

Uncommon truths

Can we ignore China?

Chinese A-shares are due to be included in MSCI indices. Will this be a watershed moment or a damp squib? We suspect neither but continue to prefer Chinese A-shares to US stocks.

Foreign interest in Chinese A-shares comes and goes and has mainly been gone since the roller-coaster ride of 2015. However, with the upcoming inclusion of A-shares in the MSCI Emerging Markets Index and the MSCI ACWI index (in two steps in June and September), some investors will be obliged to take an interest and others may be encouraged to do so.

Admittedly, this will be a gradual process, with only 222 large-cap stocks included in the initial phase (versus the 459 large and mid-cap stocks included in the MSCI China A International index) and then with only a 5% index inclusion factor (and that after eliminating shares that cannot be owned by foreigners). Hence, MSCI estimated in June 2017 that A-shares would account for only 0.7% of the MSCI EM index and 0.1% of the MSCI ACWI index.

This is unlikely to cause a flood of money, as 0.7% of the market capitalisation of the MSCI EM index was \$38.6bn versus a total of \$1,109bn for the MSCI China A International index (both as of March 30, 2018). Nevertheless, it is an important psychological step

that could bring A-shares onto the radar of many international investors. Further, MSCI suggests that both the number of stocks and the index inclusion factor could be increased in the future.

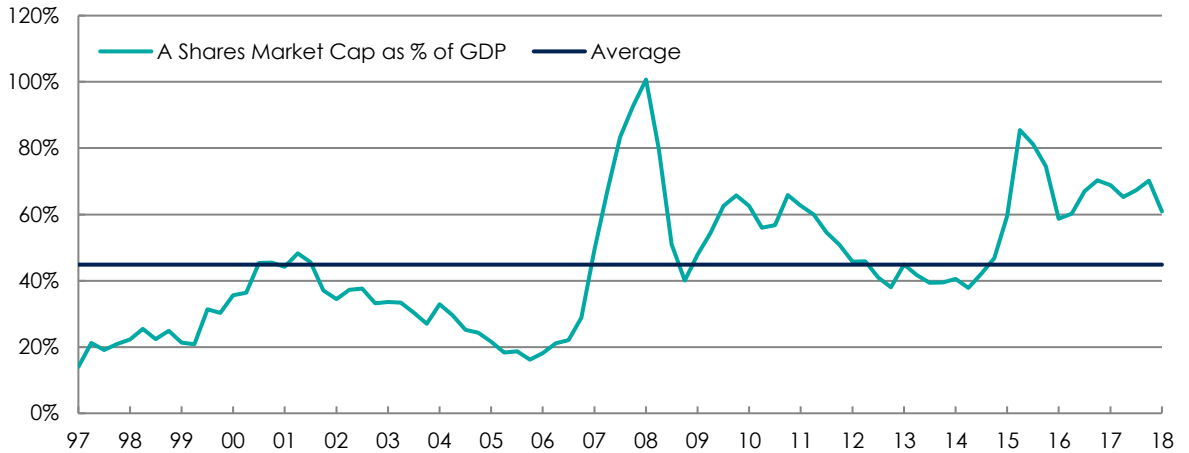
Many investors who do not have to invest in China may still be dissuaded by the events of 2015/16. For many, that episode reinforced the suspicion that the Chinese economy is inherently unstable, largely due to overinvestment fuelled by unsustainable levels of debt. At that time, we published an in-depth analysis of China (demographics, resources, growth potential, debt, banking system, markets and data quality). We concluded that, though China may have problems, they are no worse than those of many large developed economies and that China has more ammunition than most to combat such risks (see [Pictures of China](#), first published in September 2015).

We are in the process of updating that analysis to see how things have changed since then and this document represents a first look from an equity market perspective. Based on the cyclically-adjusted price/earnings ratio (CAPE) history shown in **Figure 1**, we would not categorise Chinese A-shares as expensive. The CAPE was 17.6 on March 30, which is in line with that of Europe but well below those of the US (29.9) and Japan (24.9) and its own historical average of 29.0 (since March 2004).

Figure 1 – China A-share cyclically adjusted price/earnings ratio (CAPE) based on Datastream indices



Notes: based on monthly data (March 2004-March 2018, with average calculated over that period). Cyclically-adjusted price earnings ratio is calculated using a 10-year moving average of earnings. As of March 30, 2018. Source: Datastream and Invesco PowerShares Research

Figure 2 – China A-share market capitalisation as percent of GDP

Notes: Based on quarterly data from 1997 Q1 to 2018 Q1 (the average is measured over that period). This shows the combined market capitalisation of A-shares quoted on the Shanghai and Shenzhen stock exchanges divided by China's GDP (GDP is on a rolling four quarter basis and 2018 Q1 GDP is our estimate).

