Uncommon truths
Giving credit to China

China's credit growth has often been a cause for concern, especially the rising importance of shadow banking. In this update to earlier work we acknowledge the growth but see reasons for hope.

Remember China's shadow banking problem? Five years ago, this was the next big thing that was going to sink China – or so we were told at the time. When we explored this in *More pictures of China* in 2018, we concluded that China's shadow banking system had grown rapidly but only to bring it in line with that of the US and leaving it smaller than those of many European countries. If China had a shadow banking problem, then so did other countries.

Before bringing that analysis up to date, it is worth looking at the broader debt situation in China. As outlined in Global debt review 2020, China's non-financial sector debt exceeded 250% of GDP in 2019, as did that of the US, Japan and many European countries (Germany being the honourable exception).

Though the level of China's debt was unremarkable (relative to other large countries), the rate of change was alarming. China's debt ratio had increased by around 80 percentage points in the most recent 10 years, the biggest increase across our universe of the world's 25 largest economies.

Figure 1a shows that bank lending to the private sector accounted for a large part of the accumulation of debt in China (including another jump during the first quarter of 2020). It also shows that bank financing has become a noticeably more important part of the Chinese economy than in other countries (the Eurozone looks like the UK on this score). Note the stark contrast with the US, which has tended to rely more on financial markets than other countries.

With such a large increase in China's reliance on bank financing, there is natural concern about what will happen during an economic downturn, such as seen during the first quarter of 2020. So far, the news is reassuring with the commercial banks non-performing loans ratio rising but only to 1.94% in 2020 Q2, up from 1.86% at the end of 2019 and 1.75% a year earlier. By way of comparison, it was above 12% in early 2005 and recently bottomed at 0.90% in 2011 Q3.

Of course, bad loans and defaults tend to lag the economy, so worse may be to come but for now the news is not too bad and the economy rebounded quickly after the sharp decline in Q1. In terms of capital buffers, China reports that at the end 2020 Q2, the core tier-1 capital ratio of its commercial banks was 10.5%, down from 10.9% at the end of 2019 but above the Basel III target range of 7.0%-9.5%. When looking at the capital to assets ratio (using Tier 1, 2 & 3 capital), World Bank data suggests that in 2018 Chinese banks (9.1%) were better provisioned than those of Japan (5.4%, 2017 data), the EU (8.3%, 2017 data) and India (7.5%) but lagged those of the US (11.7%), Brazil (10.1%) and Russia (10.0%).

We would expect banks around the world to suffer heightened bad loans and defaults as a result of the Covid recession but, apart from the recent strong growth in loans, we see no reason to worry more about Chinese banks (the economy rebounded quickly and the banks appear reasonably well capitalised).

Figure 1a – Bank credit to private non-financial sector as % of GDP (1985-2020)

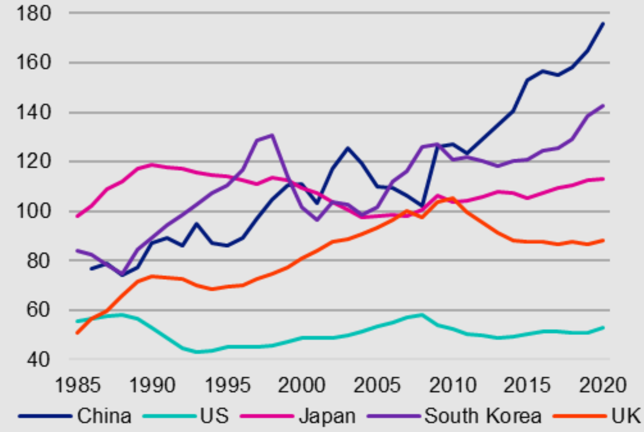
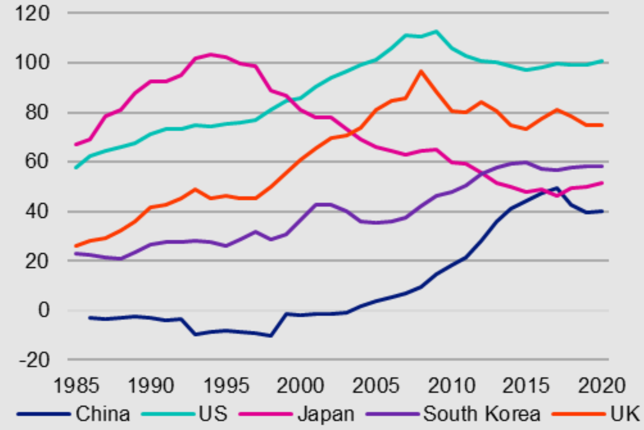


