EPFR

Informa Financial Intelligence

China: should it be its own asset class?

Our latest technical paper written by Informa Financial Intelligence Manager of Quantitative Strategies, Steven Shen, discusses China as an asset class from the perspective of EPFR's China Flows and Positioning datasets.

Contents

Summary

Foreign access to Chinese equity markets has grown by leaps and bounds over the past decade. Much of the recent narrative has centered on the domestically listed A shares whose inclusion factor in several widely followed and traded indexes increased significantly during 2019.

But A shares, whose valuations are heavily influenced by Chinese retail investors, are only one of nine major Chinese share classes that portfolio managers use to balance their exposure to China.

With China accounting for a growing share of emerging markets allocations, there has been an exponential growth in demand from investors and the financial industry for dependable sources of data upon which to base their decisions. EPFR's new datasets, China Share Class Allocations (CSCA) and CSCA Flows, meet this need.

With the new datasets, it is possible to analyze a markets whose multiple share classes are complimentary but frequently not correlated, whose primary driver on the domestic front are retail investors and whose issuers have different concepts of shareholder rights than is the case in Developed European and US markets. The data can also fuel quantitative models and strategies.

Opening windows on China for more than two decades

GEM and Asia ex-Japan Regional Fund Country Allocations (1996)

Provides investors with a window into diversified fund manager sentiment towards China, both through changes in China's average weighting and its weighting relative to other markets (see p4).

China Country Fund Flows (2000)

As-reported tracking of flows into and out of dedicated China Equity Funds provides a blunt proxy for investor sentiment and appetite for exposure to China (See p4).

Equity & Bond Fund flows for China (2000 & 2004)

These hybrid data sets provide a snapshot of the money that EPFR-tracked Equity and Bond Funds are committing to or redeeming from Chinese markets. The data is correlated to traditional balance of payment trends but precedes the B-o-P data by several weeks.

China Equity Fund Sector Allocations (2006)

Captures on a monthly basis the allocations between sectors in the average China Equity Fund portfolio.

China Stock Level Flows (2010)

Provides daily, weekly and monthly insights into the flows that individual Chinese stocks are attracting or losing.

China Share Class Allocations (2020)

Tracks the relative allocation of EPFR-tracked fund managers between the nine major Chinese share classes (see table below and p5)

CSCA Flows (2020)

Uses the allocations data to estimate flows into and out of the major Chine share classes.

Category	Country of incorporation	Country of Listing	Trading Currency
A Share	PRC	China	CNY
B Share	PRC	China	USD (Shanghai) HKD (Shenzen)
H Share	PRC	HK SAR	HKD
Red Chip	Non-PRC	HK SAR	HKD
P Chip	Non-PRC	HK SAR	HKD
S Chip	Non-PRC	Singapore	SGD
N Share	Non-PRC	USA	USD
T Chip	PRC	Taiwan	TWD
ADR	PRC	USA	USD

China Country Fund Flow Dataset

- ▶ 7 Fund Groups
- ▶ 02/29/1996 History
- ▶ Daily, Weekly & Monthly Frequency
- ▶ 6,789 (5,369/1,420) Mutual Funds & ETFs
- ▶ $5.52 Trillion Total Fund Assets
- ▶ 1 & 16 days Release Lag

China Country Positioning Dataset

- ▶ 6 Fund Groups
- ▶ 12/31/1995 History
- ▶ Monthly Frequency
- ▶ 1,191 (826/365) Mutual Funds & ETFs
- ▶ $18.18 Billion Total Fund Assets
- ▶ 23 days Release Lag

No. and AUM of funds reporting to EPFR that track selected benchmarks

Selected Benchmark	Total # of Funds	AuM Mil USD
MSCI ACWI	607	$ 590,599.72
MSCI ACWI ex USA	146	$ 408,716.98
MSCI Emerging Markets	612	$ 524,115.45
MSCI Emerging Markets SmallCap	31	$ 4,126.00
MSCI AC Asia ex Japan	128	$ 74,822.45
MSCI AC Asia Pacific ex Japan	73	$ 40,870.57
MSCI Asia ex Japan	9	$ 1,721.38
MSCI EM Asia	17	$ 10,163.48
MSCI Golden Dragon	32	$ 10,842.98
MSCI Zhong Hua	4	$ 1,733.31
MSCI China	62	$ 32,256.04
MSCI China A Share	25	$ 6,350.05
MSCI China 10/40	20	$ 9,351.75
MSCI China A Onshore	10	$ 6,056.01
MSCI China A Inclusion	6	$ 176.83
CSI 100	5	$ 110.36
CSI 300	44	$ 25,245.29
CSI 500	17	$ 8,139.47
SSE 50	9	$ 6,042.48
FTSE China 50	8	$ 3,736.13
FTSE China A50	12	$ 4,191.64
Hang Seng	7	$ 16,227.62
Hang Seng China Enterprise	17	$ 4,744.56

FACTS.
The new...

FinancialIntelligence
Informa

China Share Class Positioning/Flow Dataset

- ▶ 7 Fund Groups
- ▶ 01/31/2014 History
- ▶ Monthly Frequency
- ▶ 873 (465/408)Mutual Funds & ETFs
- ▶ $1.77 Trillion Total Fund Assets
- ▶ 35 days Release Lag

China Stock Dataset

- ▶ 2924 Distinct ISINs
- ▶ 01/31/2010 History
- ▶ Daily & Monthly Frequency
- ▶ 9 Filters (Agg/Act/Psv/ETF/MF)
- ▶ 13 Predictive Factors derived from Holdings
- ▶ 1 & 26 days Release Lag

As of May 2020, all China Share Classes account for roughly 4.77% of the MSCI ACWI index.

USA ranked first with a 56.87% share of the total index, Japan ranked second with 7.20% and China ranked third ahead of the UK with 4%.

China's share of the average EPFR-tracked GEM Equity Funds has risen from 6.7% in 1Q07 to 32.18% in 3Q20. Over the same period, China's average GRM Bond Fund weighting has climbed from 0.33% to 4.47%.
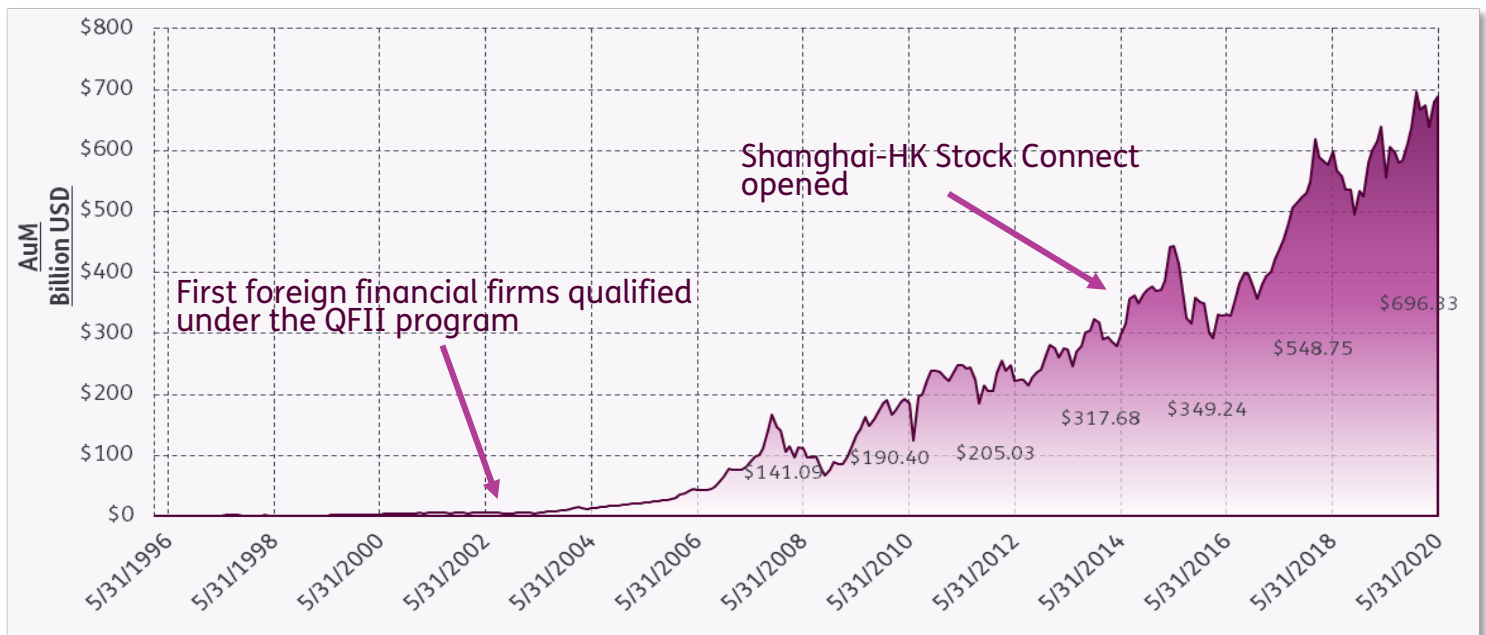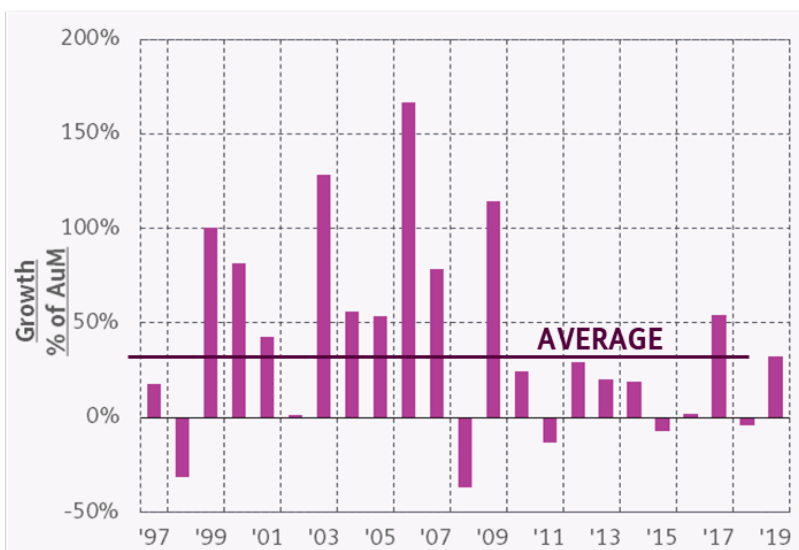
Still room to grow...