Source: OECD, Datastream and Invesco PowerShares Research

Figure 2 shows an alternative way of looking at the stock market by comparing the market capitalisation of the A-shares quoted on the Shanghai and Shenzhen stock exchanges with China's gross domestic product (GDP). Although the CAPE shown in **Figure 1** suggests the A-share market moved to a lower valuation norm after the global financial crisis, the market cap to GDP ratio shown in **Figure 2** suggests the opposite. Corporate earnings would appear to have become a larger share of national income, which is perhaps not surprising for an emerging communist economy.

However, even if we take **Figure 2** literally, it is hard to use it as evidence that China's A-share market is abnormally valued. A market cap to GDP ratio of 61% is not excessive, neither in terms of China's own history, nor when compared to other countries (140%

for the US, 122% for the UK and 117% for Japan, using the market capitalisation of Datastream indices). For the record, if we include 'B' and 'H' shares, the equivalent Chinese ratio using Datastream indices becomes 43% (they use partial sampling).

So, at worst, we conclude that Chinese A-shares are not expensive and by some measures look cheap. Unfortunately, the same cannot be said for China's currency. **Figure 3** shows that in real (CPI-adjusted) terms, the trade weighted value of the Chinese yuan is close to historical peaks. It may be argued that a persistent current account surplus justifies the gradual appreciation over the last 12 years or so. However, the same could be said about Japan and that has not stopped the yen plumbing historical depths over recent years (in real effective terms). So, we are wary of the currency risk when investing in China.

Figure 3 – Real effective Chinese yuan (1990-2018)

Notes: This is a trade weighted index of the Chinese yuan against a basket of currencies adjusted for CPI inflation differentials (the index is calculated by the OECD). Data is monthly from January 1990 to March 2018.

Source: OECD, Datastream and Invesco PowerShares Research

Nevertheless, the Chinese currency does have some merits. When recently exploring why the US dollar has been so weak (see [here](#)), we concluded that the net international debtor status of the US disqualified its currency from being a so-called "safe-haven" (the net international investment position (NIIP) to GDP ratio is around -50%). China, on the other hand, has a positive NIIP of around 20% of GDP, which may be a good thing when global risk aversion rises. We may fear a downward trend in the Chinese yuan, but wouldn't be surprised to see it among the stronger currencies during times of global market stress.

We seem to be in one of those periods right now. Despite the most recent pre-occupation being the threat of a trade war between China and the US, the Chinese currency has strengthened by around 3.5% versus the dollar so far this year (as of April 10).

This is despite such a trade war representing a risk to the Chinese economy. To put matters into perspective, World Bank data suggests Chinese exports were around 20% of GDP in 2016, down from a peak of 37% in 2006 (the equivalent figure for the US is 12%). IMF data suggests that around 19% of Chinese exports went to the US in 2017, whereas only 8% of US exports went to China. Hence, Chinese exports to the US were around 3.7% of Chinese GDP in 2017 (assuming the export to GDP ratio was the same as in 2016). In the case of the US, exports to China were only around 1.0% of GDP.

Though the situation has improved since 2006, when exports to the US represented around 8% of Chinese GDP, an all-out trade war impacting all exports could potentially reduce Chinese GDP by 1%-2% in our opinion (depending on the US price-elasticity of demand for Chinese goods).

Luckily, we are far from that, with US proposals so far targeting less than one-third of the \$506bn imported from China in 2017 (Chinese imports from the US amounted to \$130bn). President Xi's April 10 speech seems to indicate a willingness to negotiate and hopefully signals the end of this worrying episode.

