of the government stake, QFII holdings, and strategic and non-strategic foreign investor positions in the largest six names. As shown in Exhibit 31, the foreigners (QFII, strategic and non-strategic) own less than 10% of the total capitalization (A and H combined), while the government still owns the lion's share (around 72%) of total market capitalization.

Once the currency is becomes fully convertible and foreign investors are granted access, the entire A-share market would theoretically be eligible for inclusion in the Emerging Market series of both the FTSE and MSCI global indices, which would mean that foreign investors would need to raise their A-share exposures more or less in line with their benchmark weights. Since this would cause great volatility if done over a short period of time, we think the implementation period would highly likely be staggered and gradual. But it does imply large amounts of secular buying by foreign investors of China A-shares.

### Lessons from the launch and development of CSI 300 futures

The recent launch of the CSI 300 equity index futures, after three years of development, marked a major milestone in the development of China's capital markets. It also highlights the growing importance of Shanghai, because the CSI 300 futures contract is the first major derivative contract to be launched by the China Financial Futures Exchange (CFFEX).

The introduction went better than market expectations, trading between US\$17bn and US\$26bn in its first two weeks, with open interest exceeding US\$2bn. Expectations were tempered by the fact that fewer than 10,000 accounts, mostly retail, had been authorized to trade the futures at the time of the launch, and because position sizes had been cut to just 100 contracts (US\$12mn)/account. Over 95% of the volume was day trading related, because the futures contract was the first instrument in China to have T+0 settlement. As the number of accounts expands, pricing becomes more and more efficient, and institutional investors are allowed to enter the futures market, we expect the futures to continue to increase in liquidity.

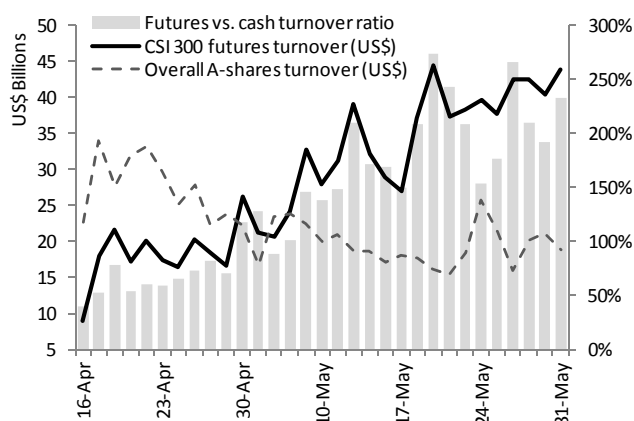
We believe the experience of the futures contract also highlights four issues relevant to the future development of the aggregate Shanghai equity markets, and, as the equity markets develop along the structural lines of the index, futures markets, turnover and liquidity could rise by a significant amount.

**1. Leverage:** the futures represented the first time that a high degree of leverage (6.7x) has been applied to the domestic Chinese market, which understandably increases the attractiveness of the contract from the trading point of view. Margin longs and shorts for 90 of the largest single stock names were

**Exhibit 32: Trading cost comparison**

	Est. commission /transaction fee	+	Avg bid/offer spread	=	Total cost per trade
<b>Futures</b>	1-2 bps		1 bps		2-3 bps
<b>Stocks</b>	9-10 bps		8 bps		17-18 bps

Source: Bloomberg, CFFEX, Goldman Sachs Global ECS Research.

**Exhibit 33: Avg CSI 300 futures turnover is 129% of overall A-share market since inception on April 16, 2010**

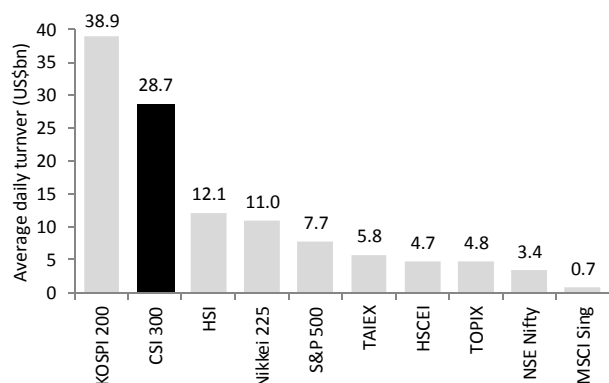
Source: Bloomberg, CFFEX, Goldman Sachs Global ECS Research.

introduced at the same time, but the leverage available (~2x) and the availability remains relatively restricted—only six brokers have been authorized to conduct this business so far, and their capital remains constrained compared with market trading volumes (Exhibit 26).

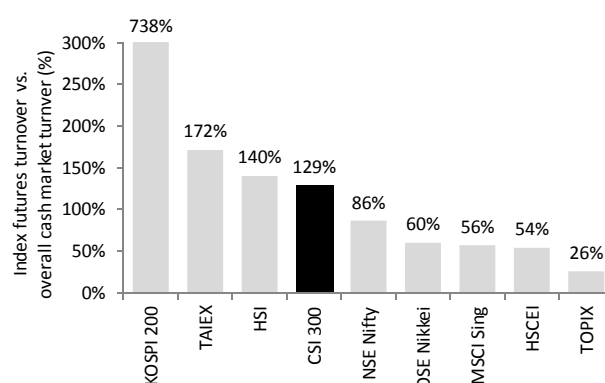
**2. Short vehicle:** retail investors have the ability to go either long or short futures, subject only to the overall position restrictions. The CSI 300 futures are the first instrument where this is possible at an index level. As mentioned above, margin shorts have become theoretically available on a single stock basis (the same 90 stocks approved for margin loans) but are a function of supply (margin longs) and are therefore in quite short supply. It is not possible to hedge at the index level, aside from using the futures, because only 65% of the index is covered by the margin policy at the moment.

**3. Settlement cycle:** index futures were the second equity vehicle to allow day trading (after ETFs) because of a T+0 settlement cycle instead of a T+1 cycle, which is the standard for trading single stocks (both fully-funded and on margin).

**4. Low trading costs and liquidity:** even the short experience with index futures trading underscored how important trading costs and liquidity are to attracting more trading; Exhibit 32 shows that the one-way transactions + trading costs

**Exhibit 34: Futures average daily turnover across Asia**  
Avg daily turnover since CSI 300 futures inception (30-May)

Source: Bloomberg, CFFEX, Goldman Sachs Global ECS Research.

**Exhibit 35: Futures/cash market turnover across Asia**  
Avg futures/cash market turnover from 16-Apr to 30-May

Source: Bloomberg, CFFEX, Goldman Sachs Global ECS Research.

for the futures are nearly a tenth of the costs for single stocks, and liquidity is at least an order of magnitude higher. These two factors, combined with leverage, theoretically enable a day trader to take a 50bp intraday move and turn it into 3% P&L ( $50\text{bp} - (2.5\text{bp} \times 2) = 45\text{bp}$ ,  $\times 6.7\text{X}$ ), instead of a 10bp P&L ( $50\text{bp} - (20\text{bp} \times 2)$ ) in the case of a fully-funded stock trade.

**The potential conclusions for the Shanghai markets are that the domestic A-share equity markets are at a level of 'financial immaturity' compared with most world markets, which belies their already high degree of liquidity. As China (gradually) moves to a T+0 settlement for stocks, as margin and leverage become commonplace, as short positioning becomes more readily available, and as trading costs decline and liquidity rises, we would expect trading volumes (as a percentage of capitalization listed in Shanghai) to continue to rise. Our ballpark estimate for 2020 is 300%, compared with 200% now:** this seems fairly conservative, when one considers the kinds of changes that lie ahead for the Shanghai exchange, and when we compare it to where the US is now, at over 350%.

## Theme 2. Introduction of a Foreign Board

**Although we don't expect Shanghai to become a true regional financial centre because of its dominant domestic market and constrained openness, we do think there is a good argument for an active 'foreign' equity board.**

As the domestic equity market grows in stature and liquidity, foreign companies will likely seek to tap that liquidity, especially if they seek funding to expand their activities in China. However, listings of foreign companies are currently not permitted and thus most investment from foreign companies comes via official FDI, which involves a foreign currency to RMB transaction. The government regulates these currency flows, partly because they are the same direction as 'hot money' speculative CNY inflows.

Recently, there has been much discussion about establishing a foreign board in Shanghai. The listing of foreign companies would satisfy a number of different objectives for the government: a) it could be a source of capital for the domestic Chinese operations of foreign companies; b) it would give domestic investors direct access to important foreign equities, while remaining under government regulation; and c) it would help to soak up abundant local liquidity. Full currency convertibility would not be required for this to move ahead; in fact, it is more likely to proceed if authorities are worried about large FDI inflows into the CNY.

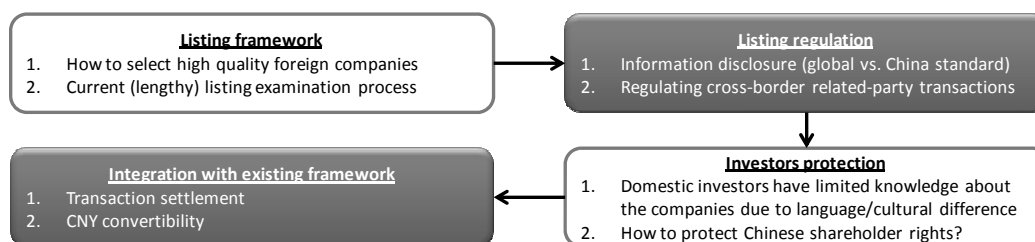
Compared with the QDII system, where domestic institutions raised capital for investment on overseas exchanges, a foreign board has the benefit (from the government's point of view) of being more tightly controlled, while also allowing foreign corporates to raise money for expansion within China. Compared with FDI, which involves selling a foreign currency and buying CNY, this would potentially allow larger domestic investments by foreign investors, without creating large currency flows.

We consider four things in this section:

- The official government pronouncements on the foreign board issue.
- The example of the foreign board and ADR market in New York (successful).
- The example of the foreign board in Japan (disappointing).
- The potential for China to become a regional capital hub.

### Exhibit 36: Potential issues highlighted by “Strategic planning for domestic listings of foreign companies”

A report published by the Research Division of CSRC in 2008<sup>4</sup>



Source: CSRC, Goldman Sachs Global ECS Research.

In terms of the official intentions of the government, we summarize some of the potential challenges highlighted by a 2008 paper from the research division of the CSRC on “Strategic planning for domestic listings of foreign companies”.

### Constraints on use of proceeds: investment-driven listings

Owing to the current restrictions on capital flow, foreign companies may not directly transfer the proceeds from share sales back to their home countries. In our view, limitations on the use of proceeds will likely determine the nature of potential foreign listings. For multi-national corporations with strong capital bases, listing on the Shanghai Stock Exchange may boost their image/popularity in China and at the same time facilitate their China operations by providing a local source of investment capital.

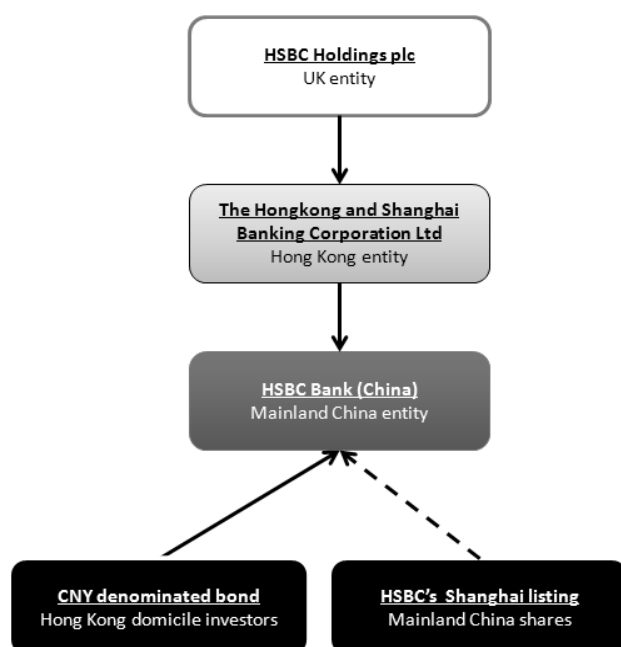
For example, HSBC Bank (China) currently has two options for injecting capital into its domestic Chinese entity: getting government approval for a capital injection from the (Hong Kong) parent company, which would involve a HKD to CNY transfer, or by issuing a CNY-denominated bond in Hong Kong.

If HSBC were to be listed on the foreign board of the domestic Chinese market, then, theoretically, HSBC Bank (China) would be able to utilize the IPO proceeds for its China operations, while diversifying its fund source and potentially lowering its funding cost ( Exhibit 36).

While multi-national corporations may opt to use the proceeds for their expansions in China, the probability that capital controls remain in the medium term will likely discourage emerging companies with limited China exposure from applying for a Shanghai listing. To further enhance Shanghai’s appeal to foreign listings, regulators such as SAFE (State Administration of Foreign Exchange) and the CSRC (China Securities Regulatory Commission) may need to coordinate with the Shanghai Stock Exchange to liberalize certain restrictions on the flow of capital.