Total AuM Allocated to China Equity

First foreign financial firms qualified under the QFII program

Shanghai-HK Stock Connect opened

$141.09 $190.40 $205.03 $317.68 $349.24 $548.75 $696.33

Annual Growth

AVERAGE

Before MSCI's inclusion of A shares in 2017, the average annual growth of EPFR-tracked fund AuM invested into China companies was an astonishing 42.9%.
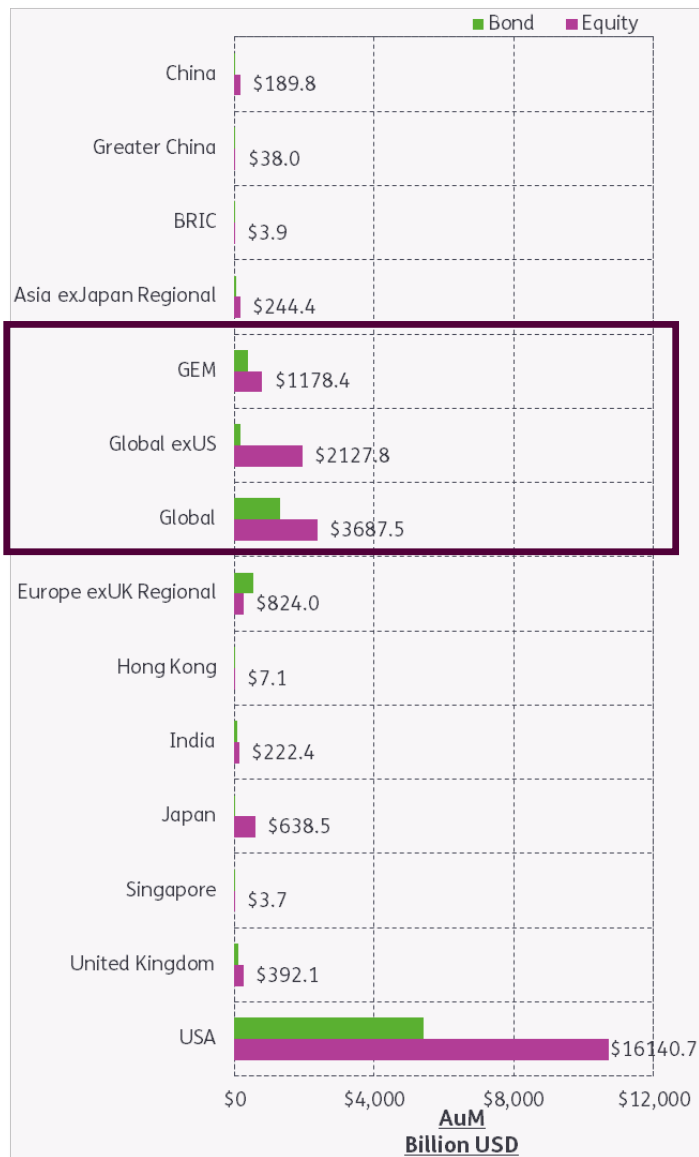
With China one of the first to major economies to relax pandemic containment measures, and the domestic market slated to open even more to foreign investors, we expect the growth in Chinese holdings to continue – and even accelerate.

China's share of the average GEM Equity and Bond Fund has reached the point where a GEM ex-China fund group seems likely.
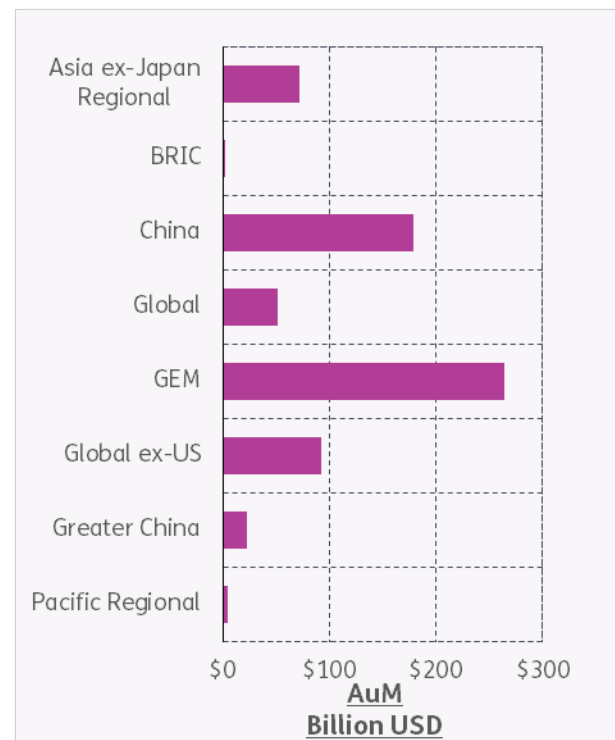
Still room to grow…

Fund Assets Comparison

Legend: ■ Bond ■ Equity

Category	AuM (Billion USD)
China	$189.8
Greater China	$38.0
BRIC	$3.9
Asia exJapan Regional	$244.4
GEM	$1178.4
Global exUS	$2127.8
Global	$3687.5
Europe exUK Regional	$824.0
Hong Kong	$7.1
India	$222.4
Japan	$638.5
Singapore	$3.7
United Kingdom	$392.1
USA	$16140.7

AuM Billion USD

Allocated AuM by Geographic Focus

(Categories: Asia ex-Japan Regional, BRIC, China, Global, GEM, Global ex-US, Greater China, Pacific Regional)