Figure 1b – Non-bank credit to private non-financial sector as % of GDP (1985-2020)



Notes: annual year-end data from 1985 to 2020, except for 2020 which is 2020 Q1 data. Non-bank credit is calculated as the difference between total credit and credit provided by domestic banks (sourced from the Bank for International Settlements).
Source: Bank for International Settlements, Refinitiv Datastream and Invesco

Invesco

Looking at non-bank sources of credit in China, **Figure 1b** suggests this has also significantly increased during this century. Having started in negative territory at the end of the last century (suggesting perhaps that overseas banks were filling the gap), credit from non-bank sources had grown to nearly 50% of GDP in 2017 but had settled at around 40% of GDP in 2019 and 2020 (as of the end of Q1).

That growth in China's non-bank credit from 2000 to 2017 looks very similar to what happened in the US and the UK from the early 1990s to the time of the Global Financial Crisis (GFC) and we know what happened next. Nevertheless, non-bank sources of credit are currently nowhere near as important to the Chinese economy as they were in the US and UK just prior to the GFC (and remains well below the levels seen in those countries).

However, talking of non-bank sources of credit doesn't really stir the emotions in the way that "shadow banking" does. The Financial Stability Board (FSB) makes a valiant effort to compile data and, though data is only available up to 2018, it allows us to compare trends across a wide range of countries (see **Figures 2a** and **2b**).

The FSB defines shadow banking as non-bank financial entities involved in credit intermediation that may pose financial stability risks. **Figure 2a** shows that the assets of such institutions have grown rapidly in China over the last decade (as a proportion of the assets of all financial corporations). The trend has been the opposite in the US, with shadow banking becoming less important since the GFC. Interestingly, while shadow banking appears to have again become more important since 2016 in the US, it has become less so in China (perhaps because of policy measures to dampen such activity). Shadow banking remains more important in the US than in China.

However, **Figure 2a** could provide a distorted comparison across countries because central bank assets are included in the denominator. Given the use of quantitative easing in some countries, it may be fairer to compare shadow banking assets to GDP, as in **Figure 2b**. This again confirms that shadow banking has become more important to the Chinese economy over the last decade (as was the case in all our comparators, except the US). Nevertheless, as of 2018 it was less important in China than in the US (and Japan).

Note that it is difficult to compare the data in **Figures 1b** and **2b** because the FSB definition of shadow banking credit is narrower than non-bank credit (and because **Figure 1b** concerns credit provision to the private non-financial sector, whereas **Figure 2b** looks at credit provided to a broader set of borrowers).

In summary, it appears that China's financial system has evolved rapidly over the last decade and rapid change always brings the risk of errors. However, in many ways China has simply been catching up with developed world counterparts. The importance of banking finance to the Chinese economy appears greater than for our comparator panel but this could be a function of less well-developed financial markets. In any case, Chinese banks appear to be reasonably well capitalised. Likewise, shadow banking activity has increased but has recently levelled off and remains comparable to big developed economies.