4. In 2008, the Research Division of the China Securities Regulatory Commission published a report entitled “Strategic thoughts on foreign company listings in China” [http://www.csrc.gov.cn/pub/newsite/yjzx/zbscyx/yjbg/200908/t20090806\\_119895.htm](http://www.csrc.gov.cn/pub/newsite/yjzx/zbscyx/yjbg/200908/t20090806_119895.htm)

**Exhibit 37: HSBC example**  
Cash flow for China operations



Source: Company annual report, Goldman Sachs Global ECS Research.

**Listing structures and convertibility determine pricing differences**

For our purposes, the three most relevant methods for foreign listings are shown in Exhibit 36: dual listings that are fully fungible between listing locations; depository receipts (ADR/GDR), where fungibility depends on the issue; and A-H share classes, which are equivalent and which should eventually be fungible (or at least functionally the same).

**For fully convertible dual listings** such as HSBC in Hong Kong and London, shares bought on either exchange are legally the same, and price differentials are just a function of arbitrage efficiency and time-zone differences. HSBC also enjoys the possibility of tapping the Hong Kong market with its brand name and its ability to issue its ‘bonds’.

**The ADR/GDR structure** is a way of ‘issuing’ shares in the international markets by referencing their local shares. Examples include POSCO of Korea (005490 KR vs. PKX US), TSMC of Taiwan (2330 TT vs. TSM US), Vale of Brazil (VALE3 BZ vs. VALE US) and Infosys of India (INFO IS vs. INFY US). The valuation premium/discount of foreign-listed shares is generally a function of the convertibility specifications. As an example, TSMC ADRs are systematically more expensive than their underlying shares in Taiwan (Exhibit 40) due to the non-fungibility and limited availability of ADR shares outstanding. In theory, the valuation of ADR/GDR should be the same as local shares, assuming there is an efficient convergence mechanism.

**The dual A/H share structure** for Chinese stocks, with separate onshore and offshore shares, which are **expected** to become equivalent (but with no explicit guarantees), is the most ambiguous of the three structures. The lack of explicit convergence and the fact that the domestic pool of money has had limited investment options has enabled A shares to trade historically at substantial premia to H shares; as domestic money is allowed access to more diversified products, and the prospect of ‘convergence’ with the H shares improves, these differentials have fallen.

**Exhibit 38: Commonly-used structure for foreign company listings**

Dual listing, ADR/GDR, A-H share classes

**Dual listing (fully fungible)**

- 100% fungibility promotes more efficient pricing/valuation
- Pending liberalization on China's capital account restrictions
- Examples: HSBC (HK vs. UK shares)

**ADR/GDR (partially fungible)**

- Requires sponsors and depository banks
- DRs may trade at discount/premium due to partial convertibility or foreign ownership limit
- Examples: TSMC (2330 TT vs. TSM)

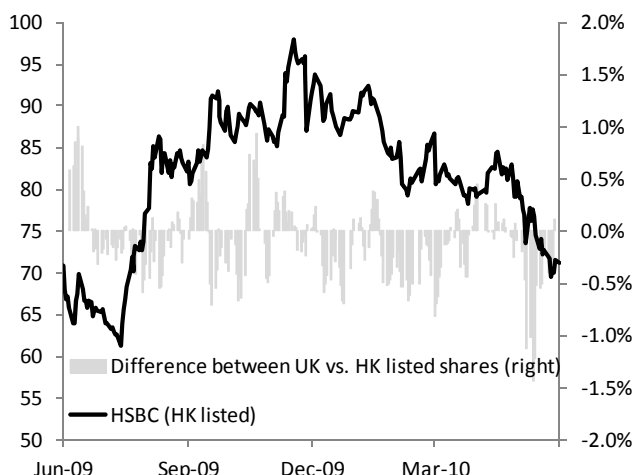
**A-H share classes (eventually fungible)**

- Two separate share classes with claims on the same earnings stream
- Isolated trading environment with zero convertibility
- Examples: ICBC (1398 HK vs. 601398 SH),

Source: Bloomberg, KSE, TSE, ADR.com, Goldman Sachs Global ECS Research.

**Exhibit 39: Stable mispricing for HSBC shares**

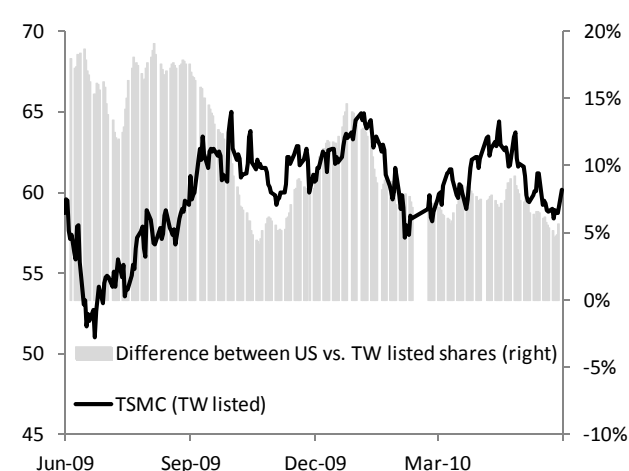
HSBC HKEx-listed vs. LSE-listed shares



Source: Goldman Sachs Global ECS Research.

**Exhibit 40: ADRs on TSMC are systematically more expensive than their underlying shares in Taiwan**

TSMC TWSE-listed shares vs. NYSE-listed ADRs



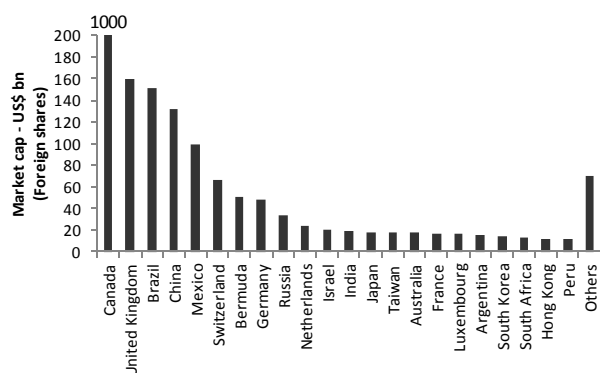
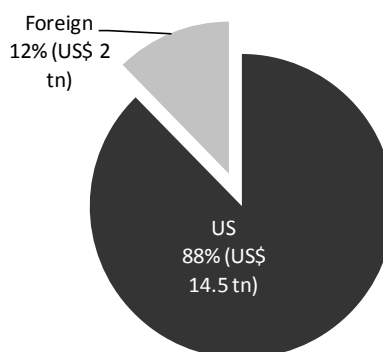
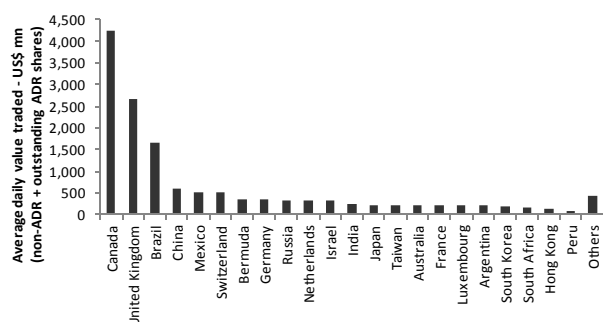
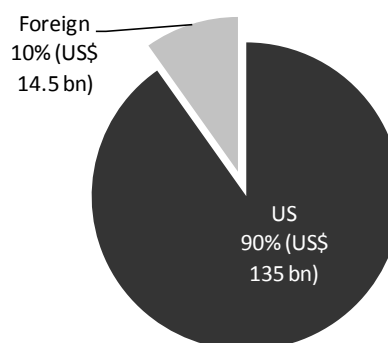
Source: Goldman Sachs Global ECS Research.

**Lessons from the US: deep capital pools attract regional listings**

NYSE and Nasdaq have established themselves as two of the most popular exchanges for foreign companies to raise capital in the global equity markets. We estimate there are more than 1,000 non-US companies listed on the two exchanges with an aggregate market cap of US\$2trn (12% of overall market cap) and average daily value traded of US\$15bn (10% of overall NYSE/Nasdaq exchange turnover, respectively).

The two US exchanges have played an important role for the neighbouring nations, Canada and Mexico, with more than 200 companies listed on NYSE and Nasdaq, while Canadian companies dominate the market capitalization of the foreign listings. In addition, Nasdaq has become a major destination for aspiring high-tech companies and has been able to attract leading Chinese tech companies, such as Baidu, SINA, Ctrip, and Sohu.



**Exhibit 41: Market cap of foreign companies****Exhibit 42: Percentage share of NYSE/Nasdaq market cap****Exhibit 43: Trading volume of foreign companies****Exhibit 44: Percentage share of NYSE/Nasdaq daily trading**

Source: FactSet, NYSE, WFE, GS Global ECS

Source: FactSet, NYSE, WFE, GS Global ECS

**Lessons from Japan's foreign board: sustainability is key**

Foreign companies raised capital in the Japanese stock market as early as in 1973 when six companies, including Dow Chemicals (US) and Paribas (France), were listed on December 18, 1973. Throughout the Japanese economic bubble period, up to 127 (in 1991) foreign companies were listed on the Tokyo Stock Exchange, featuring multi-national corporations such as BP, GE, and IBM. Foreign companies were attracted by the remarkable economic growth of Japan at the time, and the elevated valuations of Japanese-listed shares.

As the air came out of Japan's bubble in the 1990s, most of the foreign companies delisted their shares due to limited trading volume and the realization that the bubble period was over. Currently, only 13 foreign companies are still listed in Japan, including JP Morgan, Citigroup and Bank of America. The case of Japan's foreign board illustrates the idea that foreign companies have substantial appetite for listing in high-growth (or high valuation) markets, but ultimately this is a short-term phenomenon if the growth or liquidity proves to be just a temporary feature of that market.

**Exhibit 45: Numbers of foreign companies listed on the Tokyo Stock Exchange since 1973**


Source: TSE, Goldman Sachs Global ECS Research

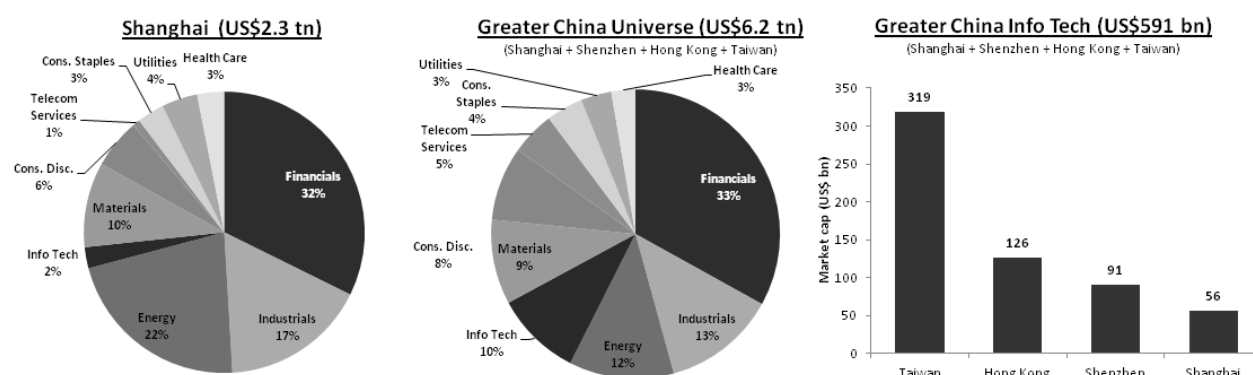
**Foreign board: implications for Shanghai**

We believe that Shanghai has an excellent chance of creating a successful foreign board, which is different from becoming a regional financial centre. The focus of the foreign board would still be very much on China operations. The constraints on the use of proceeds and the measured approach (appropriate, in our view) of the Chinese government towards financial innovation probably make the possibility of Shanghai becoming a regional financial centre much less likely.

Although consensus is focused on Hong Kong companies as potential candidates for the foreign board, we think there may eventually be a larger opportunity from regional technology companies, particularly from Taiwan and Korea, even before full currency convertibility. The number of large joint ventures in the technology space in China has increased, so we would expect the government's focus on the commercial expansion of Western and Central China to dovetail quite well with the large capital needs of technology ventures. Similarly, we can expect global automakers and financial conglomerates to want to tap the A-share markets to fund China expansion plans.

For Taiwan in particular, where cross-strait relations have been steadily improving since Ma Ying-Jeoh was elected in 2008, the technology companies derive much of their value from their operations in China. But their capitalization is listed almost entirely in Taiwan, where the capital markets are relatively small. Therefore, it would make sense to fund further expansion plans in China from the Chinese capital market, both from the corporate and investor points-of-view.

In Exhibit 46, we highlight the diminutive size of the tech sector listed in Shanghai, compared with the greater China aggregate of 10%, because of the dominant size of the Taiwan tech sector. Although we do not expect relisting of existing stakes, it would not surprise us if new expansion was funded by new A-share offerings.