AuM Billion USD

There are three types of funds that can invest in China: China dedicated funds, regional funds and funds with global mandates. Funds with global mandates are already the bigger fish in the pond – GEM, Global ex-US & Global funds assets sum up to $5.1 trillion in equity, and $1.9 trillion in bonds.
 A tiny modest in the allocation to China by any of these groups will lead to a significant increase to the value of Chinese assets in their portfolios. For instance, 0.1% of total Global Equity Fund AUM equals $47 billion.
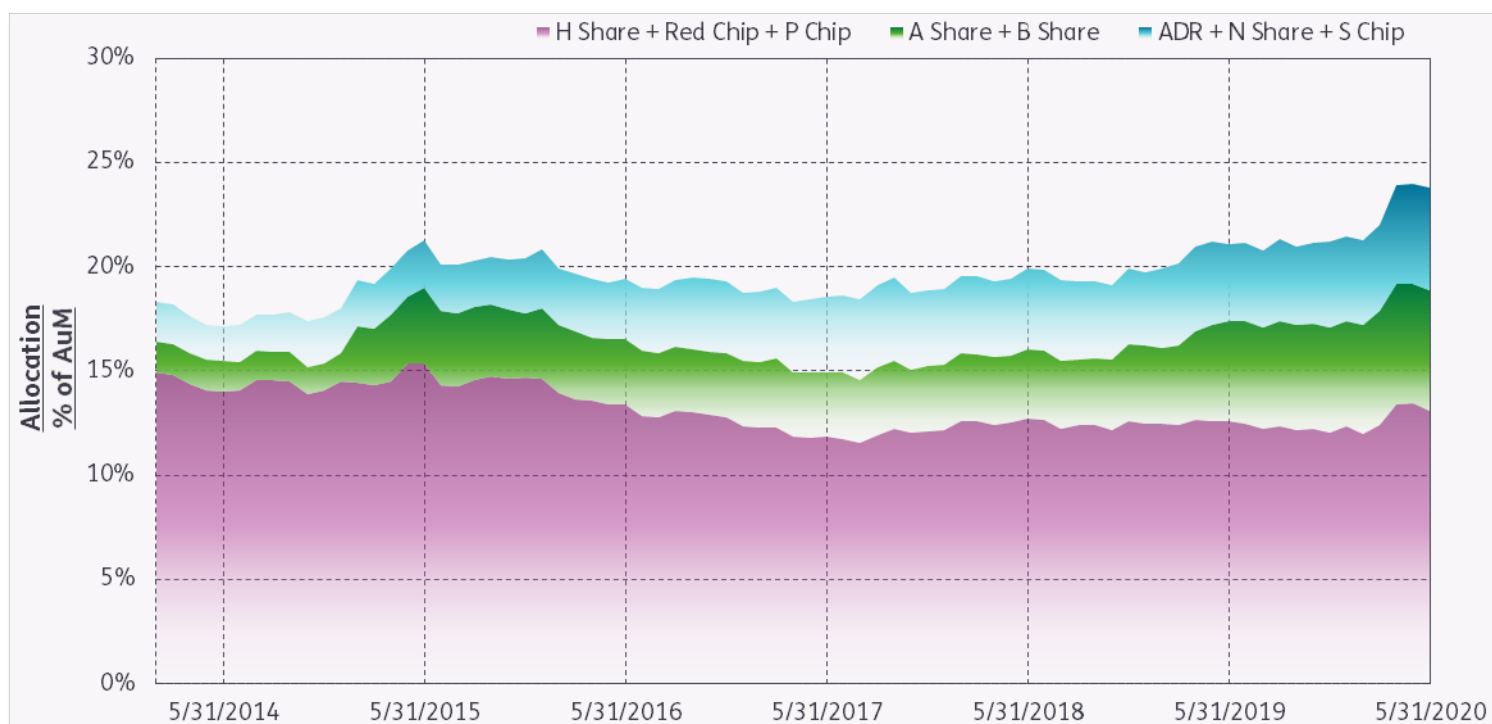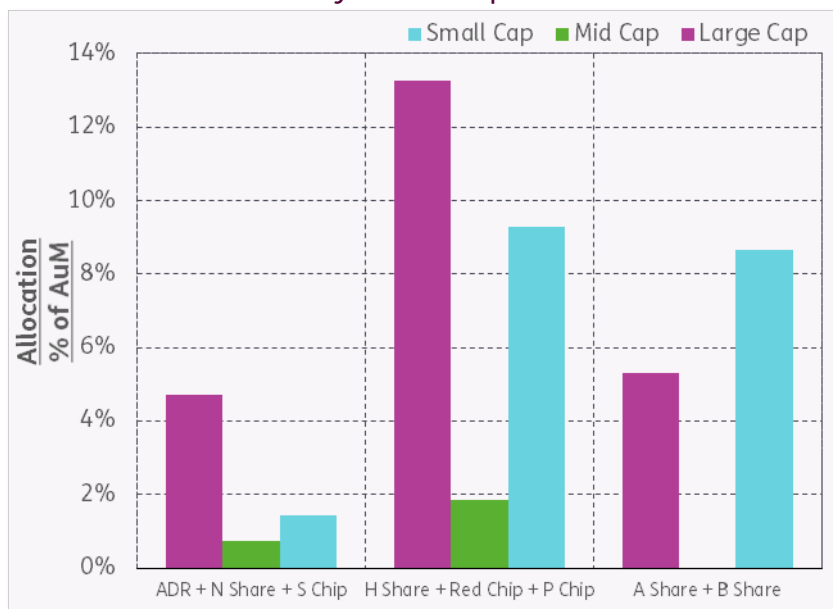
Complementary Markets

China Share Class Allocation

Legend: H Share + Red Chip + P Chip | A Share + B Share | ADR + N Share + S Chip

Y-axis: Allocation % of AuM (0% to 30%)
X-axis: 5/31/2014, 5/31/2015, 5/31/2016, 5/31/2017, 5/31/2018, 5/31/2019, 5/31/2020

Share Class Allocation by Market Cap Funds

Legend: Small Cap | Mid Cap | Large Cap

Y-axis: Allocation % of AuM (0% to 14%)
X-axis: ADR + N Share + S Chip | H Share + Red Chip + P Chip | A Share + B Share

China's onshore and offshore markets complement-- but are not always correlated with-- each other.

Dual or triple listing companies offers unique trading/hedging/financing opportunities (see following page).
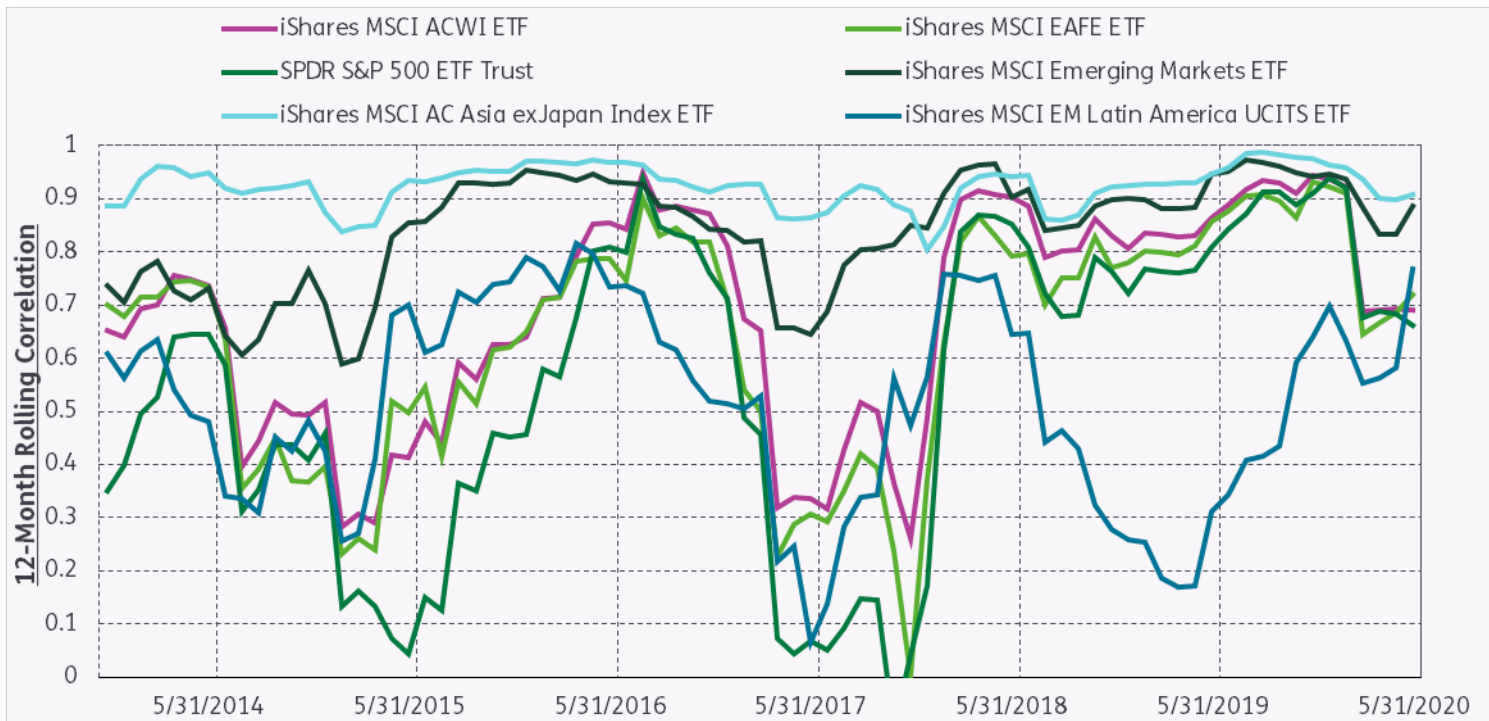
Large Cap companies are more likely to list in offshore markets.