Figure 2a – Shadow banking assets as % of financial corporations' assets (2006-2018)

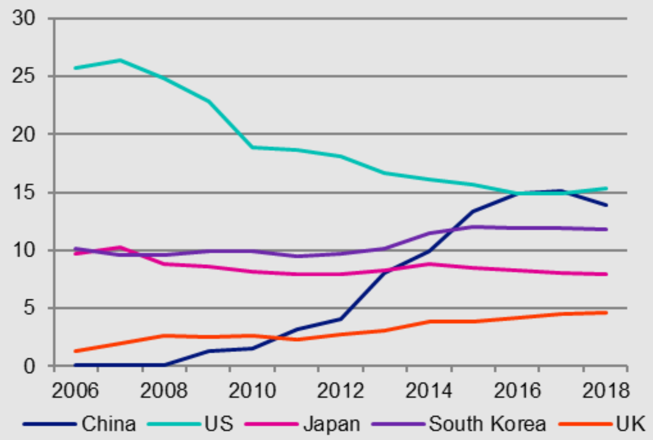
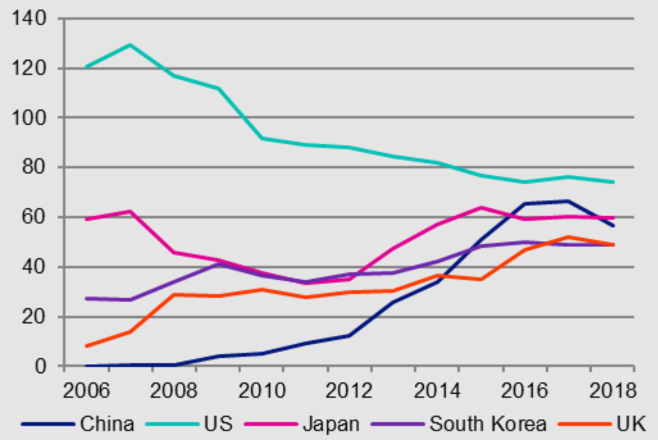


Figure 2b – Shadow banking assets as % of GDP (2006-2018)



Notes: annual data from 2006 to 2018 based on data from the Financial Stability Board (GDP data is from the World Bank). The Financial Stability Board defines shadow banking as non-bank financial entities involved in credit intermediation that may pose financial stability risks.
Source: Financial Stability Board, World Bank, Refinitiv Datastream and Invesco