**Exhibit 46: Tech sector in Shanghai is diminutive compared with Greater China Tech sector as a whole**


## Theme 3. Opening of the Currency and Domestic Equity Markets

**In addition to further deepening in the financial markets, over the next decade we expect China to lay the groundwork for the opening up of the currency to a fully convertible floating regime, and the opening up of the domestic A share equity market to foreign investors. The implications of this are that the capital boundaries should become gradually more porous, as the authorities become more comfortable with the new environment.**

### Currency convertibility

The Chinese government has expressed the desire for the CNY to become fully convertible, eventually. Although we have not laid out a timeframe for a final declaration of convertibility, our Economics team has been focused on thinking about the various milestones along the path to convertibility. Two recent papers highlight our latest thinking:

In *Global Economics Paper No. 196*, “Global Reserve Currencies and the SDR”, May 17, 2010, Jim O’Neill and Mike Buchanan put forward the following arguments for making the CNY a stronger part of the SDR, on the way to liberalization of the Chinese capital account:

- Elevating the status of the CNY would support the case for a greater weight in the Special Drawing Right (SDR), and hence, greater representation in global economic policies.
- By denominating transactions in CNY, it would significantly reduce the exchange rate risks of Chinese exporters and importers.
- By having greater recognition of the CNY globally, it would also enhance the competitiveness of China’s financial institutions, as China prepares its way towards liberalizing its capital account and Chinese financial institutions set their footprints offshore.

In “*Asia Economics: Hong Kong as an offshore CNY centre*”, published on the same day, Enoch Fung argues that the best way to begin opening up the CNY is to encourage the usage of the CNY via an offshore CNY centre. An offshore CNY centre, free of capital controls, would provide a platform for CNY transactions to take place. We expect Hong Kong to be the dominant offshore RMB centre, for the following reasons:

- China has designated Hong Kong as the primary offshore CNY centre, and we expect it to develop similarly to London’s experience in becoming the dominant Eurodollar centre.
- China’s trade deficit with Asia and the tightly integrated nature of the regional supply chain are other strong reasons for Hong Kong to become the CNY transactional hub.
- China will need to increase the amount of CNY in circulation as one of the prerequisites for a CNY-HKD peg in the long term.
- However, in order to increase the amount of CNY in circulation, it is necessary to have more CNY-denominated assets (especially bonds) with attractive returns, which would encourage offshore accumulation of CNY.

### Opening up the A shares: sooner or later

As the currency gains a greater offshore presence and becomes more freely tradable, we think foreign investors will likely also be granted greater access to the domestic equity market (and domestic investors will be granted greater

access to global equity markets). This would further drive price convergence between A and H shares because it would allow investors on either side of the border to buy the cheaper of the two, arbitraging A and H valuations into relative sync. In turn, this would make it easier for authorities to grant greater access, because there would be a lower probability of a market dislocation, once everything became freely tradable.

The issue of the eventual opening of the A-share market to foreign investors is a large topic in itself, but for the purposes of this report we think the following observations are pertinent:

### Long-term direction

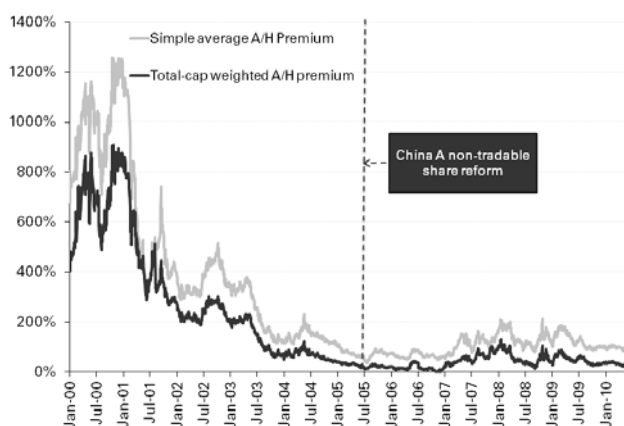
Legally, A and H shares carry the same legal rights as far as the underlying corporate is concerned, but they trade on different exchanges and are therefore traded by nearly separate pools of money, and are currently not interchangeable. Once foreign investors are granted access to A shares (and presumably domestic investors would be allowed access to H and Red shares), the prices of stocks listed on both exchanges should converge, subject to the marginal costs of doing the arbitrage. Although share fungibility (the ability to deliver either A or H shares to settle trades) is not required for the purposes of pricing convergence, full legal fungibility would almost certainly make the shares trade within a narrower band.

At the moment, the price differentials are substantial, although they are much lower than they have been in the past (Exhibit 47).

From our discussion with a wide variety of Chinese authorities, eventually the government plans for A and H shares to be opened up to all investors. Since H shares are denominated in HKD and A shares are denominated in RMB, full currency convertibility would be an important prerequisite to this move. As discussed above, the authorities are also working towards the goal of currency convertibility, albeit gradually.

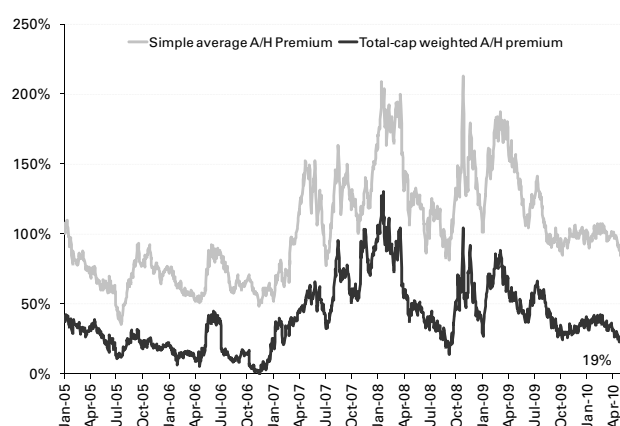
The presence of large A-H share valuation differentials is a potential problem, which would conceptually impede the eventual goal of opening up the equity markets. A-H share price convergence would involve some combination of a valuation decline for the more expensive A-share market and a valuation gain for the H-share market, given that A shares generally trade more expensively than H shares, which would probably not be attractive for A-share investors. Historically, most of the 'convergence' has been borne by the domestic A-share investor, from premia that reached 1,000% in 2001, to relatively low levels now (Exhibits 47 and 48—dual-listed and aggregate market level valuation premia).

**Exhibit 47: A-share premium for all dual A/H-listed stocks, since 2000**

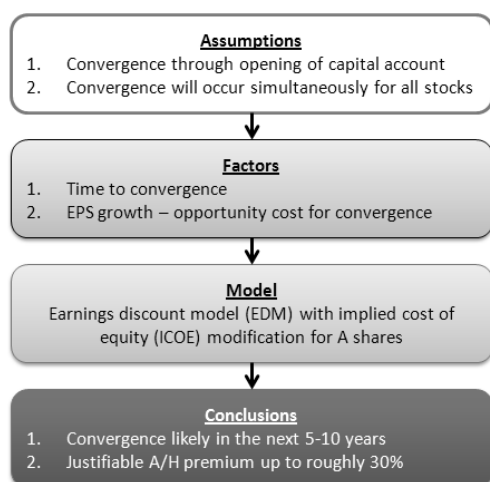


Source: Bloomberg, DataStream, Goldman Sachs Global ECS Research.

**Exhibit 48: A-share premium for all dual A/H-listed stocks, 2005 to present**



Source: Bloomberg, DataStream, Goldman Sachs Global ECS Research

**Exhibit 49: Summary of our 2007 paper on China A-H premiums**


Source: Goldman Sachs Global ECS Research.

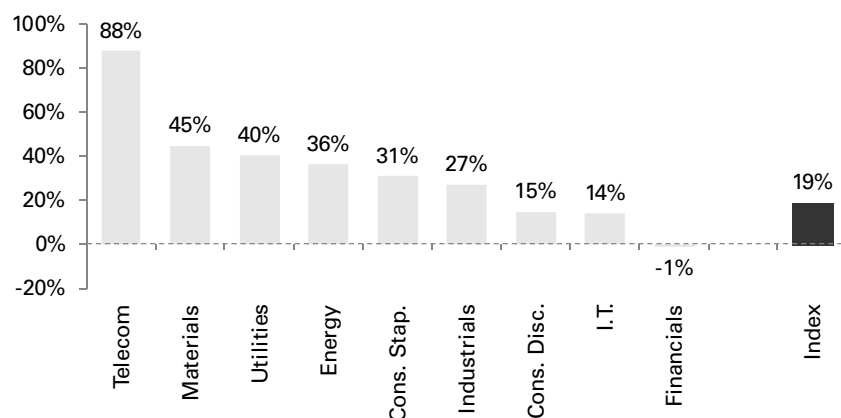
In 2007, we published a report (“*China A-H premiums: Unjustifiable in theory*”, October 31, 2007) looking at the potential justification of A-share premia, and concluded that: a) the level of premia should be related to the expected period until share unification, because of the different set of investment options available to domestic investors, and b) under most reasonable scenarios, it was hard to justify a premium for any single stock of more than 20%-25%. The current level of premium, on a weighted-average basis, is roughly 19%.

From both the index level and the aggregate sector level, it appears that the valuation premium has fallen. We find this notable for two reasons: first, because it has primarily happened from the A-share side, rather than the H-share side, and, second, despite the abundant liquidity in the A-share market, and a large rise in all global markets from March 2009, the A-share premium has continued to decline.

In past episodes, the premium tended to correlate with the direction of the market and so the fact that the premium has contracted since the 2009 lows implies that the premium may have been actively guided down. As one sign of

**Exhibit 50: A-H premium by GICS sector**

% difference in 12-month forward P/E multiples; CSI 300 (A shares) vs. MSCI China (Offshore)



Source: Bloomberg, FactSet, MSCI, Goldman Sachs Global ECS Research.

the 're-entry' of Chinese A-share valuations, on nearly all valuation metrics, the CSI 300 A-share index is currently more attractive than the MSCI India, which is an index fully accessible by foreign investors. For these reasons, there is a possibility that the government is slowly exerting pressure to contain the premium (both through soaking up domestic liquidity, as well as making sure the A-share market doesn't run up too much).

### A gradual approach is both likely and recommended

China has been opening up its equity markets since non-tradable A-share reform in 2005 and the QFII system was introduced in 2006. We believe regulators understand that the large valuation differentials that existed in 2000 (Exhibit 47) present future problems, and it is better to let air out of the balloon over a period of time than simply to let the market re-price everything in a short period of time. The progress of QFII since 2006 empirically shows a slow-and-steady trend.

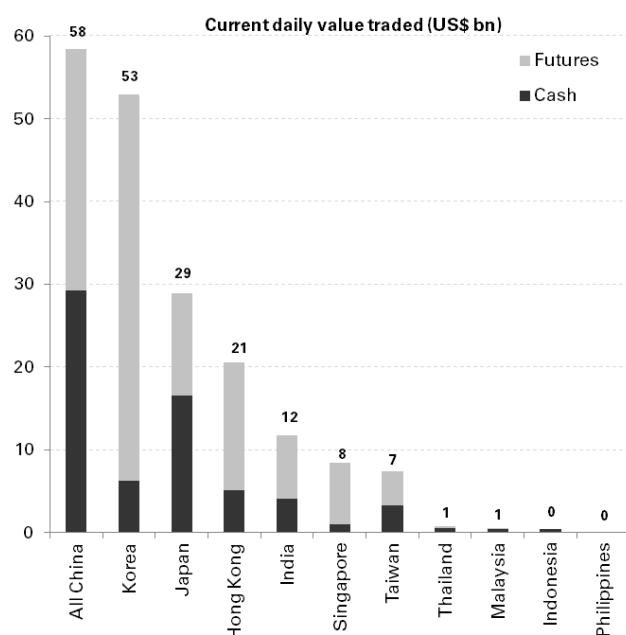
We believe the Chinese authorities will continue down the path of gradual opening up and greater cross-border flows, in order to minimize any potential dislocation effects.

## Projecting Capitalization/Turnover in 2020

The projection of turnover and capitalization in the future is an inexact process at best but we have laid out the fundamental drivers for Shanghai to become a much larger financial market in 2020, based on China's economic growth, Shanghai's increasing role at the centre of Chinese and regional equity, and the opening up of both the currency and equity markets.

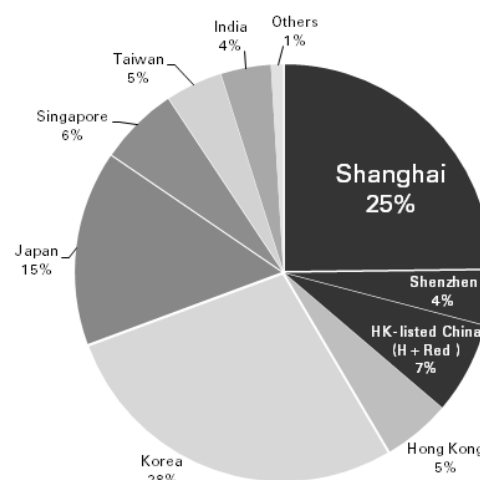
Although we are primarily focused on the turnover of the equity market because it appears to have a reasonable linkage with GDP (perhaps because we have deliberately avoided the question of valuation), the implied market capitalizations are also shown as part of the calculation.