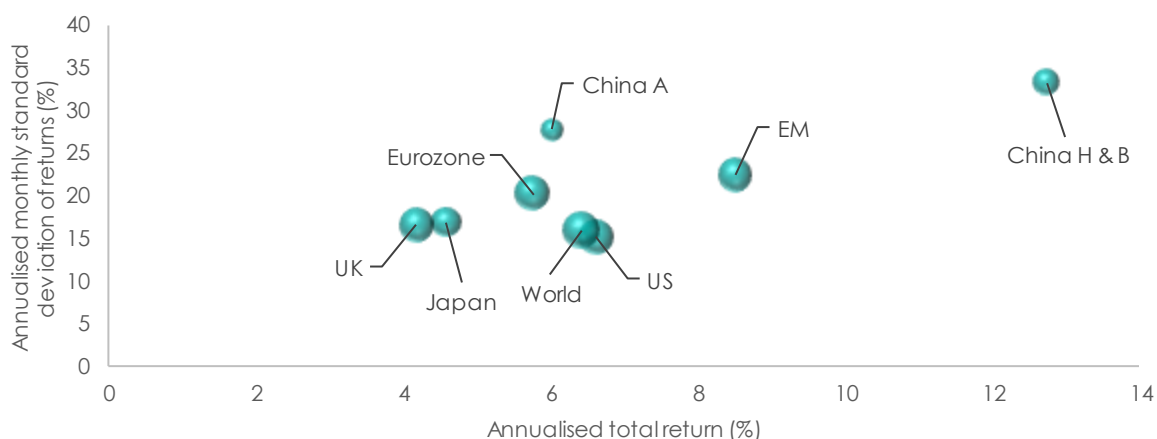
In the meantime, Chinese corporate earnings per share (based on A-shares) have accelerated from the year-on-year declines seen during much of 2015 and 2016 and are now growing at a 10% pace (compared to an average growth rate of 9% since 1995). Though this lags the current rate of growth in Japan and the Eurozone, it is line with that in the US.

Finally, what about risk versus reward? **Figure 4** shows that Chinese A-shares have produced slightly lower total returns than US and world indices over the last 20 years, with higher volatility (H and B-shares seem to have done a better job). This is not so encouraging but the lower correlation to other markets suggests A-shares can help with diversification (a similar picture emerges over the last five years, except that H and B-shares are no longer superior to A-shares).

So, having done a quick tour of Chinese A-shares, history suggests to us that diversification has been the main benefit of investment. However, we find no valuation abnormality and profits are growing again. On this basis we prefer Chinese A-shares to US stocks (which we find to be very expensive). Risks include the elevated valuation of the currency, the threat of a trade war and the fact that volatility tends to be high. We are sufficiently encouraged to update our analysis of the stability of the Chinese economy and financial system (of which, more later).

Unless stated otherwise, data is as of March 30, 2018

Figure 4 – Risk and return in global equity markets over the last 20 years (in US dollars)



Notes: based on monthly data using Datastream total return indices in US dollars from March 31, 1998 to March 30, 2018. The size of the bubbles is in proportion to the correlation with the World index. Past performance is not a guide to future returns. Source: Datastream and Invesco PowerShares Research