Figure 3 – Asset class total returns

Data as at 02/10/2020		Current	Total Return (USD, %)					Total Return (Local Currency, %)				
	Index	Level/RY	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	564	1.7	-4.9	-0.2	1.6	13.7	1.4	-4.6	-0.2	1.4	12.2
Emerging Markets	MSCI	1082	2.2	-3.1	0.0	-0.9	12.2	1.8	-3.1	-0.1	2.8	13.8
US	MSCI	3244	1.7	-6.2	-0.3	6.9	20.3	1.7	-6.2	-0.3	6.9	20.3
Europe	MSCI	1601	2.8	-3.2	0.4	-8.1	3.8	1.6	-1.7	0.4	-10.5	-2.9
Europe ex-UK	MSCI	2021	2.7	-3.2	0.3	-2.9	9.1	1.7	-2.1	0.3	-7.1	1.6
UK	MSCI	894	2.9	-3.3	0.7	-22.8	-11.6	1.1	-0.6	0.7	-21.0	-15.9
Japan	MSCI	3323	-0.4	0.1	-0.8	-1.1	5.4	-0.6	-0.6	-0.9	-4.1	3.4
Government Bonds												
World	BofA-ML	0.23	0.3	-0.2	0.0	6.7	5.8	-0.2	0.2	0.0	4.8	3.0
Emerging Markets	BBloom	4.41	-0.3	-3.8	-0.1	0.2	3.4	-0.3	-3.8	-0.1	0.2	3.4
US (10y)	Datastream	0.69	-0.3	-0.4	-0.2	14.6	11.6	-0.3	-0.4	-0.2	14.6	11.6
Europe	Bofa-ML	-0.12	1.0	-0.2	0.1	8.6	9.2	0.2	0.9	0.2	4.0	2.0
Europe ex-UK (EMU, 10y)	Datastream	-0.54	0.9	-0.5	0.0	8.3	7.1	0.1	0.6	0.1	3.8	0.1
UK (10y)	Datastream	0.30	1.1	-3.1	-0.3	3.4	8.1	-0.7	-0.4	-0.3	5.9	2.8
Japan (10y)	Datastream	0.01	0.3	1.1	0.2	3.1	0.3	0.0	0.3	0.1	-0.1	-1.6
IG Corporate Bonds												
Global	BofA-ML	1.69	0.3	-1.1	0.0	5.8	7.4	0.0	-0.7	0.0	4.9	5.4
Emerging Markets	BBloom	4.48	0.7	-1.3	0.1	5.5	9.4	0.7	-1.3	0.1	5.5	9.4
US	BofA-ML	2.11	0.0	-1.1	-0.1	6.5	7.5	0.0	-1.1	-0.1	6.5	7.5
Europe	BofA-ML	0.57	1.1	-0.9	0.1	5.3	7.5	0.2	0.1	0.2	0.9	0.4
UK	BofA-ML	1.85	1.5	-3.1	-0.2	2.0	9.4	-0.4	-0.4	-0.2	4.4	4.1
Japan	BofA-ML	0.49	0.3	1.0	0.2	3.1	1.5	0.0	0.2	0.0	-0.1	-0.4
HY Corporate Bonds												
Global	BofA-ML	5.98	0.9	-1.5	0.1	0.6	4.3	0.7	-1.3	0.1	-0.1	3.0
US	BofA-ML	6.09	0.9	-1.3	0.1	-0.2	2.9	0.9	-1.3	0.1	-0.2	2.9
Europe	BofA-ML	4.17	1.5	-1.7	0.2	2.0	6.8	0.6	-0.7	0.3	-2.3	-0.2
Cash (Overnight LIBOR)												
US		0.08	0.0	0.0	0.0	0.4	0.8	0.0	0.0	0.0	0.4	0.8
Euro Area		-0.59	0.7	-1.2	0.0	4.0	6.3	0.0	0.0	0.0	-0.4	-0.6
UK		0.05	1.5	-3.1	0.1	-2.3	5.5	0.0	0.0	0.0	0.2	0.3
Japan		-0.11	0.3	0.8	0.1	3.1	1.7	0.0	0.0	0.0	-0.1	-0.1
Real Estate (REITs)												
Global	FTSE	1629	4.4	-1.3	2.6	-17.4	-13.7	3.5	-0.3	2.7	-20.9	-19.4
Emerging Markets	FTSE	1855	3.3	-2.2	0.4	-22.2	-7.7	2.5	-1.2	0.5	-25.4	-13.8
US	FTSE	2629	6.5	-0.4	4.7	-16.2	-16.1	6.5	-0.4	4.7	-16.2	-16.1
Europe ex-UK	FTSE	3267	4.2	-2.4	0.6	-10.9	-1.1	3.3	-1.4	0.7	-14.6	-7.6
UK	FTSE	1150	5.4	-5.8	1.9	-26.5	-9.1	3.5	-3.2	1.8	-24.8	-13.5
Japan	FTSE	2431	-0.4	0.2	-0.1	-16.9	-17.8	-0.7	-0.6	-0.2	-19.5	-19.3
Commodities												
All	GSCI	1664	-3.1	-6.0	-3.6	-35.8	-29.3	-	-	-	-	-
Energy	GSCI	213	-7.5	-12.1	-6.8	-57.2	-51.0	-	-	-	-	-
Industrial Metals	GSCI	1213	0.1	-3.6	-1.3	-0.5	2.2	-	-	-	-	-
Precious Metals	GSCI	2198	2.4	-3.0	0.8	22.9	24.1	-	-	-	-	-
Agricultural Goods	GSCI	335	2.9	3.3	-0.3	-3.8	1.8	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.17	0.7	-1.2	0.0	4.5	6.9	-	-	-	-	-
JPY		105.35	0.3	0.8	0.1	3.1	1.8	-	-	-	-	-
GBP		1.29	1.8	-2.8	0.1	-2.4	5.1	-	-	-	-	-
CHF		1.09	0.8	-1.2	0.0	5.1	8.2	-	-	-	-	-
CNY		6.79	0.5	0.7	0.0	2.5	5.3	-	-	-	-	-

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: Refinitiv Datastream and Invesco

Figure 4 – World equity sector total returns relative to market (%)