Exhibit 51: Current cash and futures market turnover



Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research

Exhibit 52: Shanghai, Korea and Japan contribute to bulk of liquidity in the region



Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research

**Exhibit 53: Futures are a significant contributor to overall liquidity, especially in Korea, Hong Kong and Singapore**

Year (2010E)	All China	Hong Kong	India	Indonesia	Japan	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand	Total region	US
GDP (US\$ bn)	5,633	233	1,566	702	4,747	1,013	230	189	210	433	302	15,258	14,715
Market Cap. (US\$ bn)	3,803	1,230	1,373	249	3,535	876	322	92	492	643	197	12,812	15,924
Turnover / GDP ratio (%)	131%	553%	65%	15%	88%	156%	47%	11%	124%	193%	49%	111%	322%
<b>Avg. daily cash value traded (US\$ bn)</b>	<b>29.2</b>	<b>5.1</b>	<b>4.1</b>	<b>0.4</b>	<b>16.5</b>	<b>6.3</b>	<b>0.4</b>	<b>0.1</b>	<b>1.0</b>	<b>3.3</b>	<b>0.6</b>	<b>67</b>	<b>188.2</b>
5 year CAGR (cash value traded)	69%	22%	23%	29%	4%	20%	7%	41%	18%	5%	2%	23%	18%
Futures / Cash TO (X) - Domestic	100%	96%	189%	0%	75%	747%	34%	0%	49%	125%	30%	158%	350%
Domestic futures (ADVT -US\$ bn)	29.2	4.9	7.7	0.0	12.4	46.7	0.1	0.0	0.5	4.1	0.2	106	658.6
Non-domestic futures (ADVT - US\$ bn) <sup>1</sup>	-	10.5	-	-	-	-	-	-	6.9	-	-	17	-
<b>Avg. daily futures value traded (US\$ bn)</b>	<b>29.2</b>	<b>15.4</b>	<b>7.7</b>	<b>0.0</b>	<b>12.4</b>	<b>46.7</b>	<b>0.1</b>	<b>0.0</b>	<b>7.4</b>	<b>4.1</b>	<b>0.2</b>	<b>123</b>	<b>658.6</b>
<b>Avg. daily total (cash + futures) value traded (US\$ bn)</b>	<b>58.4</b>	<b>20.6</b>	<b>11.7</b>	<b>0.4</b>	<b>28.9</b>	<b>53.0</b>	<b>0.6</b>	<b>0.1</b>	<b>8.4</b>	<b>7.5</b>	<b>0.8</b>	<b>190.3</b>	<b>848.8</b>
% share (total value traded)	31%	11%	6%	0%	15%	28%	0%	0%	4%	4%	0%	100%	

Note: For non-domestic futures we consider Nikkei, MSCI Taiwan and NIFTY futures listed on SGX; HSCEI and offshore contribution from HSI futures for HK Source: Bloomberg, WFE, World Bank, CFFEX, SHFE, GS Global ECS Research

Our assumptions are as follows:

- We have used our Global Economics team's economic forecasts for 2020.
- We estimate turnover/GDP ratios by extrapolation of the current function, adjusting for economies where we assume markets change slopes as they mature.

**Current liquidity landscape—2010**

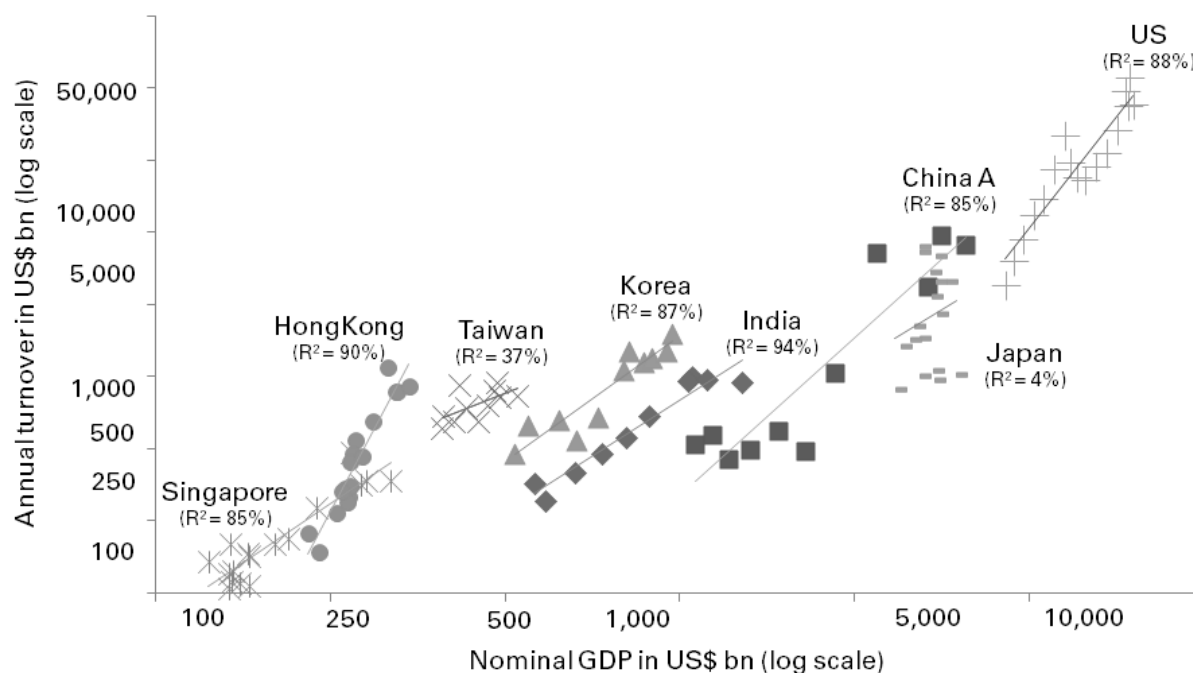
Shanghai already has one of the most active stock markets in the region. In terms of overall daily liquidity, Shanghai currently ranks second in the Asian market, just below Korea where the bulk of the liquidity comes from the futures trading. We estimate that the combined trading activities of Chinese shares (Shanghai + Shenzhen + Offshore) represents ~36% of the regional liquidity (Exhibit 52).

**Projecting 2020 cash turnover**

As discussed earlier, we look at the ratio of total cash value traded to GDP across different markets. This ratio demonstrates the relationship between capital market development and economic growth. In addition, it appears to be a more stable measure than other market development proxies such as the market capitalization to GDP ratio or turnover velocity ratio. See Appendix – II for details.

We analyzed the historical cash market turnover and GDP for G7 markets and the majority of large emerging economies, dating back to 1995. For the relatively small ASEAN markets, we excluded the Asian financial crisis from the analysis.

Our analysis shows that the turnover of a market is positively correlated with its economic size, with each market having a best-fit relationship depending on the economic size and depth of financial markets. Most of the Asian markets show a close fit ( $R^2$ ) in the range of 70% – 90%, with the exception of Taiwan and Japan. For Taiwan, the turnover declined dramatically during the dot com bubble and the Asian financial crisis, whereas, for Japan, trading activities remain robust despite little change in economic size (the 'lost decade' for Japan). We argue that as markets mature, certain economies will see a phase shift and the cash trading activity can be estimated by the extrapolation of the current function, adjusting for slopes as they mature.

**Exhibit 54: Turnover activity of a market is closely related to its economic size**

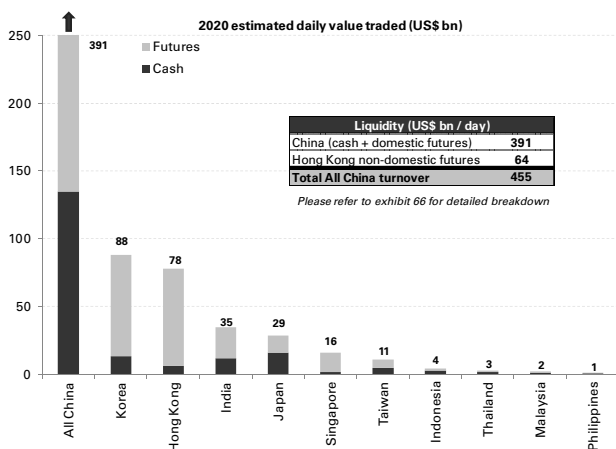
Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

## 2020 Turnover Projection for the Regional Markets

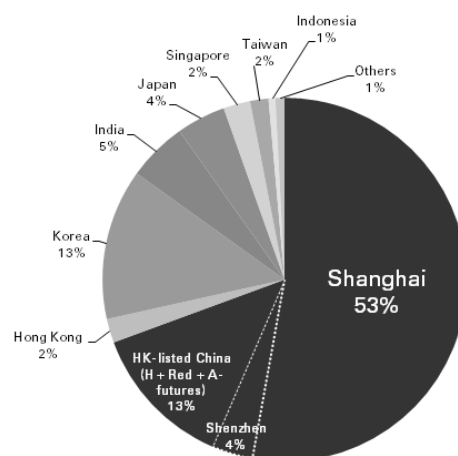
### BASE CASE: gradual opening benefits Hong Kong

In our base case, we estimate that the traded value of equities and futures in China could reach US\$455bn/day, or roughly 70% of regional liquidity, compared with 36% now. The liquidity in Shanghai alone could reach over US\$350bn/day by 2020, over 75% of Chinese liquidity, and as much as 53% of regional liquidity.

On our numbers, Hong Kong could slightly increase its liquidity share from 12% to 15%, through a relative rebalancing of flow away from the Hong Kong cash market, and towards its offshore China (HSI, HSCEI, A-share) futures markets, which could account for fully 13% of regional liquidity.

**Exhibit 55: Shanghai should dominate regional turnover in 2020**

Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research

**Exhibit 56: Estimated turnover breakdown in 2020**

Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research



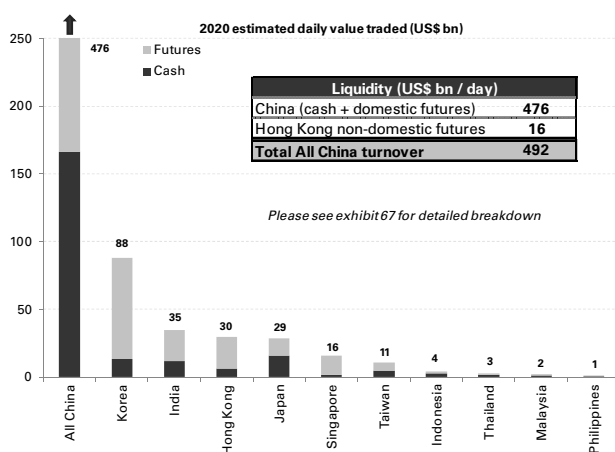
**Exhibit 57: Base case 2020 turnover projections for Asian markets**

Year (2020 E)	All China	Hong Kong	India	Indonesia	Japan	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand	Total region	US
GDP (US\$ bn)	13,167	400	3,166	985	5,024	1,895	493	353	293	558	539	26,872	18,390
CAGR (2010 - 2020)	8.9%	5.5%	7.3%	3.4%	0.6%	6.5%	7.9%	6.4%	3.4%	2.6%	6.0%	6.2%	2.3%
Turnover / GDP (%)	246%	400%	95%	65%	80%	180%	65%	30%	160%	210%	75%	183%	350%
Avg. daily cash value traded (US\$ bn)	134.7	6.3	11.9	2.5	15.9	13.5	1.3	0.4	1.9	4.7	1.6	195	255.4
CAGR (2010 - 2020)	16.5%	2.2%	11.4%	19.6%	-0.3%	8.0%	11.5%	18.0%	6.0%	3.4%	10.7%	11.3%	3.1%
Futures / Cash TO (X) - Domestic	200%	120%	190%	55%	80%	550%	65%	55%	70%	130%	60%	198%	300%
Domestic futures (ADVT - US\$ bn)	256.8	7.6	22.7	1.4	12.8	74.4	0.8	0.2	1.3	6.1	1.0	385	766.3
Non-domestic futures (ADVT - US\$ bn)*		63.8**	-	-	-	-	-	-	12.5	-	-	76	-
Avg. daily futures value traded (US\$ bn)	256.8	71.4	22.7	1.4	12.8	74.4	0.8	0.2	13.8	6.1	1.0	461	766.3
Avg. daily total (cash + futures) value traded (US\$ bn)	391.4**	77.8	34.6	3.9	28.7	88.0	2.1	0.7	15.7	10.7	2.6	656.1	1,021.7
CAGR (2010 - 2020)	21%	14%	11%	25%	0%	5%	14%	23%	6%	4%	13%	13%	2%
% share (total value traded)	60%	12%	5%	1%	4%	13%	0%	0%	2%	2%	0%	100%	

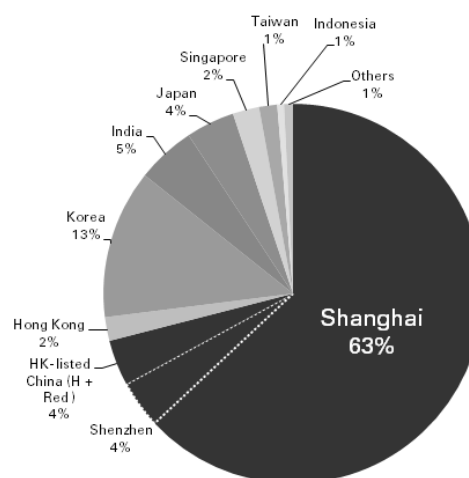
\*Note: For non-domestic futures we consider Nikkei, MXTW and NIFTY futures listed on SGX; HSCEI and offshore contribution from HSI futures for HK  
Source: Bloomberg, WFE, World Bank, SHFE, GS Global ECS Research. \*\* All china turnover = 391 + 64 = 455 US\$bn/day. Please see Ex 66 for details

**FULLY OPEN CASE: full openness draws more liquidity to Shanghai**

In our fully open case, we estimate that the traded value of equities and futures in China could reach US\$490bn/day, or roughly 70% of regional liquidity, compared with 36% now. The liquidity in Shanghai alone could reach over US\$436bn/day by 2020, around 90% of Chinese liquidity, and as much as 63% of regional liquidity.