Figure 5 – Asset class total returns

Data as at 13/04/2018	Index	Current Level/Ry	Total Return (USD, %)					Total Return (Local Currency, %)				
			1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	511	1.7	-2.5	1.0	0.2	17.6	1.6	-2.4	1.0	-0.8	14.0
Emerging Markets	MSCI	1170	0.7	-4.2	0.0	1.5	24.7	1.0	-3.4	0.6	1.4	22.7
US	MSCI	2531	2.0	-3.8	0.7	0.0	16.3	2.0	-3.8	0.7	0.0	16.3
Europe	MSCI	1795	1.7	1.1	2.8	0.9	19.2	1.2	1.3	2.3	-2.0	5.2
Europe ex-UK	MSCI	2110	1.5	0.0	2.0	0.9	20.1	1.1	0.9	2.0	-1.1	6.2
UK	MSCI	1249	2.4	4.0	4.8	0.7	16.8	1.2	2.1	3.1	-4.4	2.6
Japan	MSCI	3425	0.4	-1.3	-0.3	0.7	20.8	0.8	-0.5	0.8	-3.9	18.9
Government Bonds												
World	BofA-ML	1.23	0.1	0.3	-0.3	2.3	5.9	-0.1	0.5	-0.2	-0.1	0.5
Emerging Markets	JPM	6.37	-0.1	-0.6	-0.8	3.8	10.5	0.0	0.9	0.0	2.8	8.7
US (10y)	Datastream	2.84	-0.4	0.3	-0.7	-3.1	-2.9	-0.4	0.3	-0.7	-3.1	-2.9
Europe	BofA-ML	0.73	0.5	0.8	0.1	3.9	17.3	0.0	1.4	-0.1	1.3	1.1
Europe ex-UK (EMU, 10y)	Datastream	0.51	0.4	0.5	0.1	2.5	14.3	-0.1	1.0	-0.1	-0.2	-1.5
UK (10y)	Datastream	1.48	0.8	2.3	0.8	3.4	11.8	-0.4	0.4	-0.7	-1.8	-1.8
Japan (10y)	Datastream	0.04	-0.3	-0.7	-1.0	5.0	1.9	0.0	0.1	0.1	0.2	0.3
IG Corporate Bonds												
Global	BofA-ML	3.01	0.2	0.2	0.2	-0.6	5.9	0.0	0.2	0.0	-1.5	1.4
US	BofA-ML	3.85	-0.1	0.3	0.0	-2.2	1.5	-0.1	0.3	0.0	-2.2	1.5
Europe	BofA-ML	0.99	0.6	-0.6	0.4	2.5	17.5	0.1	0.0	0.2	-0.2	1.3
UK	BofA-ML	2.78	1.1	1.9	1.2	3.5	14.4	0.0	0.0	-0.4	-1.8	0.5
Japan	BofA-ML	0.29	-0.4	-0.7	-1.1	5.0	2.2	0.0	0.1	0.0	0.3	0.6
HY Corporate Bonds												
Global	BofA-ML	5.84	0.7	0.4	0.9	0.7	7.4	0.5	0.4	0.9	0.1	4.5
US	BofA-ML	6.36	0.8	0.7	1.2	0.2	4.6	0.8	0.7	1.2	0.2	4.6
Europe	BofA-ML	3.32	1.1	-0.4	1.0	2.9	21.8	0.6	0.2	0.8	0.3	4.9
Cash (Overnight LIBOR)												
US		1.70	0.0	0.1	0.1	0.4	1.2	0.0	0.1	0.1	0.4	1.2
Euro Area		-0.44	0.4	-0.5	0.1	2.6	15.7	0.0	0.0	0.0	-0.1	-0.4
UK		0.48	1.1	2.0	1.6	5.5	14.3	0.0	0.0	0.0	0.1	0.3
Japan		-0.03	-0.4	-0.7	-1.0	5.0	1.6	0.0	0.0	0.0	0.0	0.0
Real Estate (REITs)												
Global	FTSE	1816	0.5	0.5	0.6	-2.8	5.4	0.0	1.0	0.3	-5.3	-9.1
Emerging Markets	FTSE	2538	2.9	1.1	2.0	6.2	35.8	2.3	1.6	1.8	3.5	17.1
US	FTSE	2645	-0.7	-0.6	-0.9	-8.6	-7.2	-0.7	-0.6	-0.9	-8.6	-7.2
Europe ex-UK	FTSE	3642	1.0	2.4	1.4	0.4	26.1	0.5	2.9	1.1	-2.2	8.7
UK	FTSE	1570	0.7	4.2	2.5	2.2	16.7	-0.5	2.3	0.9	-3.0	2.5
Japan	FTSE	2613	0.8	2.4	0.4	7.8	6.8	1.2	3.3	1.5	2.9	5.1
Commodities												
All	GSCI	2699	5.5	6.3	3.3	5.6	14.5	-	-	-	-	-
Energy	GSCI	505	7.6	10.8	3.8	9.1	22.8	-	-	-	-	-
Industrial Metals	GSCI	1411	4.1	1.5	4.9	-2.7	18.9	-	-	-	-	-
Precious Metals	GSCI	1609	1.0	1.2	1.7	2.0	2.1	-	-	-	-	-
Agricultural Goods	GSCI	398	0.2	-1.4	1.5	4.8	-6.0	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.23	0.4	-0.5	0.1	2.8	16.2	-	-	-	-	-
JPY		107.35	-0.4	-0.7	-1.0	5.0	1.6	-	-	-	-	-
GBP		1.42	1.2	1.9	1.6	5.3	13.8	-	-	-	-	-
CHF		1.04	-0.3	-1.9	-0.9	1.2	4.5	-	-	-	-	-
CNY		6.28	0.5	0.7	0.0	3.7	9.8	-	-	-	-	-

Notes: *The currency section is organised so that in all cases the numbers show the movement in the mentioned currency versus USD (+ve indicates appreciation, -ve indicates depreciation). Past performance is no guarantee of future results. Please see appendix for definitions, methodology and disclaimers.

Source: Datastream and Invesco PowerShares Research.