Data as at 02/10/2020	Global				
	1w	1m	QTD	YTD	12m
Energy	**-3.1**	**-2.0**	**-0.8**	**-32.6**	**-32.7**
Basic Materials	**-0.3**	**0.5**	**0.0**	**1.6**	**3.3**
Basic Resources	-0.4	-0.8	0.1	1.6	5.4
Chemicals	-0.2	2.0	-0.1	1.6	0.6
Industrials	**0.2**	**1.7**	**0.2**	**-2.0**	**-2.7**
Construction & Materials	1.2	2.7	0.7	-3.8	-4.9
Industrial Goods & Services	0.0	1.6	0.1	-1.7	-2.3
Consumer Discretionary	**0.7**	**0.7**	**0.3**	**9.8**	**8.5**
Automobiles & Parts	0.9	2.4	-0.5	14.2	10.1
Media	1.2	-2.1	0.5	-3.1	-1.6
Retailers	0.7	-1.4	0.2	28.0	26.4
Travel & Leisure	0.4	1.9	1.1	-17.5	-18.2
Consumer Products & Services	0.5	3.3	0.5	8.9	8.0
Consumer Staples	**-0.4**	**1.6**	**0.1**	**-1.7**	**-4.6**
Food, Beverage & Tobacco	-0.2	0.9	0.1	-5.6	-7.8
Personal Care, Drug & Grocery Stores	-0.8	3.0	-0.1	5.8	1.4
Healthcare	**-0.8**	**1.6**	**-0.9**	**8.6**	**10.8**
Financials	**0.8**	**-0.7**	**0.7**	**-20.4**	**-20.2**
Banks	0.5	-1.1	0.7	-28.7	-28.7
Financial Services	1.7	0.1	1.0	-9.7	-8.1
Insurance	0.3	-0.8	0.4	-15.3	-16.0
Real Estate	**1.9**	**3.2**	**1.7**	**-11.2**	**-13.9**
Technology	**-0.1**	**-3.4**	**-0.7**	**27.9**	**33.3**
Telecommunications	**0.1**	**0.6**	**-0.2**	**-2.0**	**-5.6**
Utilities	**1.0**	**3.6**	**1.7**	**-3.3**	**-6.5**

Notes: Returns shown are for Datastream sector indices versus the total market index. Past performance is no guarantee of future results.
Source: Refinitiv Datastream and Invesco

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Figure 5 – 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%**	↓	**45%**			
Government	30%	10-50%	↓	15%			
US	10%		↓	4%			
Europe ex-UK (Eurozone)	8%		↑	2%			
UK	2%		↓	0%			
Japan	8%			5%			
Emerging Markets	2%			4%			
Corporate IG	10%	0-20%		20%			
US Dollar	5%		↓	5%			
Euro	2%		↑	3%			
Sterling	1%			4%			
Japanese Yen	1%		↑	4%			
Emerging Markets	1%		↑	4%			
Corporate HY	5%	0-10%	↑	10%			
US Dollar	4%		↑	8%			
Euro	1%		↑	2%			
Equities	**40%**	**20-60%**	↑	**30%**			
US	24%			14%			
Europe ex-UK	6%		↑	5%			
UK	3%			3%			
Japan	3%		↑	6%			
Emerging Markets	4%		↓	2%			
Real Estate	**8%**	**0-16%**	↑	**15%**			
US	2%			2%			
Europe ex-UK	2%		↑	4%			
UK	1%		↑	3%			
Japan	2%		↓	4%			
Emerging Markets	1%		↓	2%			
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 (including effect of hedging)			
USD	49%	↓	38%
EUR	20%	↑	18%
GBP	7%	↓	11%
JPY	15%	↑	21%
EM	8%	↓	12%
Total	**100%**		**100%**

Notes: This is a theoretical portfolio and is for illustrative purposes only. See the latest The Big Picture document for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. Arrows indicate the direction of the most recent changes.
Source: Invesco