**Exhibit 58: [Fully open case] Shanghai would dominate regional turnover even more in 2020**

Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research

**Exhibit 59: [Fully open case] Shanghai would be even more liquid, and take market share from Hong Kong**

Source: Bloomberg, WFE, World Bank, CFFEX, GS Global ECS Research

**Exhibit 60: [Fully open case] 2020 turnover projections for Asian markets**

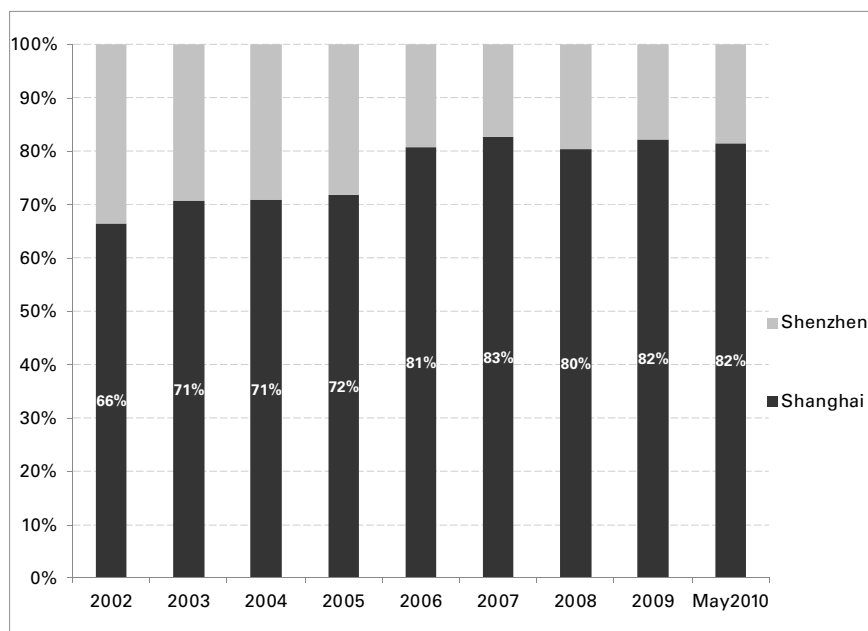
Year (2020 E)	All China	Hong Kong	India	Indonesia	Japan	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand	Total region	US
GDP (US\$ bn)	13,167	400	3,166	985	5,024	1,895	493	353	293	558	539	26,872	18,390
CAGR (2010 - 2020)	8.9%	5.5%	7.3%	3.4%	0.6%	6.5%	7.9%	6.4%	3.4%	2.6%	6.0%	6.2%	2.3%
Turnover / GDP (%)	296%	400%	95%	65%	80%	180%	65%	30%	160%	210%	75%	212%	350%
Avg. daily cash value traded (US\$ bn)	166.4	6.3	11.9	2.5	15.9	13.5	1.3	0.4	1.9	4.7	1.6	227	255.4
CAGR (2010 - 2020)	19.0%	2.2%	11.4%	19.6%	-0.3%	8.0%	11.5%	18.0%	6.0%	3.4%	10.7%	11.3%	3.1%
Futures / Cash TO (X) - Domestic	200%	120%	190%	55%	80%	550%	65%	55%	70%	130%	60%	193%	300%
Domestic futures (ADVT - US\$ bn)	309.3	7.6	22.7	1.4	12.8	74.4	0.8	0.2	1.3	6.1	1.0	438	766.3
Non-domestic futures (ADVT - US\$ bn)*		15.8**	-	-	-	-	-	-	12.5	-	-	28	-
Avg. daily futures value traded (US\$ bn)	309.3	23.4	22.7	1.4	12.8	74.4	0.8	0.2	13.8	6.1	1.0	466	766.3
Avg. daily total (cash + futures) value traded (US\$ bn)	475.8**	29.8	34.6	3.9	28.7	88.0	2.1	0.7	15.7	10.7	2.6	692.4	1,021.7
CAGR (2010 - 2020)	23%	4%	11%	25%	0%	5%	14%	23%	6%	4%	13%	13%	2%
% share (total value traded)	69%	4%	5%	1%	4%	13%	0%	0%	2%	2%	0%	100%	

\*Note: For non-domestic futures we consider Nikkei, MXTW and NIFTY futures listed on SGX; HSCEI and offshore contribution from HSI futures for HK  
Source: Bloomberg, WFE, World Bank, SHFE, GS Global ECS Research. \*\*All china turnover = 476 + 16 = **492 US\$bn/day**. Please see Ex 67 for details

**Turnover breakdown for Chinese bourses in 2020**

Since we ran the above analysis on a full country basis and because the Chinese capital markets are fragmented, we needed to estimate Shanghai's market share within the China universe based on the three themes in this report. Therefore, for Shanghai's position within China, we have assumed that by 2020:

- The foreign board is domiciled only in Shanghai, and is equivalent to 5% of aggregate domestic market capitalization in our base case and 7.5% of aggregate domestic market capitalization in our full-open case.
- The equity futures market remains at CFFEX in Shanghai; an offshore A-share futures contract is introduced in Hong Kong.

**Exhibit 61: % shares of overall A-share market cap**

Source: WFE, Bloomberg, GS Global ECS Research

**Exhibit 62: Our base case assumes Shanghai / Shenzhen capitalization ratio to stabilize at 5:1**

Market capitalization breakdown			
All China market	2010	2020	
	Current	base case	full-open case
Shanghai	59%	67%	74%
Shenzhen	13%	13%	13%
HK- listed China (H + Red )	28%	20%	14%
<b>Ratio (Shanghai / Shenzhen)</b>	<b>4.6:1</b>	<b>5.0:1</b>	<b>5.8:1</b>

Source: WFE, Bloomberg, GS Global ECS Research

- In our fully open case, single-listed Offshore Chinese companies (H-share, red chips) would relist on Shanghai, and the vast majority of new China listings would be in Shanghai—we believe this is quite conservative considering the diminished arguments for Hong Kong listings after currency convertibility and foreign investor access to A shares. Subsequently, the Shanghai/Shenzhen capitalization ratio, which has been increasing for some time (Exhibit 61), stabilizes at 6:1. In our base case, we don't assume any relisting of offshore companies, but do assume the Shanghai/Shenzhen capitalization ratio would increase and stabilize at 5:1 because the majority of new listings would be in Shanghai.
- The turnover velocities for Shanghai and Shenzhen would be higher (and lower for H+Red) for the fully-open case than for the base case. Our turnover velocities are quite conservative, since H+Red turnover would probably be lower than the domestic exchanges, which is also currently the case.

**Estimating futures turnover: it's a little complicated (in Hong Kong)**

In estimating the futures turnover for different markets, we looked at the historical trends of futures turnover relative to the underlying cash market. For the mature markets such as Korea and Japan, we assumed the futures/cash ratio will stabilize at mid-cycle levels. For the ASEAN markets, such as the Philippines and Indonesia, which don't have futures yet, we have assumed that they will launch futures sometime in the next 10 years and the futures turnover will become roughly 55% of the cash turnover. We think the estimate is reasonable, compared with the turnover trends of other futures markets during the first decade of their launch (Appendix V).

While estimating the futures to cash turnover, we have distinguished the domestic futures (futures trading on the same exchange as the underlying cash equities) from the non-domestic ones (futures listed on a different exchange from the underlying equities). This is particularly important for Singapore and Hong Kong / China.

**We expect Singapore offshore futures liquidity to double**

For the Singapore exchange (SGX), the majority of non-domestic futures liquidity comes from Nikkei 225, MSCI Taiwan, and NIFTY futures. As shown in Exhibit 63, the non-domestic futures currently trade ~ US\$7bn a day on SGX.

To estimate turnover in 2020, we assume an above-trend futures to domestic market cash ratio for each of the contracts as their underlying equity markets become more mature. Based on these, we estimate Singapore's non-domestic futures will trade ~US\$12.5bn a day in 2020.

**Exhibit 63: Major non-domestic futures currently trade around US\$7bn a day on SGX**

Non - domestic futures listed on SGX	2010			2020 estimated		
	Cash turnover (domestic market)	Futures / domestic cash ratio	Futures turnover (US\$ bn / day)	Cash turnover (domestic market)	Futures / domestic cash ratio	Futures turnover (US\$ bn / day)
SGX Nikkei	16.5	29%	4.8	15.9	<b>40%</b>	6.4
SGX MSCI Taiwan	3.3	51%	1.7	4.6	<b>80%</b>	3.7
SGX NIFTY	4.1	9%	0.4	11.9	<b>20%</b>	2.4
	23.9		<b>6.9</b>	32.5		<b>12.5</b>

Source: MSCI, NSE, Bloomberg, GS ECS Research Estimates

**In Hong Kong/China, the Hang Seng makes the calculations more complicated**

For the HSCEI futures listed on the HKEx, the underlying index HSCEI only has Chinese offshore companies listed in Hong Kong, so we treat the entire turnover of HSCEI futures as 'non-domestic' for the Hong Kong Exchange, contributing to China liquidity.

The other major contract listed on the HKEx is the HSI futures. Currently the underlying HSI index is composed of 57% China offshore companies (H+Red) and the rest are pure-play Hong Kong names (Exhibit 64), although this ratio has been increasing over time in favour of China. To capture the implied level of China futures turnover, we have used the offshore China stock weighting of the HSI to calculate current and 2020 turnover. The remaining exposure of HSI is treated as the pure-play Hong Kong futures turnover.

To summarize, the pure-play HK portion of HSI futures contribute to Hong Kong turnover, whereas China turnover equals the entire HSCEI futures turnover and the non-HK portion of the HSI futures. Based on this methodology, Hong Kong 'non-domestic' futures currently trade US\$11bn a day (Exhibit 64).

Furthermore, to project the turnover in 2020 of HSI futures and then split that into a Hong Kong pure-play and offshore China portion, we needed to estimate the rough composition of Hang Seng index a decade from now. In our base case, we assume the Hang Seng index would consist primarily of offshore (H+Red) names, with offshore three times as large as pure-play Hong Kong names. We also assume the future to cash ratio for HSCEI futures as 120% (in line with trend). Based on these assumptions, our base case suggests that Hong Kong non-domestic futures may trade around US\$37bn a day in 10 years from now.

**Exhibit 64: China offshore futures in Hong Kong currently trade around US\$ 11 bn a day; we estimate them to trade US\$ 37 bn in a decade.**

(a)	(b)	(c)	(d)	(e)	(f)	(g) = (d)-(e)-(f)	(h)	(i)	(j) = (h) * (c)	(k) = (j) / (g)	(l) = (i) + (b)*(h)	(l) / (e + f)
HSI index wgt (%)			Cash turnover (US\$ bn / day)				Futures turnover (US\$ bn / day)		Hong Kong part of HSI		HK-listed China	
Year End	HK-listed China	Hong Kong	HKEX	H shares	Red chips	Hong Kong	HSI	HSCEI	Futures turnover (US\$ bn / day)	Futures / cash ratio	Futures turnover (US\$ bn / day)	Futures / cash ratio
2005	27	73	2.3	0.5	0.3	1.5	3.7	0.3	2.7	175%	1.3	158%
2006	39	61	4.4	1.3	0.6	2.5	5.6	0.9	3.4	135%	3.1	165%
2007	51	49	11.2	3.9	1.4	5.9	10.5	3.6	5.1	87%	9.0	169%
2008	57	43	9.3	3.1	1.2	5.0	11.5	4.1	5.0	100%	10.5	246%
2009	57	43	8.0	2.6	1.0	4.3	9.6	3.3	4.1	94%	8.8	242%
May-10	57	43	8.5	2.4	1.0	5.1	11.4	4.0	4.9	96%	10.5	310%
2020 (Base case)	75	25				6.3	30.5	14.1	7.6	120%	36.9	
2020 (Full-open case)	40	60				6.3	12.7	10.7	7.6	120%	15.8	

Source: HKEX, MSCI, Bloomberg, GS Global ECS Research

**Exhibit 65: Non-domestic futures ( A-shares, HSCEI, part of HSI) in Hong Kong may trade around US\$64bn a day in 2020.**

<b>Hong Kong "non-domestic" futures ( A-shares , HSCEI , part of HSI )</b>		
	2010	2020
SH + SZ cash turnover (US\$ bn)	26	108
Futures / cash turnover ratio	-	25%
A share futures turnover (US\$ bn)	-	26.9
HSCEI + part of HSI futures turnover (US\$ bn)	10.5	36.9
<b>Total non-domestic futures for Hong Kong (US\$ bn)</b>	<b>10.5</b>	<b>63.8</b>

Source: HKEX, MSCI, WFE, Bloomberg, GS Global ECS Research

However, in our fully-open scenario, as stated earlier, we assume most of newly listed offshore companies would be listed in Shanghai and the majority of single-listed offshore names will relist back. Hence, the share of H+Red might reduce significantly to around 40% of the Hang Seng Index. We outline our assumptions and calculations in Exhibit 64.

As stated earlier, our base case does not assume full currency convertibility or full access across equity markets, but we do assume that a substantial amount of relaxation will taken place, which might provide more opportunity for Hong Kong, specifically the introduction of an HK-listed A-share future. We assume that, by 2020, the Hong Kong A-share futures turnover would be roughly a quarter of domestic A-share market (Shanghai + Shenzhen) cash turnover. This is a conservative estimate, compared with the precedents from other Asian markets and given the gradual convertibility between A and H markets we envisage by 2020.