For onshore equity markets, it is small cap plays (market capitalization of under $2 billion) that dominate.

Low correlation leads to diversification & opportunity

MSCI China 12-month rolling Correlation

Legend:
- iShares MSCI ACWI ETF
- iShares MSCI EAFE ETF
- SPDR S&P 500 ETF Trust
- iShares MSCI Emerging Markets ETF
- iShares MSCI AC Asia exJapan Index ETF
- iShares MSCI EM Latin America UCITS ETF

Y-axis: 12-Month Rolling Correlation (0 to 1)
X-axis: 5/31/2014, 5/31/2015, 5/31/2016, 5/31/2017, 5/31/2018, 5/31/2019, 5/31/2020

Share Class Allocation Correlation with Major Benchmarks

|	Correlation	MSCI ACWI	MSCI GEM	MSCI China	FTSE China 50	FTSE China A-H 50	Hang Seng China Enterprises	CSI 300	FTSE China A50	MSCI China A Incl.
A+B	Aggregate	-5.36%	-7.93%	-6.78%	-12.54%	-14.63%	-20.22%	-16.63%	-17.55%	2.57%
	Active	-2.81%	-8.06%	-7.35%	-11.85%	-12.71%	-12.04%	-11.14%	-9.67%	-0.30%
	Passive	-6.48%	-7.40%	-5.05%	-11.30%	-15.68%	-23.04%	-17.24%	-19.08%	5.19%
H+Red Chip+P	Aggregate	-10.08%	-15.88%	-9.20%	-5.20%	0.19%	-3.72%	9.72%	8.06%	-0.98%
	Active	-9.76%	-22.87%	-14.68%	-14.26%	-2.61%	-13.99%	-3.06%	-1.42%	-2.21%
	Passive	-6.58%	-8.36%	-3.66%	0.68%	2.36%	4.09%	13.88%	12.45%	3.94%
ADR+N+S	Aggregate	5.68%	3.97%	5.91%	0.30%	-1.22%	-1.16%	-7.03%	-5.14%	8.47%
	Active	6.50%	4.32%	5.39%	0.16%	3.82%	-1.04%	-7.48%	-5.25%	11.57%
	Passive	4.70%	3.53%	7.08%	1.25%	-5.32%	0.29%	-4.31%	-2.72%	4.81%

While it's not perfectly uncorrelated, we observe some interesting seasonality between MSCI China tracking ETF and other major benchmark tracking ETF performances. MSCI AC Asia ex-Japan is an exception to the seasonality trend, with the correlation hovering around 0.9.
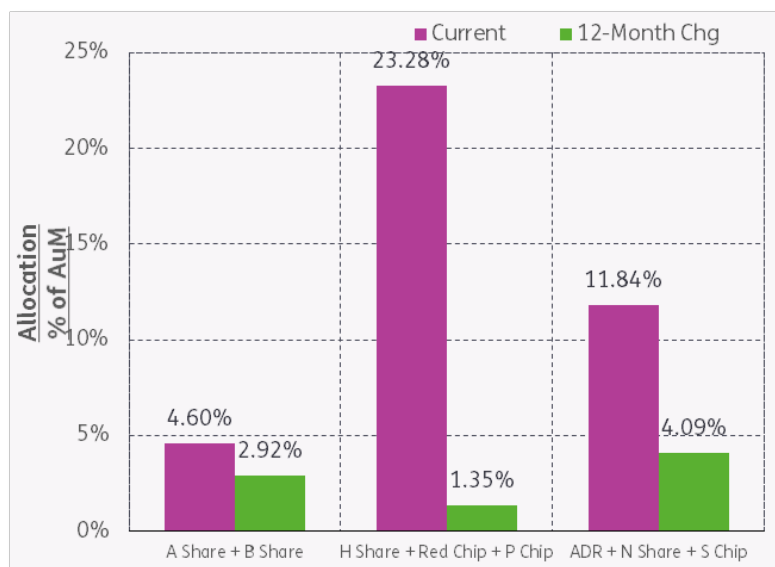
Benchmark A Share Inclusion

Benchmark Share Class Allocation
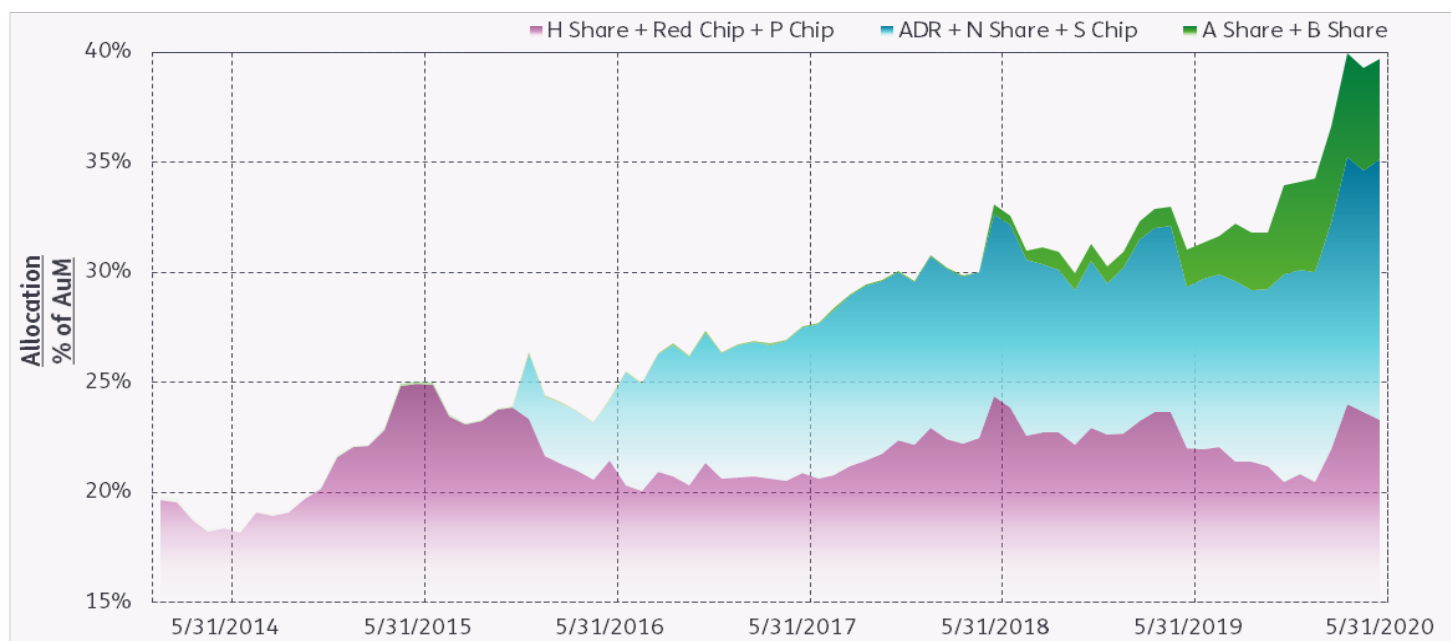
Market Cap Funds Share Class Allocation

In the past 12 months, iShares MSCI Emerging Markets ETF has increased its allocation to China by 2.92% for domestically listed shares, 1.35% for HK listed shares and 4.09% to foreign listed shares respectively.