Figure 6 – Equity sector total returns relative to local market (%)

Data as at 13/04/2018	US					Europe				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Oil & Gas	3.9	10.1	5.2	-0.2	-8.3	0.9	5.1	3.9	4.8	3.1
Materials	0.7	-0.5	1.4	-3.4	-0.9	0.8	-1.7	-0.1	-0.8	4.9
Basic Resources	1.6	2.9	2.4	0.6	6.8	2.2	-0.2	0.5	0.9	11.6
Chemicals	0.9	-0.8	1.8	-3.5	-1.2	-0.5	-2.9	-0.7	-2.4	-0.7
Industrials	-0.4	0.1	-1.1	-1.9	-0.9	-0.1	-1.9	-1.2	-0.6	1.1
Construction & Materials	-1.6	-2.7	-2.2	-7.2	-13.6	-0.6	-2.2	-1.6	-2.6	-4.7
Industrial Goods & Services	-0.1	0.6	-0.8	-1.3	0.2	0.0	-1.9	-1.1	-0.1	2.7
Consumer Discretionary	-1.5	-0.3	-0.8	3.1	2.0	0.7	2.9	1.4	3.6	4.2
Automobiles & Parts	-0.1	4.9	2.8	-5.2	-1.4	0.7	2.9	0.3	6.6	16.9
Media	-2.7	-1.5	-1.2	-6.9	-19.9	-0.8	0.2	0.1	-0.3	-6.9
Retail	-1.1	-1.3	-1.5	6.2	8.8	0.8	1.4	1.7	0.0	-4.4
Travel & Leisure	-2.0	0.4	-1.2	-3.0	0.1	-0.5	-3.8	-0.9	-3.6	-0.9
Consumer Staples	-1.7	0.9	-0.7	-7.0	-15.1	-1.2	2.4	0.1	-1.6	-5.6
Food & Beverages	-1.5	0.7	-0.3	-5.4	-13.3	-1.9	-1.8	-1.7	-4.4	-3.4
Personal & Household Goods	-2.2	2.0	-0.1	-5.7	-14.7	-0.8	5.3	1.3	0.2	-6.6
Healthcare	0.4	-1.0	0.1	-0.4	-3.2	-0.6	0.3	-1.0	-1.4	-8.8
Financials	-1.0	-2.2	-1.0	-1.2	4.8	0.3	-1.3	-0.2	0.4	4.7
Banks	-1.2	-3.4	-0.7	-1.1	7.0	0.2	-3.4	-0.7	-1.6	3.3
Financial Services	-0.8	-2.2	-1.6	-3.7	4.3	-0.3	0.2	-0.3	3.8	8.0
Insurance	-0.8	0.7	-1.0	-2.5	-4.1	1.2	1.5	1.0	3.7	8.1
Real Estate	-3.1	2.3	-2.4	-6.6	-15.3	-0.9	2.6	-1.2	-0.4	0.6
Technology	1.7	-1.3	0.7	5.1	13.4	1.2	-4.2	0.3	2.4	5.8
Telecommunications	-1.3	0.9	-0.1	-6.9	-17.5	0.3	0.8	1.9	-2.9	-8.1
Utilities	-3.3	4.9	-2.1	-4.6	-14.3	-0.1	2.9	-0.1	1.9	0.7

Notes: We use a sector classification created by merging the two main systems used by Standard & Poor's (S&P) for the US and STOXX for Europe. We have decided to classify our 10 top level industries using categories that most closely resemble the Global Industry Classification Standard (GICS) and at the level below that (super sectors) we are using the Industry Classification Benchmark (ICB). The former is used for the S&P 500 index and the latter for the STOXX 600, our benchmark indices. The two systems overlap in most cases and the only material difference seems to be in the consumer sectors. Therefore, we define consumer staples as the aggregate of personal & household goods and food & beverage, while consumer discretionary includes automobiles & parts, media, retail and travel & leisure. For the rest, we assume 100% overlap for the corresponding top-level sectors. Past performance is no guarantee of future results. The Global Industry Classification Standard was developed by and is the exclusive property and service mark of MSCI Inc. and Standard & Poor's.