We estimate the A-share futures to trade around US\$37bn a day in 2020, while the overall non-domestic futures turnover in HKEx should be almost US\$64bn, as illustrated in Exhibit 65.

A further detailed decomposition of estimated turnover into the Shanghai, Shenzhen and Offshore portion (listed in Hong Kong) is shown in Exhibits 66 - 67.

## Results of the turnover analysis

The results of this analysis (Exhibit 57), if our results are in the right (relative) ballpark, are:

- By 2020, equity trading volumes in China could grow to US\$130bn/day, while futures volumes could be US\$320bn/day. With US\$455bn/day in aggregate liquidity, China could account for nearly 70% of regional liquidity.
- Compared with where the US stands now (US\$188bn/day in equity market liquidity, and US\$847bn/day in equity + futures liquidity on a GDP slightly higher than where we estimate China will be in 2020, we believe our aggregate China estimates are on the conservative side.
- Shanghai alone could account for over 75% of China liquidity, by adding the liquidity of a foreign board and futures to Shanghai-listed equity, or about 53% of regional liquidity.

**Exhibit 66: Base case: Shanghai could account for over 75% of China liquidity, trading US\$ 350 bn a day**

Base Case										
Market	Market capitalization (US\$ bn)			Average daily turnover (US\$ bn)						
	Domestic	% share	Foreign board	Velocity	Domestic	% share	Foreign	Futures	Total (cash + futures)	% share
Shanghai	8,778	67%	658	240%	84	65%	6	257	347	<b>76%</b>
Shenzhen	1,756	13%	-	343%	24	19%	-	-	24	<b>5%</b>
HK- listed China (H + Red + A- futures)	2,633	20%	-	200%	21	16%	-	64	85	<b>19%</b>
<b>All China</b>	<b>13,167</b>		<b>658</b>	<b>246%</b>	<b>128</b>		<b>6</b>	<b>321</b>	<b>455</b>	<b>100%</b>

Source: Bloomberg, WFE, World Bank, CFFEX, SHFE, GS Global ECS Research

**Exhibit 67: In a fully-open scenario, Shanghai could account for as much as 90% of China liquidity**

Fully open Case										
Market	Market capitalization (US\$ bn)			Average daily turnover (US\$ bn)						
	Domestic	% share	Foreign board	Velocity	Domestic	% share	Foreign	Futures	Total (cash + futures)	% share
Shanghai	9,681	74%	988	300%	115	75%	12	309	436	<b>89%</b>
Shenzhen	1,682	13%	-	422%	28	18%	-	-	28	<b>6%</b>
HK- listed China (H + Red + A- futures)	1,804	14%	-	157%	11	7%	-	16	27	<b>5%</b>
<b>All China</b>	<b>13,167</b>		<b>988</b>	<b>296%</b>	<b>155</b>		<b>12</b>	<b>325</b>	<b>492</b>	<b>100%</b>

Source: Bloomberg, WFE, World Bank, CFFEX, SHFE, GS Global ECS Research

Comparing our base case to our fully-open case, we find:

- China and Shanghai would account for an even larger portion of the Asian liquidity pool than in the base case, through higher turnover ratios in the domestic markets, and via some re-listings from Hong Kong.
- Hong Kong could become a substantial beneficiary if China pursues a policy of greater openness, but without full foreign access to currency or equity markets.

## Implications of Shanghai as a Regional Financial Centre

### Progress will be gradual, but with a consistent goal

Rarely is progress linear and continuous; China and Shanghai will likely need to overcome various obstacles along their growth path. The process of growing a market, and building trust in trading, settlement, regulatory and legal systems all take time. We expect the path of China's financial markets to be a gradual one, and for regulatory caution to push back on natural demand.

The recent launch of the CSI 300 futures is a good example of a well-thought-out product, which moves China's financial markets towards a greater level of maturity, but in a controlled environment where all interested parties have had time to consider the impact of the introduction. We would expect further innovation and openness to be similarly well-studied and gradual in nature.

### Hard infrastructure has been the historical focus

As emphasized by many of the Shanghai authorities, much of the basic 'hard' infrastructure has been built, much of it in advance of the World Expo. Shanghai now has two world-class airports, a high-speed mag-lev airport train, the longest metro network in the world (11 lines, Exhibit 68), and six toll-free elevated expressways.

Despite worries about overcapacity in the property market, affordability in Shanghai is relatively low compared with New York, London and Tokyo—partly because Shanghai wages are much lower (Exhibit 70). In terms of absolute affordability, Exhibit 71 shows that average Shanghai prices are less than one-quarter those of Hong Kong, the current leader in unit price for real estate.

### The next challenges lie in the soft areas

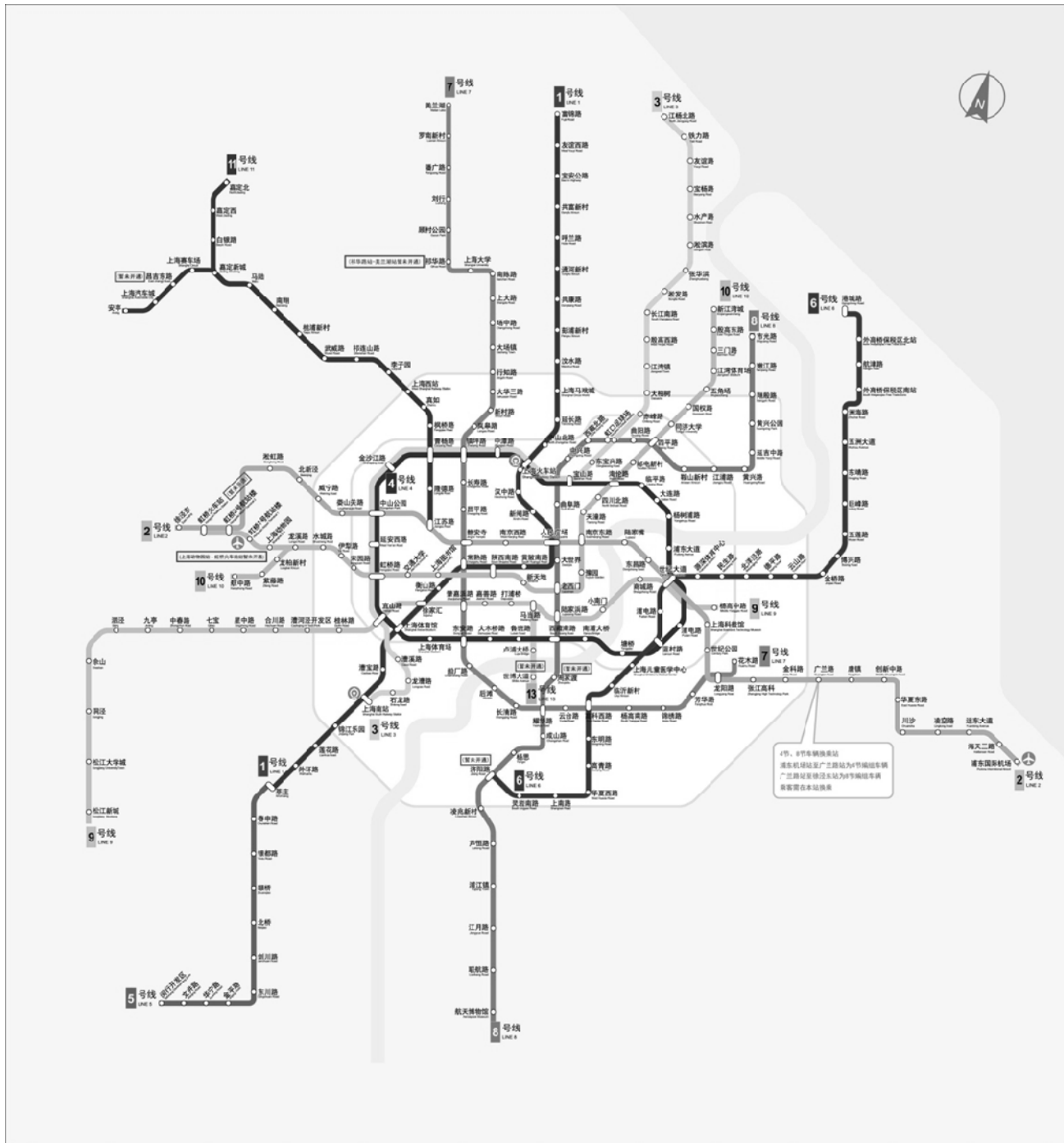
But financial centres are dependent on both human as well as financial capital, and therefore the ability of Shanghai to create a world-class 'soft' infrastructure to attract the global talent to support a position as the pre-eminent regional financial centre will be critical to realizing those goals. Exhibit 75 shows that, as a percentage of the population, Shanghai has almost the same number of people working in finance as Beijing, and about half the average of the other major global financial centres.

The flipside of high growth is inflation, and as China wrestles with inflation, the commercial centres tend to be hotbeds of inflationary pressure, and this could materially limit future growth if not controlled properly.

So far, Shanghai has managed pretty well over the last few years (Exhibit 72), although this has taken a reasonable amount of government intervention, particularly in the property market. From an expat's affordability standpoint, Shanghai has seen a big jump in its relative cost of living (Exhibit 73), and although there is still a large gap with Tokyo, on the back of the general strengthening of the CNY, we would expect this relative ranking to keep rising.

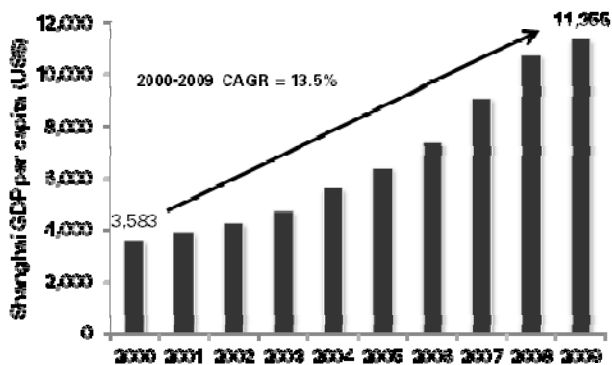
Another oft-cited 'soft' concern in China is air quality; Exhibit 74 shows that air quality has been rising since 2004, in relatively stark contrast to Beijing. In terms of liveability, Shanghai ranked a low #84 (Vancouver was #1) in the Economist Intelligence Unit's 2009 survey, which implies that despite the promise and excitement of dramatic growth, this growth won't materialize without a lot of hard work. From our discussions with local officials, they understand the broader issues, and aren't pausing to pat themselves on the back just yet.

**We will watch the commercial and 'soft' infrastructure development of Shanghai over the next decade with keen interest and great enthusiasm.**

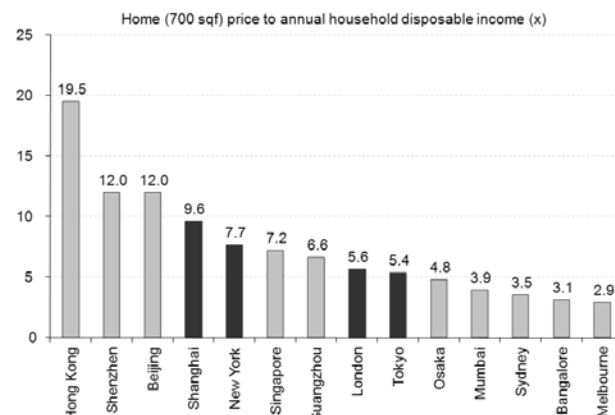
**Exhibit 68: Shanghai metro has 11 lines, 266 stations with operation length of 410 km**

Source: Shanghai Metro

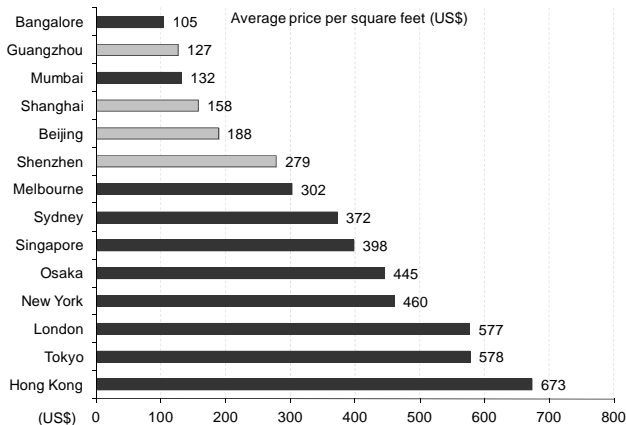


**Exhibit 69: GDP per capita has risen significantly over the last decade**

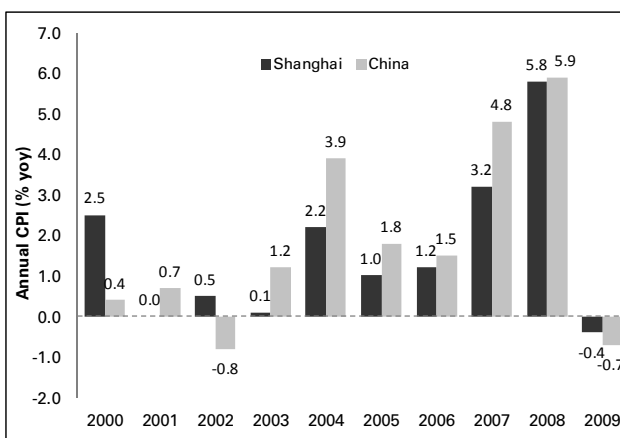
Source: CEIC, GS Global ECS Research

**Exhibit 70: Shanghai housing affordability is low relative to other financial hubs**

Source: CEIC, NCEAR, Various country Census, Goldman Sachs Research Estimates, GS ECS Global Research