China's gain with a given benchmark is another country or countries loss. Brazil has seen its average GEM Equity und allocation shrink to a third of its level a decade ago
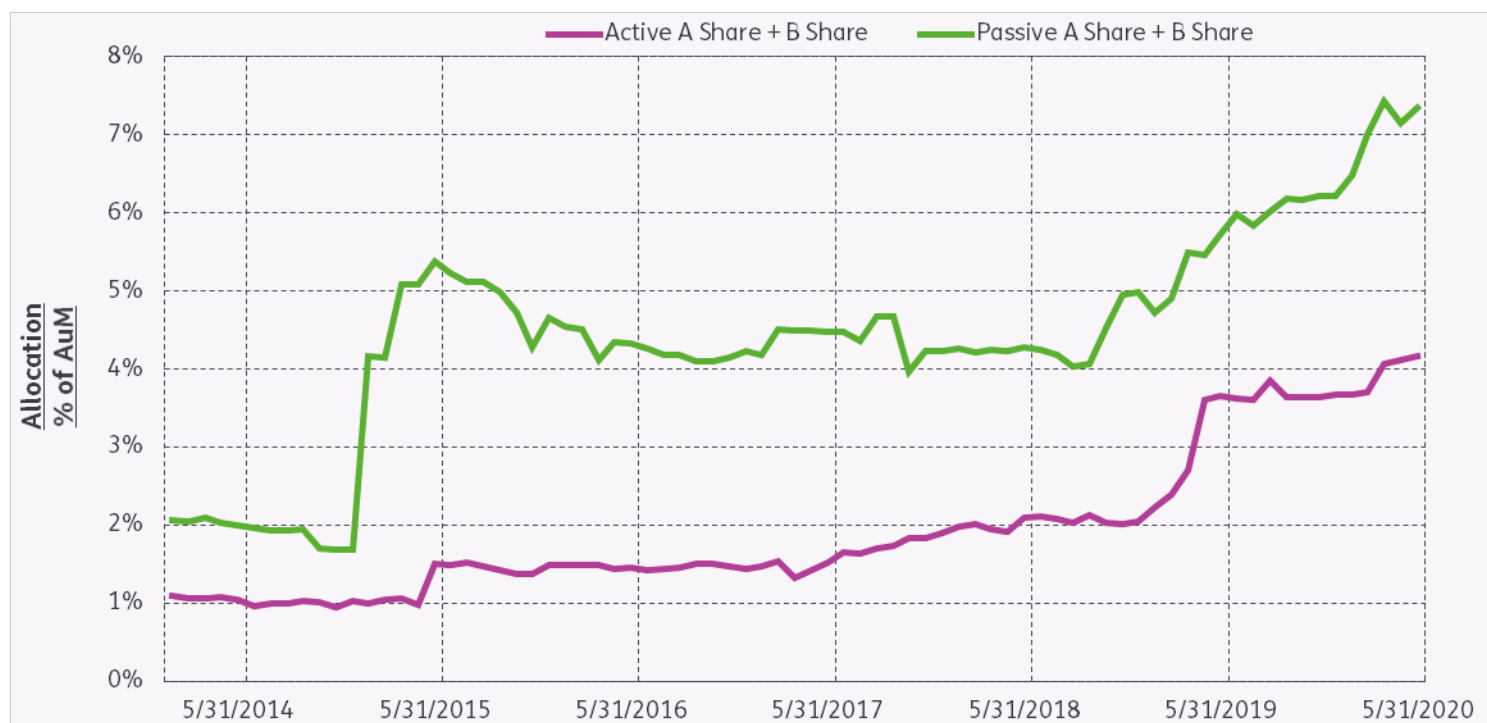
The inclusion process is playing out during a period of global economic stress and deteriorating Sino-US relations, which complicates the job for managers of tracking the index.
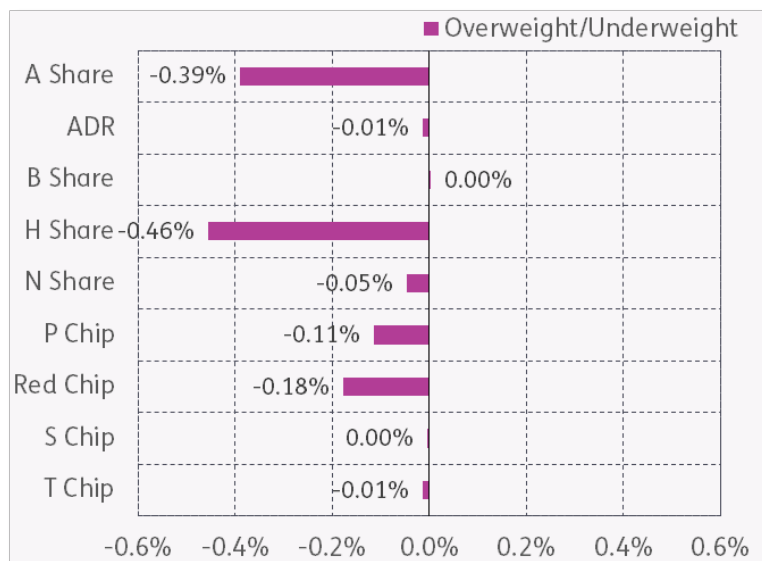
Benchmark A Share Inclusion

Active vs Passive Funds Allocation to Mainland Listed Share Classes

Legend: Active A Share + B Share; Passive A Share + B Share

Active ACWI Funds Overweight/Underweight

|	Overweight/Underweight
A Share	-0.39%
ADR	-0.01%
B Share	0.00%
H Share	-0.46%
N Share	-0.05%
P Chip	-0.11%
Red Chip	-0.18%
S Chip	0.00%
T Chip	-0.01%

Even with the pressure from rebalanced indexes, active managers remain several steps behind when it comes to increasing their exposure to domestically listed Chinese share classes. Active managers hesitated for several weeks after official data suggested that the COVID-19 pandemic had released its grip on China.
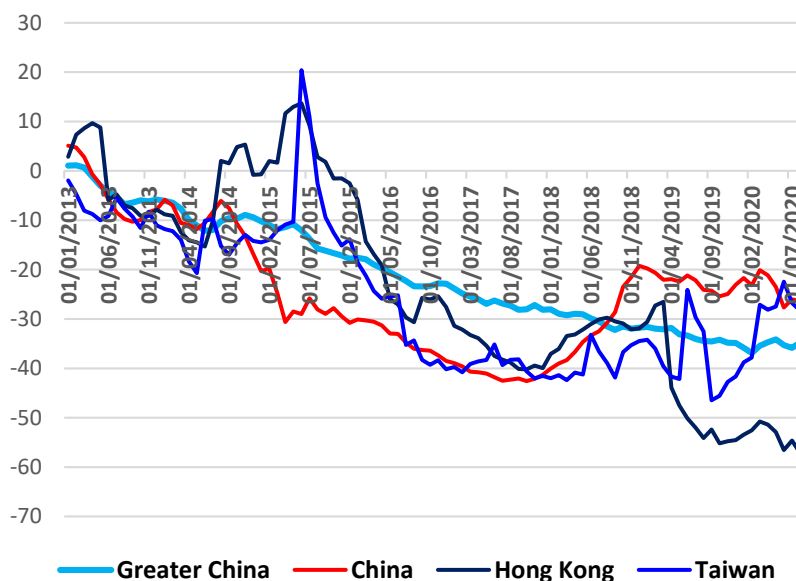
H Shares: a convergence play?