Source: Datastream and Invesco PowerShares Research

Figure 7 – Model asset allocation

	Neutral	Policy Range	Allocation	Position vs Neutral	Hedged	Currency
Cash	5%	0-10%	10%			
Cash	2.5%		10%			
Gold	2.5%		0%			
Bonds	45%	10-80%	41%			
Government	30%	10-50%	18%			
US	10%		11%			
Europe ex-UK (Eurozone)	8%		2%			
UK	2%		2%		100%	JPY
Japan	8%		0%			
Emerging Markets	2%		3%			
Corporate IG	10%	0-20%	18%			
US Dollar	5%		10%		50%	JPY
Euro	3%		4%			
Sterling	1%		2%		100%	JPY
Japanese Yen	1%		2%			
Corporate HY	5%	0-10%	5%			
US Dollar	4%		5%			
Euro	1%		0%			
Equities	45%	20-70%	43%			
US	25%		8%			
Europe ex-UK	7%		14%			
UK	4%		4%			
Japan	4%		8%			
Emerging Markets	5%		9%			
Real Estate	3%	0-6%	6%			
US	1%		2%		50%	JPY
Europe ex-UK	1%		2%			
UK	0.5%		0%			
Japan	0.5%		1%			
Emerging Markets	0%		1%			
Commodities	2%	0-4%	0%			
Energy	1%		0%			
Industrial Metals	0.3%		0%			
Precious Metals	0.3%		0%			
Agriculture	0.3%		0%			
Total	100%		100%			
Currency Exposure						
USD	49%		33%			
EUR	21%		24%			
GBP	8%		4%			
JPY	14%		23%			
EM	7%		14%			
Total	100%		100%			

Notes: This is a theoretical portfolio and is for illustrative purposes only. See the latest [The Big Picture](#) document (published on March 21, 2018) for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy.
Source: Invesco PowerShares Research

Figure 8– Model sector allocations

	US		Europe		Preferred Region
	Neutral	Model	Neutral	Model	
Oil & Gas	5.8%	Overweight	5.8%	Overweight	Europe
Materials	2.3%	Underweight	6.8%	Underweight	Europe
Basic Resources	0.4%	Neutral	3.3%	Neutral	Europe
Chemicals	1.9%	Underweight	3.5%	Underweight	Europe
Industrials	12.1%	Neutral	14.3%	Neutral	US
Construction & Materials	0.6%	Underweight	2.7%	Neutral	Europe
Industrial Goods & Services	11.5%	Neutral	11.6%	Neutral	US
Consumer Discretionary	14.9%	Neutral	11.0%	Overweight	Europe
Automobiles & Parts	0.8%	Neutral	3.6%	Neutral	Europe
Media	2.8%	Neutral	2.2%	Underweight	US
Retail	8.4%	Neutral	3.4%	Overweight	Europe
Travel & Leisure	3.0%	Overweight	1.9%	Overweight	US
Consumer Staples	8.5%	Neutral	16.6%	Neutral	US
Food & Beverage	3.8%	Overweight	7.2%	Overweight	US
Personal & Household Goods	4.7%	Neutral	9.4%	Underweight	US
Healthcare	12.6%	Overweight	11.1%	Neutral	US
Financials	19.0%	Underweight	21.9%	Neutral	Europe
Banks	6.6%	Neutral	12.6%	Neutral	Europe
Financial Services	5.8%	Underweight	2.1%	Overweight	Europe
Insurance	3.7%	Underweight	5.4%	Overweight	Europe
Real Estate	2.9%	Overweight	1.8%	Neutral	US
Technology	19.8%	Underweight	4.1%	Underweight	US
Telecommunications	2.0%	Overweight	4.0%	Underweight	US
Utilities	2.9%	Underweight	4.4%	Underweight	US

Notes: These are theoretical allocations which are for illustrative purposes only. They do not represent an actual portfolio and are not a recommendation of any investment or trading strategy. See the latest Strategic Sector Selector (January 23, 2018) for more details.

Source: Datastream and Invesco PowerShares Research.

Appendix

Definitions of data and benchmarks (for Figure 5)

Sources: we source data from Datastream unless otherwise indicated.

Cash: returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1st January 2001 with a value of 100.

Gold: London bullion market spot price in USD/troy ounce.

Government bonds: Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the Bank of America Merrill Lynch government bond total return index for the World and Europe. The emerging markets yields and returns are based on the JP Morgan emerging markets global composite government bond index.

Corporate investment grade (IG) bonds: Bank of America Merrill Lynch investment grade corporate bond total return indices.

Corporate high yield (HY) bonds: Bank of America Merrill Lynch high yield total return indices

Equities: We use MSCI benchmark gross total return indices for all regions.

Commodities: Goldman Sachs Commodity total return indices

Real estate: FTSE EPRA/NAREIT total return indices

Currencies: Global Trade Information Services spot rates

Authors

Paul Jackson

Head of Multi-Asset Research

T. +44 (0)20 3370 1172

E. paul.jackson@invesco.com

Andr s Vig

Multi-Asset Strategist

T. +44 (0)20 3370 1152

E. andras.vig@invesco.com

Important information

Your capital is at risk. You may not get back the amount you invested.