**Exhibit 71: Average property prices in China's tier-one cities, and particularly in Shanghai, do not look expensive relative to global peers**

Source: CEIC, NCEAR, Various country Census, Goldman Sachs Research Estimates, GS ECS Global Research

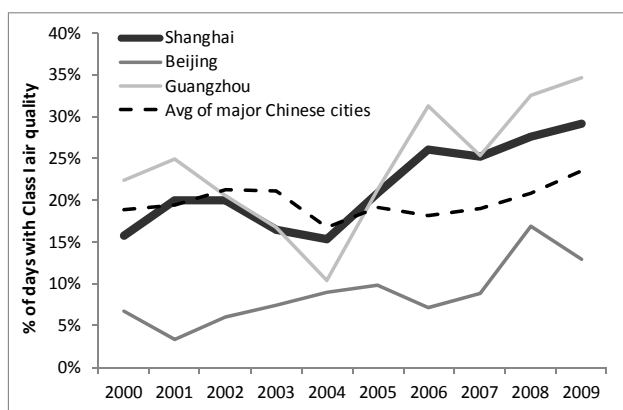
**Exhibit 72: Shanghai has managed its inflation pretty well over the last few years**

Source: CEIC, GS Global ECS Research

**Exhibit 73: Cost of living for expats has risen significantly for Shanghai in 2009**

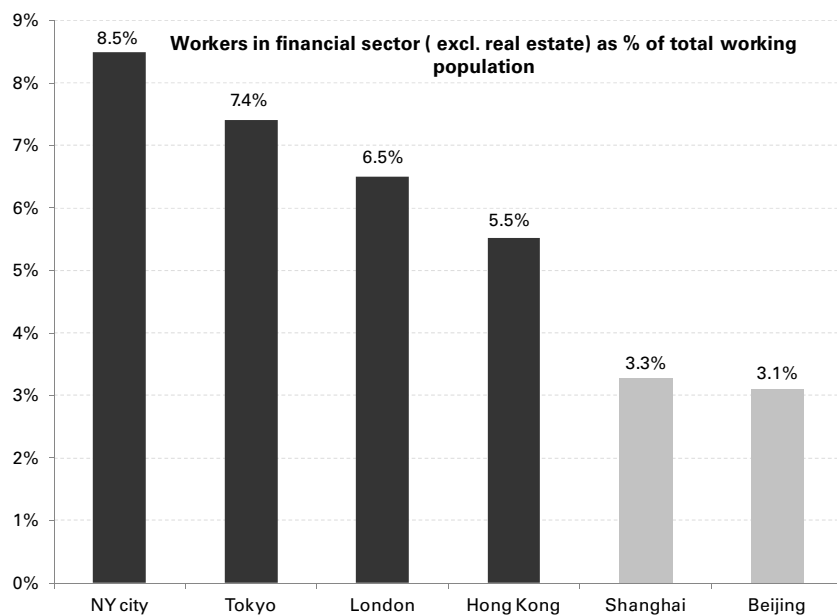
Mercer's Worldwide Cost of Living Survey			
	2009	2008	2007
Tokyo	1	2	4
Hong Kong	5	6	5
New York	8	22	15
Beijing	9	20	20
Singapore	10	13	14
<b>Shanghai</b>	<b>12</b>	<b>24</b>	<b>26</b>
London	16	3	2

Source: Mercer Cost of living survey, GS Global ECS Research

**Exhibit 74: Air quality has improved over the past few years**

Source: Ministry of Environmental Protection of the PRC, GS Global ECS Research

**Exhibit 75: Proportion of finance professionals in Chinese tier-one cities is low relative to other financial hubs; there is a need to attract more talent**



Source: ONS, NYS Dept. of labor, U.S. Bureau of Labor statistics, CEIC, Wind, GS Global ECS Research

**An adaptive challenge for other Asian financial centres**

Although we have mapped out a scenario whereby Shanghai assumes the lion's share of regional equity liquidity, we do not mean to imply that the other financial centres cannot prosper. We do believe, however, that other regional financial centres will need to adapt and find areas to compete; the history of exchanges and financial centres strongly suggests that extending the status quo usually produces sub-optimal results. **In that regard, we would like to emphasize that we have not factored in strategic and adaptive change; we have just given our vision of the likely future based on our views of GDP growth and the central tendencies of the equity market. We would fully expect financial centres such as Hong Kong and Singapore to continue to press forward on financial innovation and product offerings as they compete for the mind- and wallet-share of the investment community.**

We have focused primarily on the listed equity markets, but there are many other aspects of the financial world where we believe important opportunities lie: asset management, private wealth, private equity, venture capital and OTC derivatives, to name a few. In the US, regional financial hubs have focused on commodity derivatives, index and sector ETFs, ADRs, single share options, and electronic trading, even in the shadow of the NYSE and Nasdaq.

**Gradual opening of China implies ex-China opportunities**

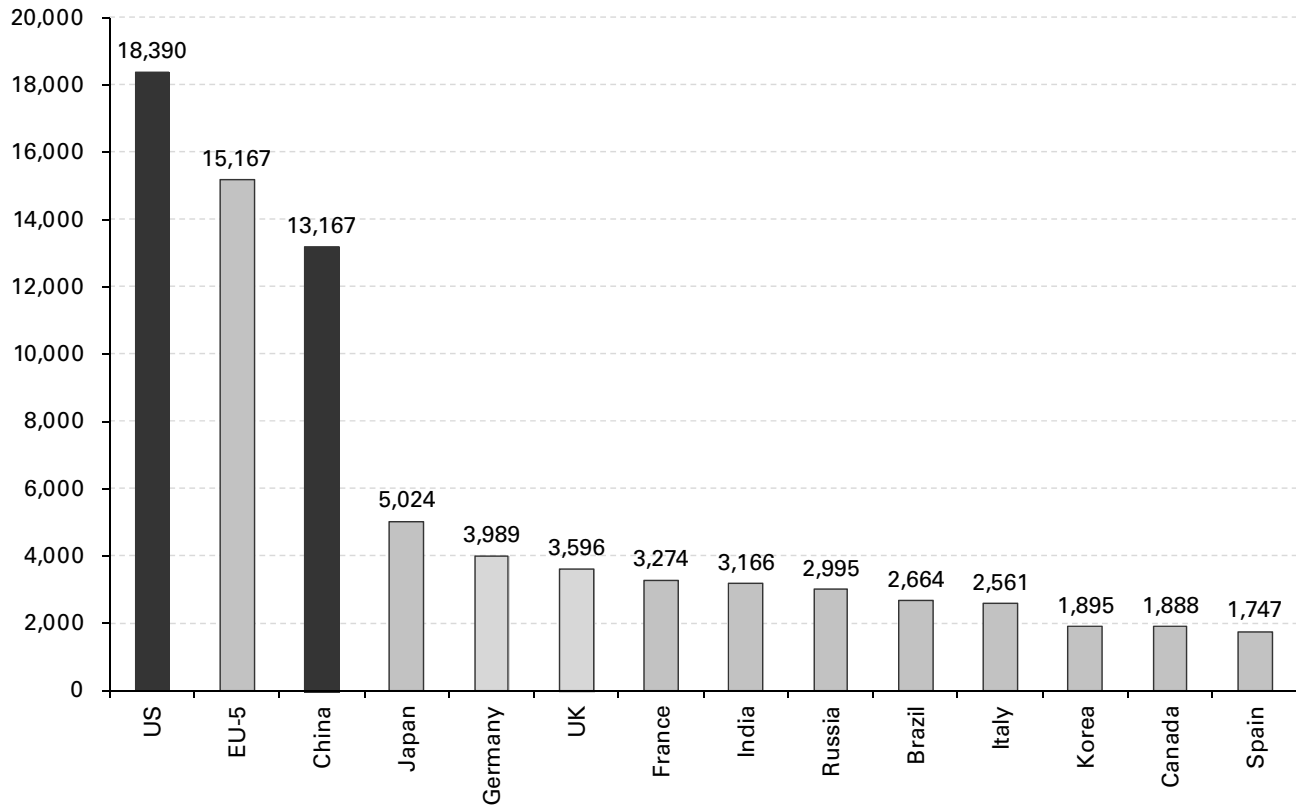
It is our belief that China will open its financial markets gradually and with great care, well after natural demand has materialized (the index futures are an excellent example of this). Although this measured, conservative approach is understandable, finance thrives on innovation and therefore it would not surprise us if other regional centres found profitable businesses in advanced financial products that satisfied client demand but were not yet available in China's domestic markets.

For instance, SIMEX (now the SGX) started Nikkei 225 futures two years before they started trading in Japan; in Hong Kong, the China A-share ETF – iShares FTSE/Xinhua A50 China Index (2823 HK) allows indirect access to the A-share market for foreign investors without requiring QFII status. In this sense, an offshore centre such as in Hong Kong could function as a financial airlock, where innovations could be tried and implemented in a controlled way, before allowing more widespread use in the mainland markets.

# Appendix 1: BRICs GDP projections

**Exhibit 76: China will dominate in 2020**  
**2020E GDP projections (US\$bn)**

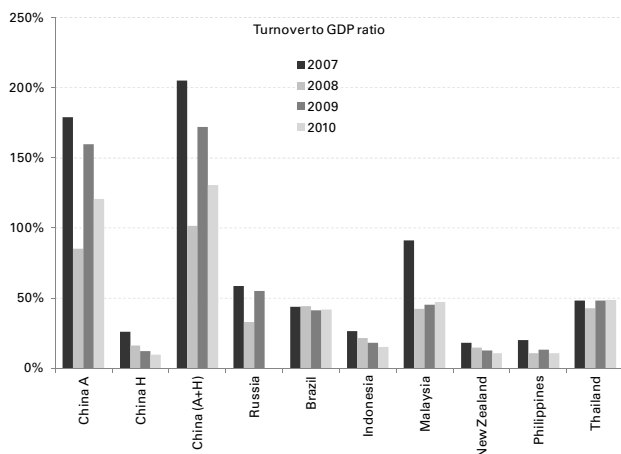
GDP (2020E) US\$ Bn  
 ( Base Year - 2007)



Source: GS BRIC Model Projections, GS Global ECS Research

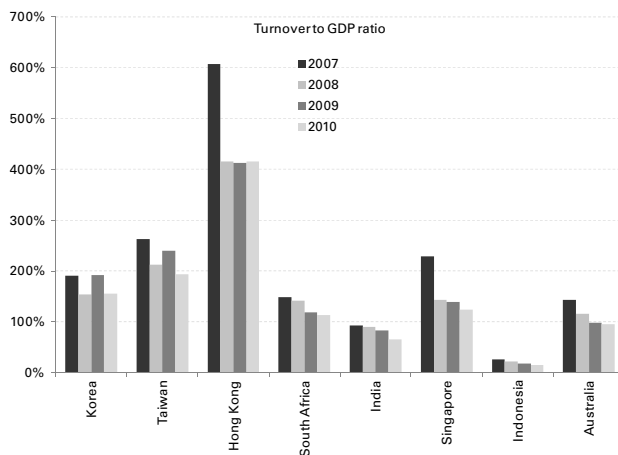
## Appendix 2: Turnover to GDP ratios

**Exhibit 77: Turnover to GDP ratios have been stable since 2007 for ASEAN and other EM's such as Russia / Brazil**



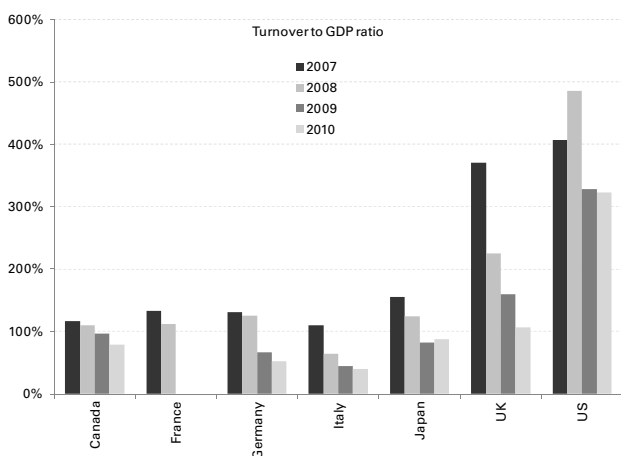
Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

**Exhibit 78: With exception of HK, even for larger EMs and Asian DMs, turnover to GDP looked fairly stable**



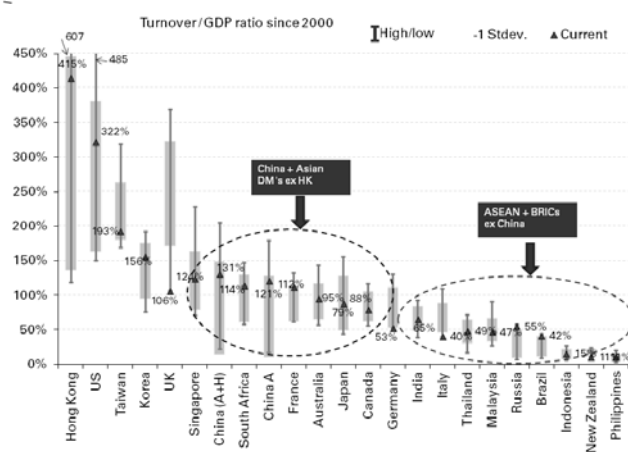
Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