Active vs Passive Funds Allocation to HK listed Share Classes

Active H Share + Red Chip + P Chip — Passive H Share + Red Chip + P Chip
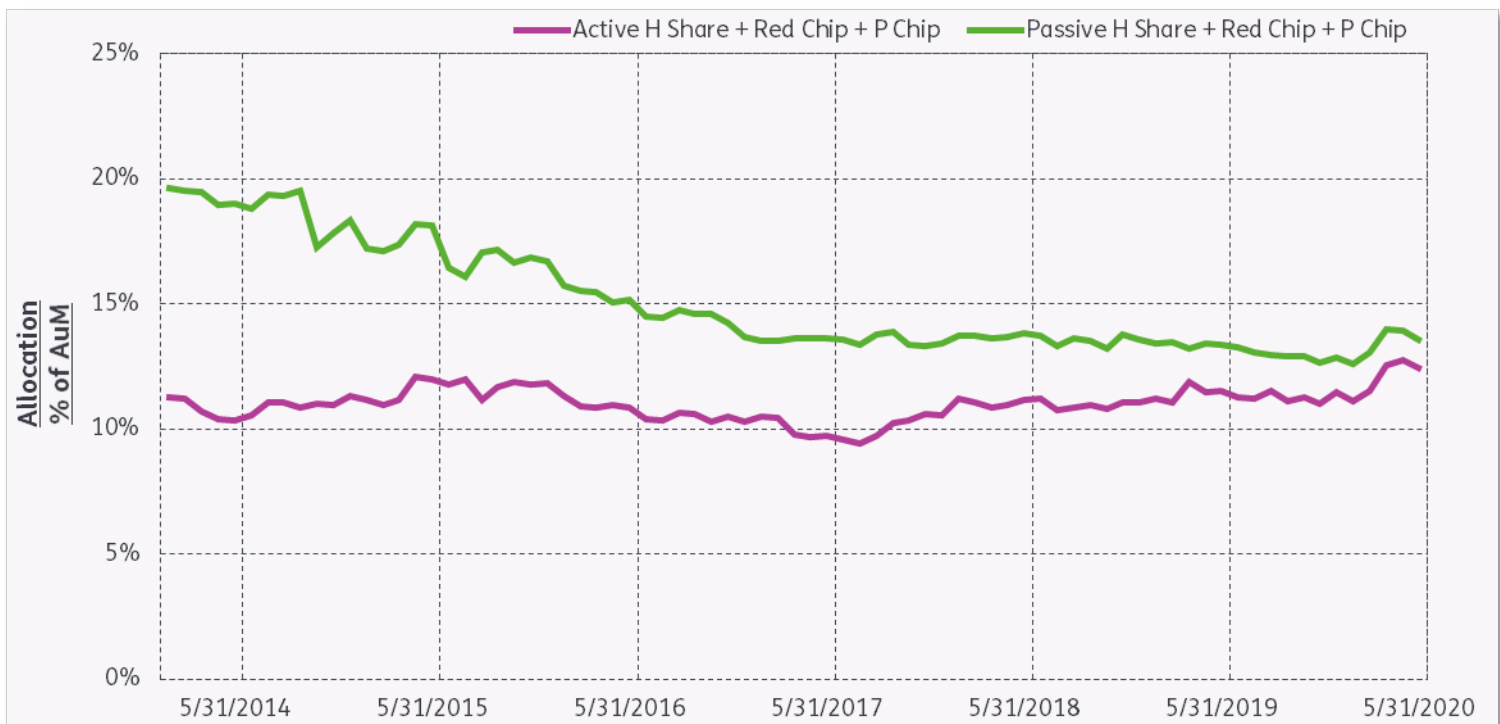
Cumulative flows, in % of AUM terms, for China, Greater China, HK and Taiwan Equity Funds, 2013-YTD

Greater China — China — Hong Kong — Taiwan

Active and passive manager allocations to Hong Kong listed stocks are converging – mainly due to index-driven adjustments by passive funds. However, the adjustments both groups have made during the current pandemic have been largely in step.
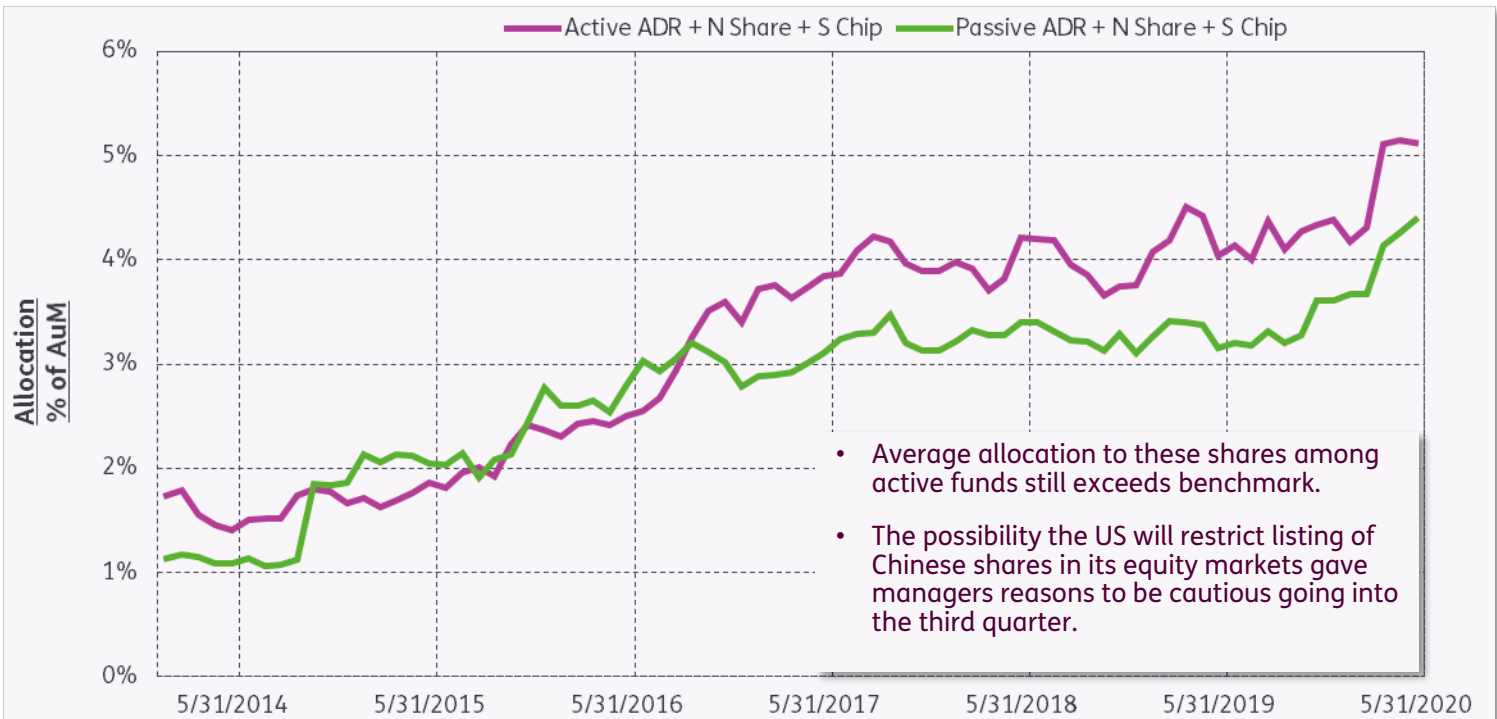
Investor flows to dedicated Hong Kong Equity Funds showing a markedly stronger reaction to the unrest in Hong Kong that led up to the imposition of a new national security law by the Chinese government.

Offshore still the right shore for active managers

Active vs Passive Funds Allocation to Foreign Listed Share Classes

Legend: Active ADR + N Share + S Chip — Passive ADR + N Share + S Chip

- Average allocation to these shares among active funds still exceeds benchmark.
- The possibility the US will restrict listing of Chinese shares in its equity markets gave managers reasons to be cautious going into the third quarter.

China Share Class Flow

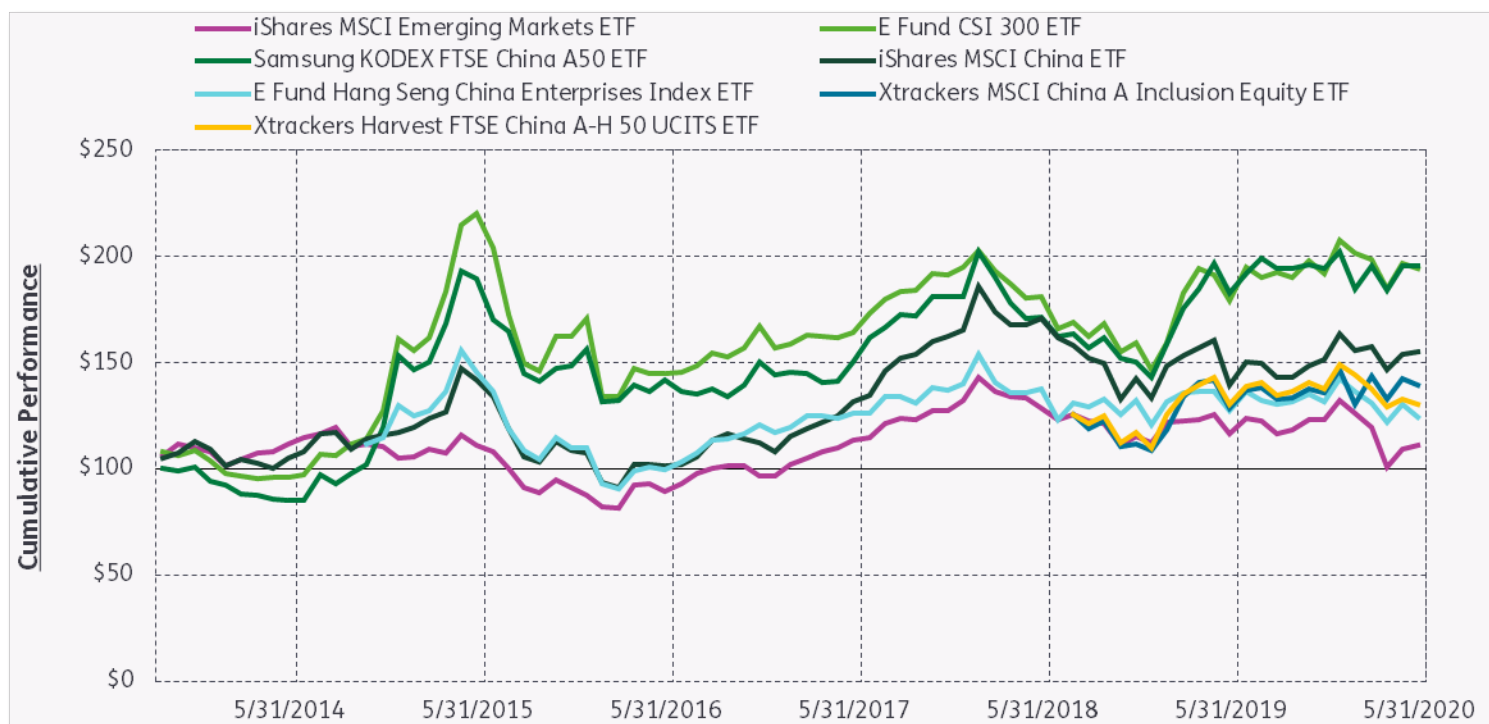
Legend: A Share + B Share — H Share + Red Chip + P Chip — ADR + N Share + S Chip