Figure 6 – Model allocations for global sectors

	Neutral	Invesco	
Energy	**4.2%**	**Neutral**	↓
Basic Materials	**4.2%**	**Neutral**	
Basic Resources	2.3%	Underweight	
Chemicals	2.0%	Overweight	
Industrials	**12.4%**	**Underweight**	
Construction & Materials	1.5%	Underweight	
Industrial Goods & Services	10.9%	Underweight	
Consumer Discretionary	**14.5%**	**Underweight**	
Automobiles & Parts	2.1%	Underweight	↓
Media	1.3%	Underweight	
Retailers	5.4%	Neutral	
Travel & Leisure	1.9%	Underweight	
Consumer Products & Services	3.9%	Neutral	↑
Consumer Staples	**7.4%**	**Overweight**	
Food, Beverage & Tobacco	4.7%	Overweight	
Personal Care, Drug & Grocery Stores	2.7%	Overweight	
Healthcare	**11.0%**	**Neutral**	
Financials	**14.7%**	**Neutral**	
Banks	6.7%	Overweight	
Financial Services	4.4%	Neutral	
Insurance	3.6%	Underweight	
Real Estate	**3.9%**	**Overweight**	
Technology	**19.2%**	**Overweight**	
Telecommunications	**4.9%**	**Neutral**	
Utilities	**3.6%**	**Neutral**	↑

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 for more details.
Source: Refinitiv Datastream and Invesco

Appendix

Methodology for asset allocation, expected returns and optimal portfolios

Portfolio construction process

The optimal portfolios are theoretical and not real. We use optimisation processes to guide our allocations around "neutral" and within prescribed policy ranges based on our estimations of expected returns and using historical covariance information. This guides the allocation to global asset groups (equities, government bonds etc.), which is the most important level of decision. For the purposes of this document the optimal portfolios are constructed with a one-year horizon.

Which asset classes?

We look for investibility, size and liquidity. We have chosen to include: equities, bonds (government, corporate investment grade and corporate high-yield), REITs to represent real estate, commodities and cash (all across a range of geographies). We use cross-asset correlations to determine which decisions are the most important.

Neutral allocations and policy ranges

We use market capitalisation in USD for major benchmark indices to calculate neutral allocations. For commodities, we use industry estimates for total ETP market cap + assets under management in hedge funds + direct investments. We use an arbitrary 5% for the combination of cash and gold. We impose diversification by using policy ranges for each asset category (the range is usually symmetric around neutral).

Expected/projected returns

The process for estimating expected returns is based upon yield (except commodities, of course). After analysing how yields vary with the economic cycle, and where they are situated within historical ranges, we forecast the direction and amplitude of moves over the next year. Cash returns are calculated assuming a straight-line move in short term rates towards our targets (with, of course, no capital gain or loss). Bond returns assume a straight-line progression in yields, with capital gains/losses predicated upon constant maturity (effectively supposing constant turnover to achieve that). Forecasts of corporate investment-grade and high-yield spreads are based upon our view of the economic cycle (as are forecasts of credit losses). Coupon payments are added to give total returns. Equity and REIT returns are based on dividend growth assumptions. We calculate total returns by applying those growth assumptions and adding the forecast dividend yield. No such metrics exist for commodities; therefore, we base our projections on US CPI-adjusted real prices relative to their long-term averages and views on the economic cycle. All expected returns are first calculated in local currency and then, where necessary, converted into other currency bases using our exchange rate forecasts.

Optimising the portfolio

Using a covariance matrix based on monthly local currency total returns for the last 5 years and we run an optimisation process that maximises the Sharpe Ratio. Another version maximises Return subject to volatility not exceeding that of our Neutral Portfolio. The optimiser is based on the Markowitz model.

Currency hedging

We adopt a cautious approach when it comes to currency hedging as currency movements are notoriously difficult to accurately predict and sometimes hedging can be costly. Also, some of our asset allocation choices are based on currency forecasts. We use an amalgam of central bank rate forecasts, policy expectations and real exchange rates relative to their historical averages to predict the direction and amplitude of currency moves.

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Definitions of data and benchmarks for Figure 3

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 Barclays Bloomberg emerging markets sovereign US dollar bond index.

Corporate investment grade (IG) bonds: Bank of America Merrill Lynch investment grade corporate bond total return indices, except for in emerging markets where we use the Barclays Bloomberg emerging markets corporate US dollar bond index.

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

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