By accepting this document, you consent to communicating with us in English, unless you inform us otherwise. This document is for informational purposes only and is intended only for Professional Clients and Financial Advisers in Continental Europe (as defined in important information); Qualified Investors in Switzerland; Professional Clients only in Dubai, Jersey, Guernsey, and the UK; for Qualified Clients in Israel, for Professional/Qualified/Sophisticated Investors in Bahrain, Jordan, Kuwait, Lebanon, Mauritius, Oman, Qatar, Saudi Arabia, South Africa, Tunisia, Turkey, and the United Arab Emirates; for Professional investors in Hong Kong, for certain specific sovereign wealth funds and/or Qualified Domestic Institutional Investors approved by local regulators only in the People's Republic of China, for Institutional Investors in the United States and Singapore; for certain specific Qualified Institutions and/or Sophisticated Investors only in Taiwan, for Qualified Professional Investors in Korea, for certain specific institutional investors in Brunei, for Qualified Institutional Investors and/or certain specific institutional investors in Thailand and for certain specific institutional investors in Malaysia, upon request, for informational purposes only. This document is only intended for use with Institutional Investors in Japan; in Canada, this document is restricted to Accredited Investors as defined under National Instrument 45-106. It is not intended for and should not be distributed to, or relied upon by, the public or retail investors. It is not intended for solicitation of any security. Please do not redistribute this document.

For the distribution of this document, Continental Europe is defined as Andorra, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Gibraltar, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

This document is not an offering of a financial product and should not be distributed to retail clients who are resident in jurisdiction where its distribution is not authorized or is unlawful. Circulation, disclosure, or dissemination of all or any part of this document to any unauthorized person is prohibited. This document is only intended for and will be only distributed to persons resident in jurisdictions where such distribution or availability would not be contrary to local laws or regulations.

This document is solely for duly registered banks or a duly authorized Monegasque intermediary acting as a professional institutional investor which has such knowledge and experience in financial and business matters as to be capable of evaluating the contents of this document. Consequently, this document may only be communicated to banks duly licensed by the "Autorit  de Contr le Prudentiel et de R solution" and fully licensed portfolio management companies by virtue of Law n  1.144 of July 26, 1991 and Law 1.338, of September 7, 2007, duly licensed by the "Commission de Contr le des Activit s Financi res. Such regulated intermediaries may in turn communicate this document to potential investors.

This document has been prepared only for those persons to whom Invesco has provided it. It should not be relied upon by anyone else. Information contained in this document may not have been prepared or tailored for an Australian audience and does not constitute an offer of a financial product in Australia. You may only reproduce, circulate and use this document (or any part of it) with the consent of Invesco.

The information in this document has been prepared without taking into account any investor's investment objectives, financial situation or particular needs. Before acting on the information the investor should consider its appropriateness having regard to their investment objectives, financial situation and needs.

You should note that this information:

- may contain references to dollar amounts which are not Australian dollars;
- may contain financial information which is not prepared in accordance with Australian law or practices;
- may not address risks associated with investment in foreign currency denominated investments; and
- does not address Australian tax issues.

Issued in Australia by Invesco Australia Limited (ABN 48 001 693 232), Level 26, 333 Collins Street, Melbourne, Victoria, 3000, Australia which holds an Australian Financial Services Licence number 239916.

This document is issued only to wholesale investors in New Zealand to whom disclosure is not required under Part 3 of the Financial Markets Conduct Act. This document has been prepared only for those persons to whom it has been provided by Invesco. It should not be relied upon by anyone else and must not be distributed to members of the public in New Zealand. Information contained in this document may not have been prepared or tailored for a New Zealand audience. You may only reproduce, circulate and use this document (or any part of it) with the consent of Invesco. This document does not constitute and should not be construed as an offer of, invitation or proposal to make an offer for, recommendation to apply for, an opinion or guidance on Interests to members of the public in New Zealand. Applications or any requests for information from persons who are members of the public in New Zealand will not be accepted. The distribution and offering of this document in certain jurisdictions may be restricted by law. Persons into whose possession this marketing material may come are required to inform them about and to comply with any relevant restrictions. This does not constitute an offer or solicitation by anyone in any jurisdiction in which such an offer is not authorised or to any person to whom it is unlawful to make such an offer or solicitation. This does not constitute a recommendation of any investment strategy or product for a particular investor. Investors should consult a financial professional before making any investment decisions.