Underexplored Outperformers
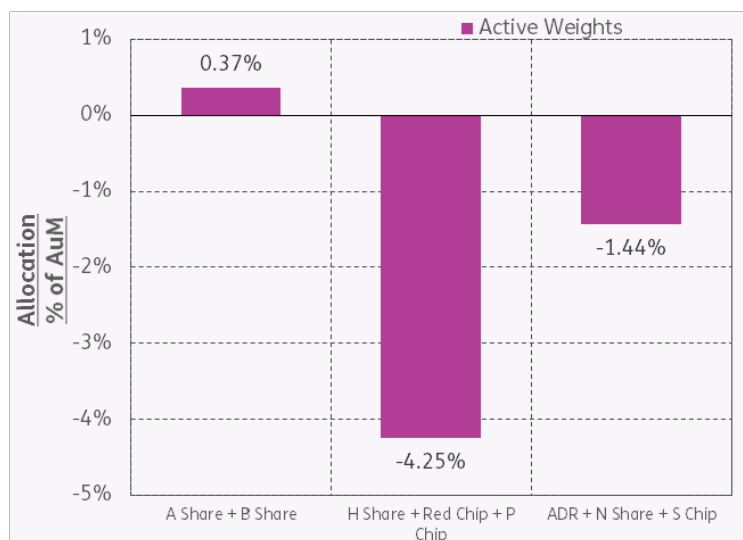
Benchmark Performance
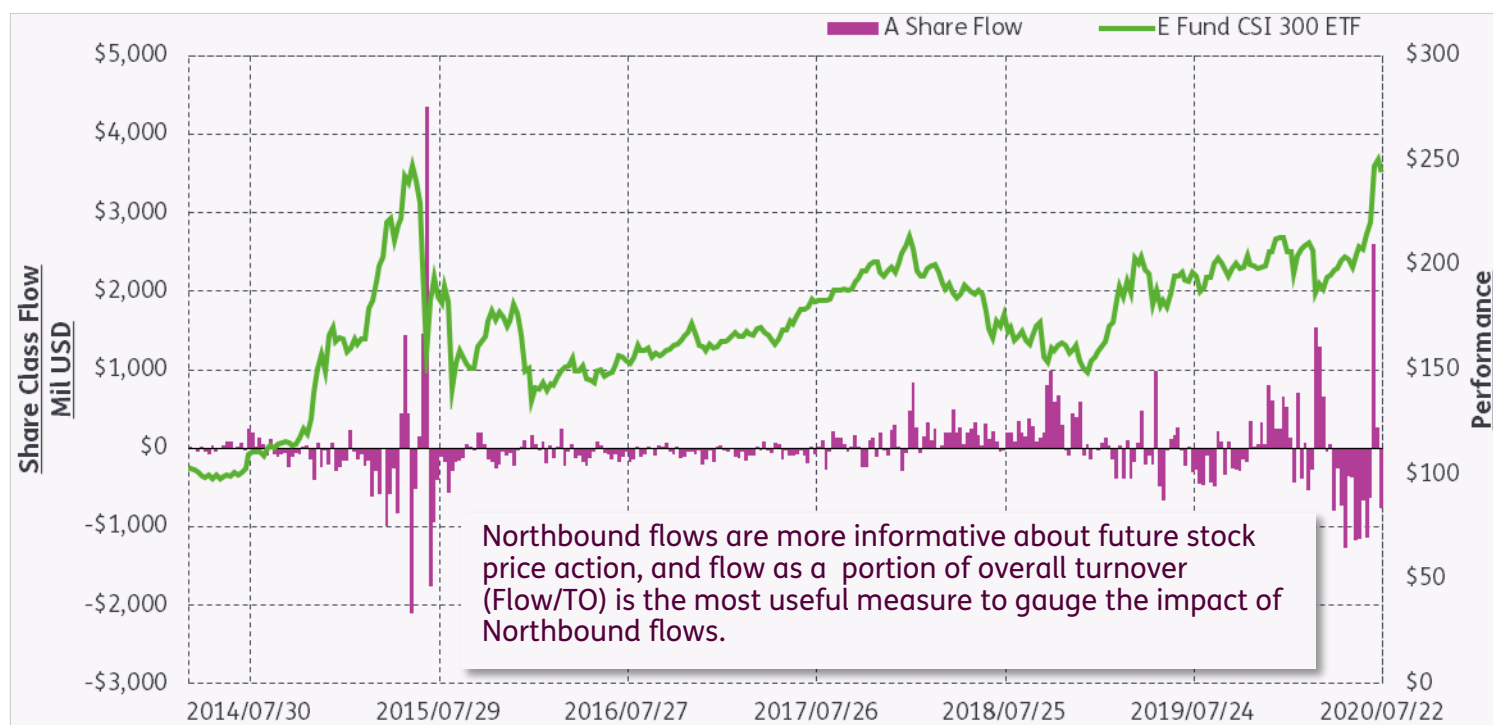

Active GEM Funds Overweight/Underweight

Compared to Global Emerging Markets ETFs, active managers are barely overweight Chinese domestically listed stocks and underweight HK listed and foreign listed (see chart on left). Even with the neutral/underweight from active managers, ETFs tracking CSI 300, FTSE China A50, FTSE China A-H 50, MSCI China, MSCI China A Inclusion, Hang Seng Enterprises were still able to outperform MSCI Emerging Markets ETF during the corresponding period where the data is available.

Going North or South

China Share Class Flows (North Bound)

A Share Flow   **E Fund CSI 300 ETF**

Northbound flows are more informative about future stock price action, and flow as a portion of overall turnover (Flow/TO) is the most useful measure to gauge the impact of Northbound flows.

(Chart: Share Class Flow Mil USD vs Performance, x-axis 2014/07/30 to 2020/07/22)

HK Stock Connect

HKEX 香港交易所

TRADING ACTIVITY	Updated: 26 Aug 2020 16:10 HKT

SHANGHAI CONNECT	SHENZHEN CONNECT

Buy + Sell Turnover Today ■ Sell ■ Buy

SHANGHAI CONNECT		SHENZHEN CONNECT	
Northbound RMB44,494M	22,133M | 22,361M	**Northbound** RMB61,575M	31,490M | 30,085M
Southbound HK$12,100M	5,646M | 6,454M	**Southbound** HK$11,455M	5,482M | 5,973M

Daily Quota Balance

Northbound RMB50,873M	**97%**	**Northbound** RMB52,423M	**100%**

SSE Composite Index 3,329.74 -43.84 -1.30%	**SZSE Component Index** 13,428.40 -241.01 -1.76%
Updated: 26 Aug 2020 15:59 HKT	Updated: 26 Aug 2020 15:59 HKT