**Exhibit 79: Among G7, US and UK have higher turnover to GDP ratios historically**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

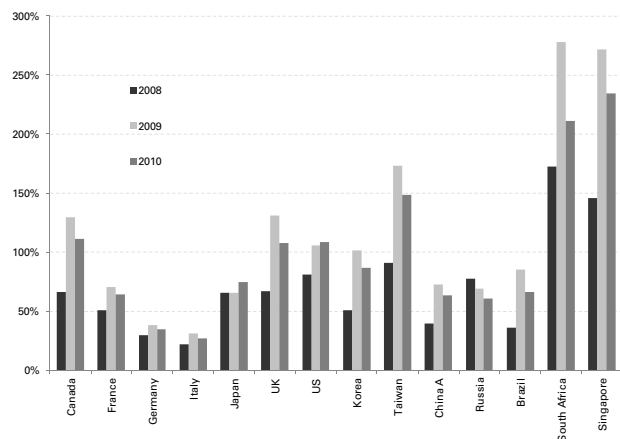
**Exhibit 80: Among G7 and Asian markets, China lies in the middle, with ASEAN & other BRICs at one end and US / UK at the other.**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

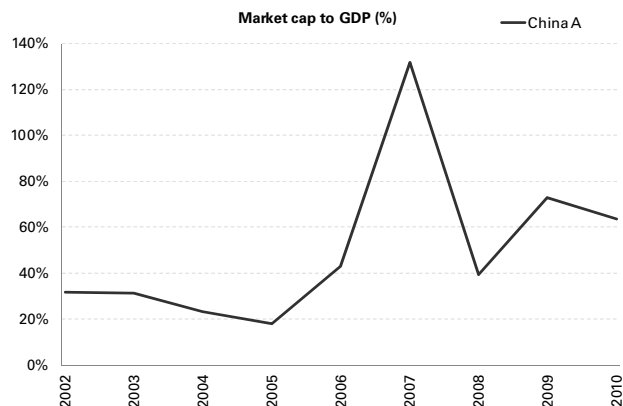
## Appendix 3: Market Cap to GDP ratios

**Exhibit 81: Market cap to GDP ratios for G7 and large EMs (2008 – 2010E)**



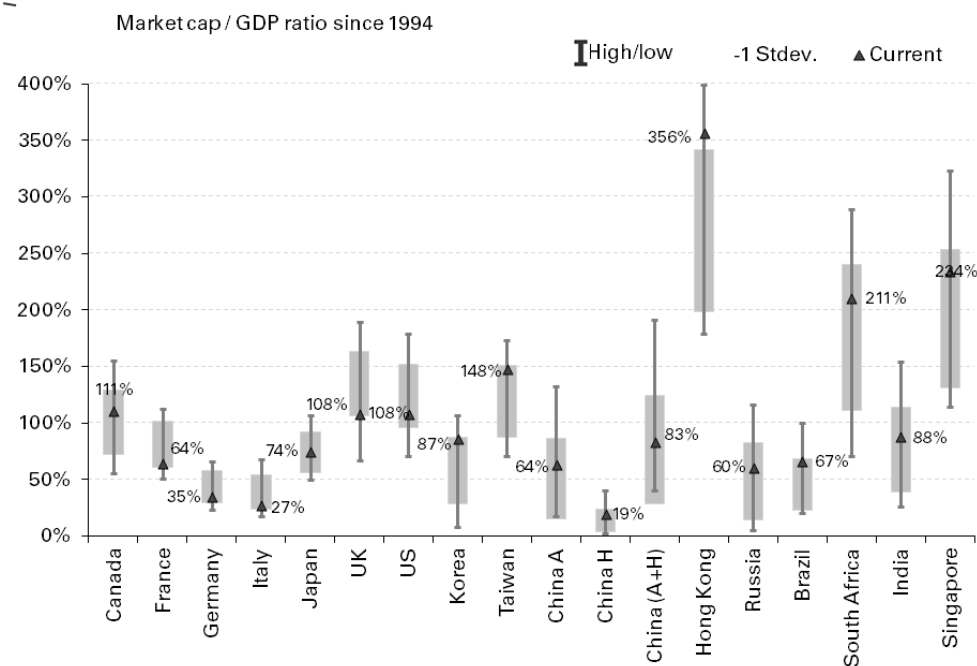
Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

**Exhibit 82: Market cap to GDP ratio for China A share market**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

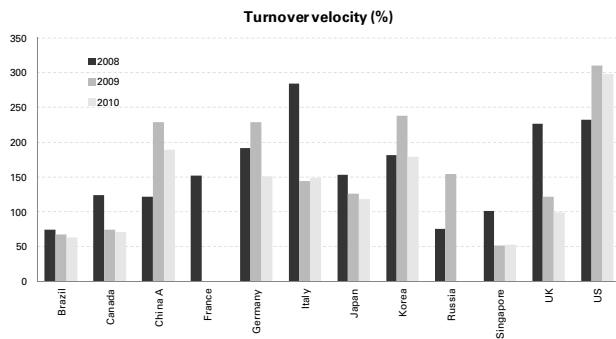
**Exhibit 83: Market cap to GDP ratios since 1994**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

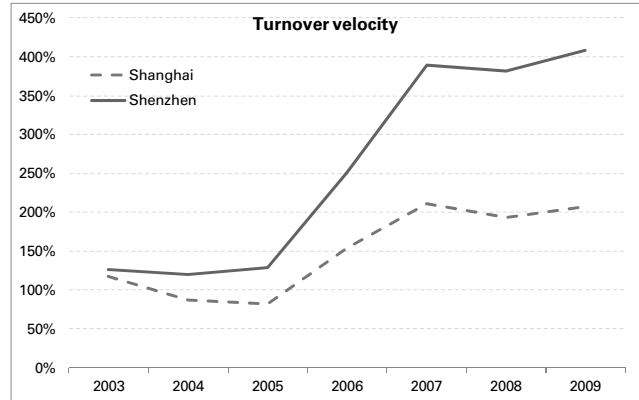
# Appendix 4: Turnover velocities

**Exhibit 84: Turnover ratios for G7 and large EMs (2008 – 2010E)**



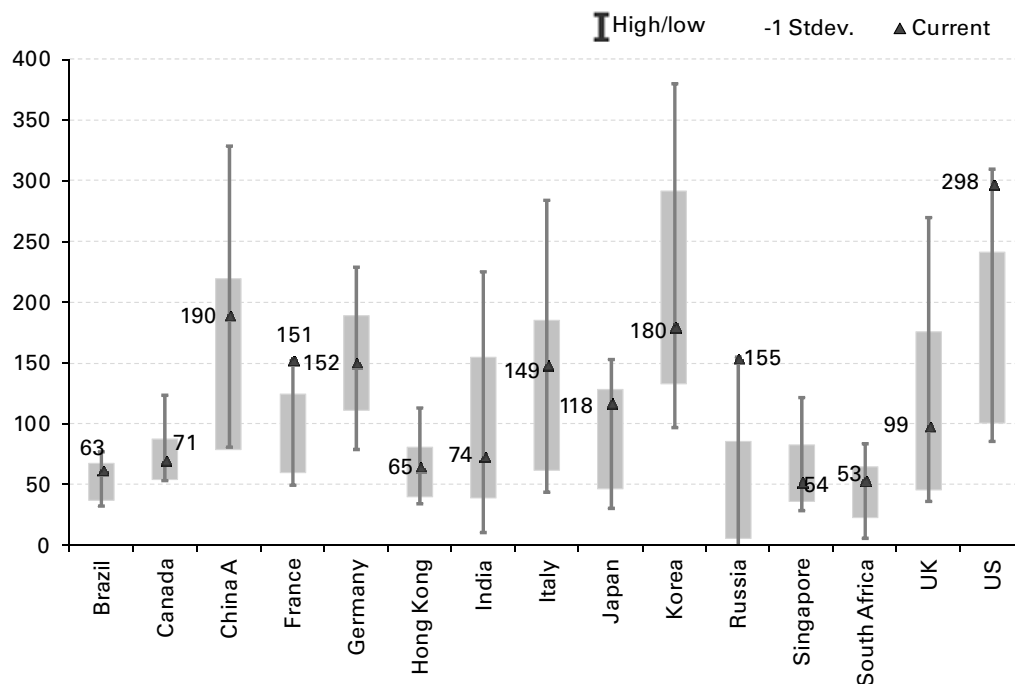
Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

**Exhibit 85: Shanghai and Shenzhen turnover velocities**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

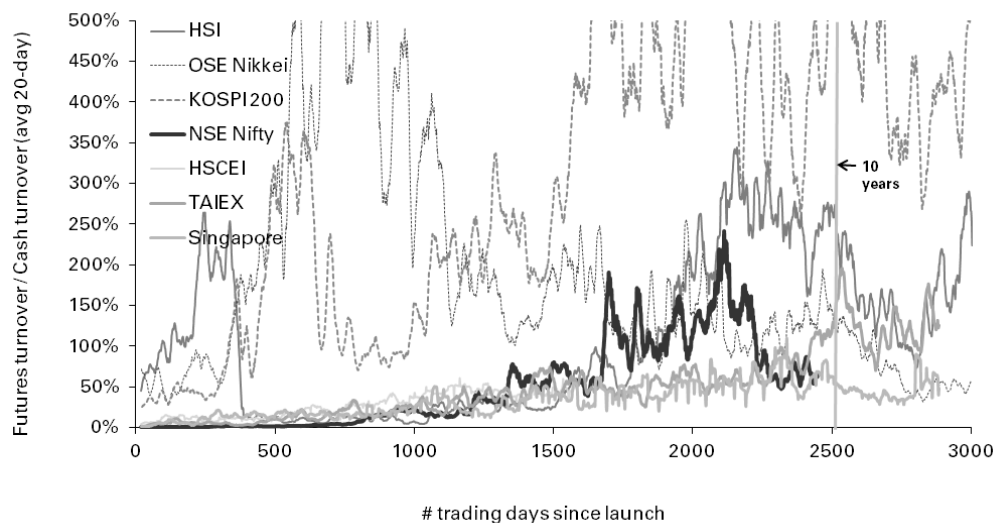
**Exhibit 86: Turnover velocities since 1995**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

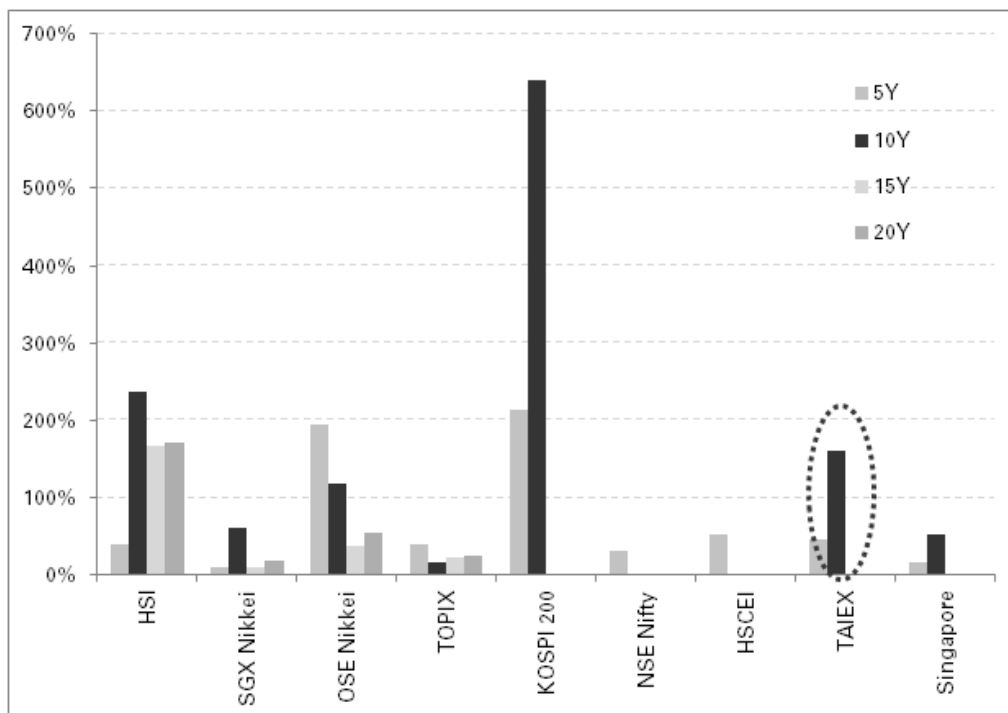
## Appendix 5: Futures to cash turnover ratios

**Exhibit 87: Futures to cash turnover ratios since launch**



Source: Bloomberg, NSE, HKEx, Gs Global ECS Research

**Exhibit 88: Futures to cash turnover ratios since launch**



Source: Bloomberg, IMF, World Bank, WFE, GS Global ECS Research

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