This overview contains general information only and does not take into account individual objectives, taxation position or financial needs. Nor does this constitute a recommendation of the suitability of any investment strategy for a particular investor. It is not an offer to buy or sell or a solicitation of an offer to buy or sell any security or instrument or to participate in any trading strategy to any person in any jurisdiction in which such an offer or solicitation is not authorized or to any person to whom it would be unlawful to market such an offer or solicitation. It does not form part of any prospectus. All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. Investments have risks and you may lose your principal investment. Please obtain and review all financial material carefully before investing. Asset management services are provided by Invesco in accordance with appropriate local legislation and regulations.

The opinions expressed are those of the authors and may differ from the opinions of other Invesco investment professionals. Opinions are based upon current market conditions, and are subject to change without notice. Past performance is no guarantee of future results.

This material may contain statements that are not purely historical in nature but are "forward-looking statements." These include, among other things, projections, forecasts, estimates of income, yield or return or future performance targets. These forward-looking statements are based upon certain assumptions, some of which are described herein. Actual events are difficult to predict and may substantially differ from those assumed. All forward-looking statements included herein are based on information available on the date hereof and Invesco assumes no duty to update any forward-looking statement. Accordingly, there can be no assurance that estimated returns or projections can be realized, that forward-looking statements will materialize or that actual returns or results will not be materially lower than those presented. All information is sourced from Invesco PowerShares, unless otherwise stated.

Effective 8/18/17, Invesco Ltd completed the acquisition of Source. Links to documents published prior to this date are from Source as a predecessor firm and are provided for historical and informational purposes only.

Investment strategies involve numerous risks. The calculations and charts set out herein are indicative only, make certain assumptions and no guarantee is given that future performance or results will reflect the information herein. Past performance is not a guarantee of future performance.

The Directors of Invesco UK Services Limited and Invesco PowerShares do not guarantee the accuracy and/or the completeness of any data included herein and we shall have no liability for any errors, omissions, or interruptions herein. We make no warranty, express or implied, as to the information described herein. All data and performance shown is historical unless otherwise indicated. Investors should consult their own business, tax,

legal and accounting advisors with respect to this proposed transaction and they should refrain from entering into a transaction unless they have fully understood the associated risks and have independently determined that the transaction is appropriate for them. In no way should we be deemed to be holding ourselves out as financial advisers or fiduciaries of the recipient hereof and this document is not intended to be "investment research" as defined in the Handbook of the UK Financial Conduct Authority.

Source and Invesco PowerShares, and our shareholders, or employees or our shareholders may from time to time have long or short positions in securities, warrants, futures, options, derivatives or financial instruments referred to in this material. As a result, investors should be aware that we may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

This document is provided by Invesco UK Services Limited, Perpetual Park, Perpetual Park Drive, Henley-on-Thames, Oxfordshire, RG9 1HH, authorised and regulated by the Financial Conduct Authority, Invesco Asset Management S.A., 18, rue de Londres, 75009 Paris, France, authorised and regulated by the Autorité des marchés financiers, Invesco Asset Management Deutschland GmbH, An der Welle 5, 60322- Frankfurt/M., Germany, Invesco Asset Management (Schweiz) AG, Talacker 34, 8001 Zurich, Switzerland, and Invesco Asset Management Limited, Perpetual Park, Perpetual Park Drive, Henley-on-Thames, Oxfordshire RG9 1HH, UK Authorised and regulated by the Financial Conduct Authority.

In the US by Invesco PowerShares Capital Management LLC, 3500 Lacey Road, Suite 700, Downers Grove, IL 60515

In Canada by Invesco Canada Ltd., 5140 Yonge Street, Suite 800, Toronto Ontario, M2N 6X7. Terms and Conditions for Canadian investors can be seen [here](#).

This document is issued in the following countries:

- in Hong Kong by Invesco Hong Kong Limited 景順投資管理有限公司, 41/F, Champion Tower, Three Garden Road, Central, Hong Kong. This document has not been reviewed by the Securities and Futures Commission.
- in Singapore by Invesco Asset Management Singapore Ltd, 9 Raffles Place, #18-01 Republic Plaza, Singapore 048619.
- in Taiwan by Invesco Taiwan Limited, 22F, No.1, Songzhi Road, Taipei 11047, Taiwan (0800-045-066). Invesco Taiwan Limited is operated and managed independently.
- In Japan by Invesco Asset Management (Japan) Limited, Roppongi Hills Mori Tower 14F, 6-10-1 Roppongi, Minato-ku, Tokyo 106-6114: Registration Number: The Director – General of Kanto Local Finance Bureau(Kin-sho)

© 2018 Invesco UK Services Limited and Invesco PowerShares. All rights reserved. GL188.