Quant Strategy Backtest

China Dataset Offering Granularity

China Country Flow/Positioning Dataset — Macro Level

China Share Class Positioning Dataset — Macro Level

China Stock Dataset — Stock Level

Year	Benchmark Equal Weight	Share Class 1st Quintile	Share Class 5th Quintile	Spread	FloAlpha 1st Quintile	FloAlpha 5th Quintile	Spread	PE 1st Quintile	PE 5th Quintile	Spread
'15	18.9%	-3.0%	-6.3%	3.3%	0.6%	-5.7%	6.3%	1.1%	-2.0%	3.1%
'16	-14.9%	4.0%	-8.2%	12.2%	-3.4%	3.7%	-7.1%	10.0%	-4.5%	14.5%
'17	12.9%	-3.0%	-3.0%	0.1%	18.4%	-8.9%	27.4%	12.1%	-12.5%	24.6%
'18	-29.3%	24.8%	-6.6%	31.4%	1.8%	-4.7%	6.5%	7.1%	0.3%	6.8%
'19	32.0%	19.6%	12.8%	6.8%	10.3%	1.2%	9.1%	-9.1%	10.3%	-19.4%
'20	-5.6%	9.7%	-0.8%	10.5%	3.9%	-3.5%	7.4%	-5.7%	8.8%	-14.5%
TOTAL	0.6%	60.2%	-12.9%	73.1%	34.4%	-17.1%	51.4%	14.4%	-1.4%	15.8%
ANNUAL	0.1%	9.2%	-2.6%	10.8%	5.7%	-3.4%	8.1%	2.6%	-0.3%	2.8%
STDEV	7.2%	6.9%	2.9%	--	1.7%	1.5%	--	2.5%	2.3%	--

- The granularity of EPFR's data enables quantitative modelling from the stock level up to the macro level.
- Country level datasets can be utilized in a long/short country rotation model.
- Share Class Positioning data, when utilized as an Active v Passive factor in a proof-of-concept model, helped that model outperform an equally weighted benchmark by an annualized 10.8%.
- On the stock level, FloAlpha (see Appendix I for details) – a factor built upon several of EPFR's in-house variables – outperforms the benchmark by 8%.
- Furthermore, flow/positioning sentiment factors works well with other conventional factors such as volume, and performs relatively better than P/E, P/B, etc.
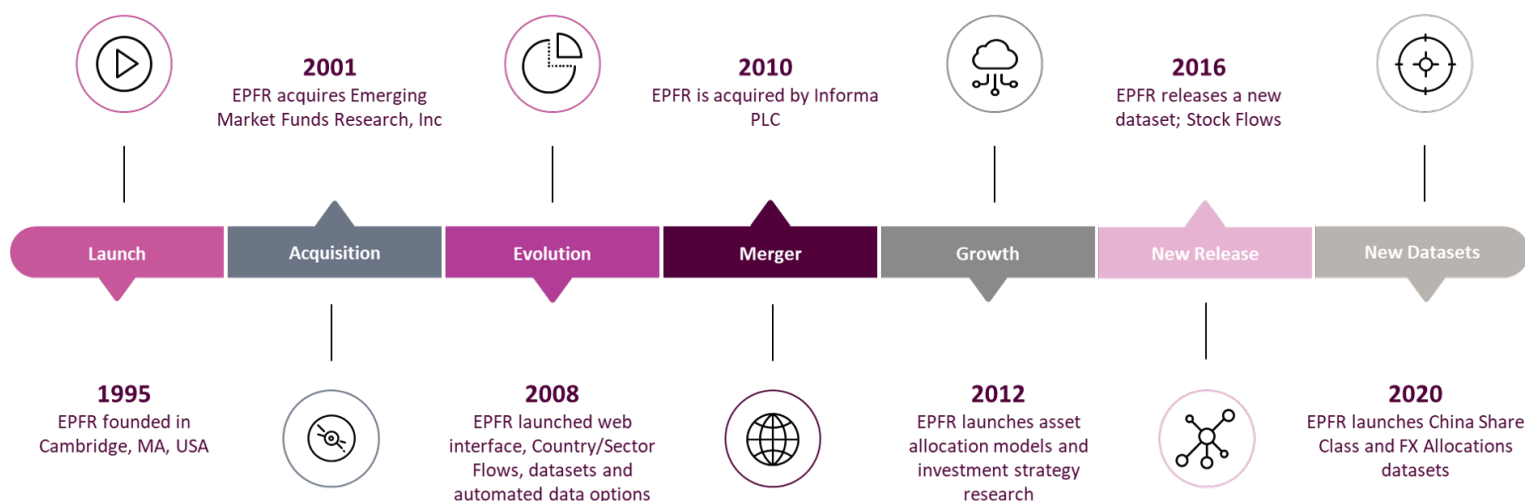
EPFR:
Who we are

EPFR is part of Informa Financial Intelligence (IFI), which encompasses 11 brands providing data, analysis and solutions to the mutual fund, banking, wealth management, investment advisory and public sectors.

In addition to EPFR, the following brands are part of IFI: Informa Global Markets (IGM), iMoneyNet, Informa Research Services, ICON Advisory Group, Trimtabs, eBenchmarks, Mapa Research, Spotlight Financial, BankTrends and PlacementTracker.

EPFR, a subsidiary of Informa plc (LSE: INF), provides fund flows and asset allocation data to financial institutions around the world. Tracking over 126,000 traditional and alternative funds domiciled globally with more than $38 trillion in total assets under management, we deliver a complete picture of investor flows and fund manager allocations driving global markets.

Our market moving data services include daily, weekly, and monthly equity and fixed income fund flows and monthly fund allocations by country, sector and industry.

2001
EPFR acquires Emerging Market Funds Research, Inc

2010
EPFR is acquired by Informa PLC

2016
EPFR releases a new dataset; Stock Flows

Launch	Acquisition	Evolution	Merger	Growth	New Release	New Datasets

1995
EPFR founded in Cambridge, MA, USA

2008
EPFR launched web interface, Country/Sector Flows, datasets and automated data options

2012
EPFR launches asset allocation models and investment strategy research

2020
EPFR launches China Share Class and FX Allocations datasets

EPFR:
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Appendix: FloAlpha Factor Methodology

Datapoints

Fund Level Datapoints

$\varphi \equiv dollar\ flow\ into\ a\ fund$
$\alpha \equiv dollar\ starting\ assets\ of\ a\ fund$
$A \equiv dollar\ ending\ assets\ of\ a\ fund$

Stock Level Datapoints

$\omega^* \equiv \%\ weight\ held\ by\ a\ fund\ in\ a\ stock$
$\Delta\omega^* \equiv change\ in\ weight\ from\ prior\ month$
$\bar{\omega} \equiv mean\ weight\ (similar\ mandate\ funds)$

Factor formulæ

Flows persist into the future

$$FloMo \equiv \sum \varphi \times \omega / \sum \alpha \times \omega$$

Favor stocks held with conviction, by a small minority

$$AllocSkew \equiv \sum A \times sgn(\bar{\omega} - \omega) / \sum A$$

Managers receiving flows are increasing allocations to the right stocks

$$FloTrend \equiv \sum \varphi \times \Delta\omega / \sum |\varphi \times \Delta\omega|$$
$$FloDiff \equiv \sum \varphi \times sgn(\Delta\omega) / \sum |\varphi|$$
$$FloDiff2 \equiv \sum \Delta\omega \times sgn(\varphi) / \sum |\Delta\omega|$$

Managers, who receive flows, are overweight the right stocks

$$ActWtTrend \equiv \sum \varphi \times (\omega - \bar{\omega}) / \sum |\varphi \times (\omega - \bar{\omega})|$$
$$ActWtDiff \equiv \sum \varphi \times sgn(\omega - \bar{\omega}) / \sum |\varphi|$$
$$ActWtDiff2 \equiv \sum (\omega - \bar{\omega}) \times sgn(\varphi) / \sum |\omega - \bar{\omega}|$$

The tendency for managers to raise allocations persists into the future

$$AllocMo \equiv \sum \Delta\omega \times (A + \alpha) / \sum (\omega - \Delta\omega/2) \times (A + \alpha)$$
$$AllocTrend \equiv \sum \Delta\omega \times (A + \alpha) / \sum |\Delta\omega \times (A + \alpha)|$$
$$AllocDiff \equiv \sum (A + \alpha) \times sgn(\Delta\omega) / \sum (A + \alpha)$$

Ownership dispersion is a positive sign.

$$Herfindahl^{[1]} \equiv 1 - \sum A^2 \times \omega^2 / (\sum A \times \omega)^2$$

$$FundCt^{[2]} \equiv \sum sgn(\omega)$$

[1] Barabanov, S. S. (2003). The relationship between institutional ownership, concentration of ownership, bid-ask spread, and returns on NASDAQ stocks.

[2] Chen, J., Hong, H., & Stein, J. C. (2002). Breadth of ownership and stock returns. Journal of financial Economics, 66(2-3), 171-205.