

## Applied philosophy

### Tighten until something breaks

**When central banks tighten, something tends to break. Business models take time to adjust to a higher interest rate environment, thus the faster the tightening, the more likely that accidents happen, in our opinion. Higher financing costs can also make certain business models unsustainable, which looks evident in the banks sector. Although we think the probability of a large-scale crisis is low for now, an increasingly difficult macro environment and pressure on margins will be major headwinds for the sector.**

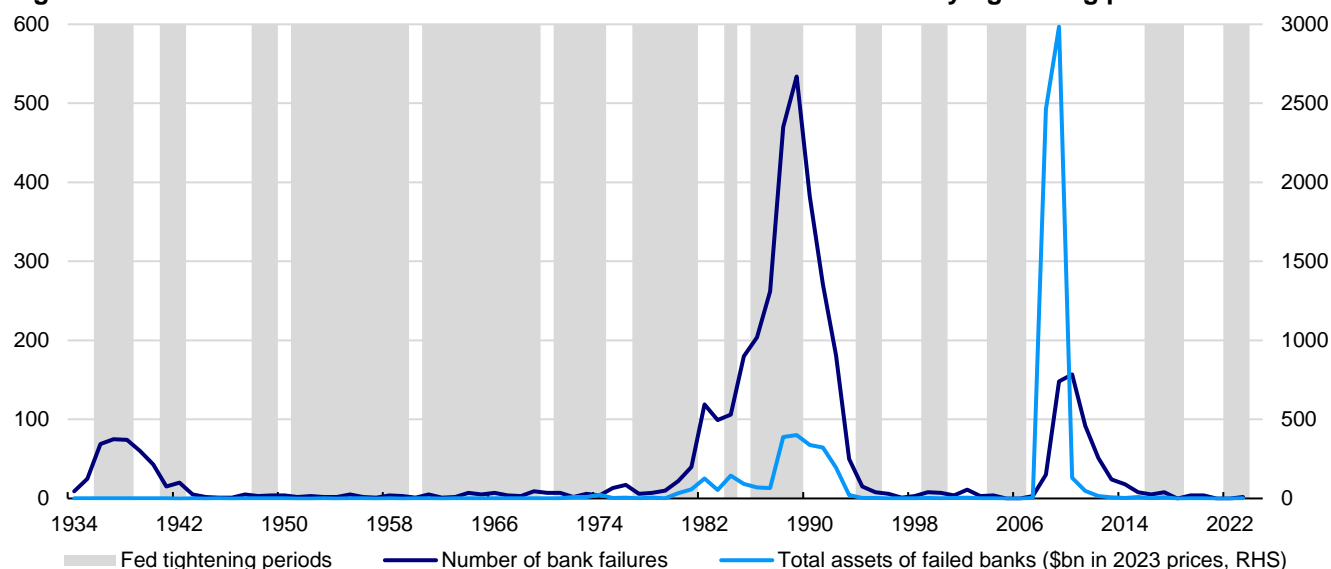
We think it is not coincidence that banks have hit turbulence around the one-year anniversary of the first rate hike in the current monetary tightening cycle by the US Federal Reserve (Fed). After a long period of ultra-loose monetary policy in not just the US, but in most countries around the world, a sharp rise in interest rates has exposed business models that are no longer profitable when financing costs are higher.

In our view, it is telling that the first bank to fail this year, Silicon Valley Bank, was involved in an area that was hit first by rapidly rising interest rates. The next domino to fall was Signature Bank, also connected to the cryptocurrency world, while 11 of the largest US banks deposited \$30bn into First Republic in an attempt to restore confidence. This series of events sent shockwaves through the banks sector and raised concerns over uninsured deposits and high potential losses in banks' securities portfolios.

In the meantime, Credit Suisse was rocked by comments by its largest shareholders, the Saudi National Bank, when they stated that they will not raise their investment in the bank citing regulatory limits (they want to avoid the regulatory burdens that come when a shareholding reaches 10%). This followed the delayed release of their annual report on 14th March 2023, which showed an increase in customer outflows to SFr 110bn in the fourth quarter of 2022. PricewaterhouseCoopers, their auditor, has also included an "adverse opinion" on the effectiveness of the bank's internal controls over its reporting. In the current environment of heightened sensitivity to loss of deposits after the collapse of several US banks, this drove a significant negative response from investors. In the end, a merger with UBS resolved the immediate threat and allowed financial markets to stabilise.

Although these incidents look well-contained for now, considering that they are relatively small (combined total assets of \$1.1tn as of end-2022 compared to \$166tn for the broader financials sector based on Datastream World indices), we cannot rule out further incidents in the sector as long as interest rates remain high (the increasing pressure on Deutsche Bank, for example). Nevertheless, it shows the risk of unintended consequences when central banks make such abrupt changes in policy. It may also make them more cautious about further tightening, especially if their mandates require them to maintain financial stability alongside reaching their inflation targets.

**Figure 1 – Bank failures in the United States and Federal Reserve monetary tightening periods since 1934**



Note: Data as of 21<sup>st</sup> March 2023. The chart shows the total number of bank failures per year since 1934 in the United States based on Federal Deposit Insurance Corporation data and the total assets of those banks. Total assets are expressed in 2023 prices by deflating with the US consumer price index. Shaded areas indicate years during which the US Federal Reserve raised its target rates or their equivalents. Source: Federal Deposit Insurance Corporation, Global Financial Data, Refinitiv Datastream, Invesco

How would we know that another financial crisis is brewing? First, monetary tightening does not automatically lead to financial crises; it is necessary, but not sufficient. As **Figure 1** shows, not all Fed tightening cycles were followed by a large number of bank failures in the United States based on data from the Federal Deposit Insurance Corporation. There were only three periods between 1934 and 2022 when rate rises were followed by systemic financial crises. Interestingly, the largest number of total bank failures were recorded during the Savings & Loans Crisis (S&L Crisis) in the 1980s, but those banks were relatively small in terms of their total assets. It seems that the same applies to the wave of bank failures following the Great Depression in the 1930s. What made the Global Financial Crisis (GFC) in 2008 so dangerous was not the sheer number of financial institutions that experienced difficulties, but their importance to the functioning of financial markets.

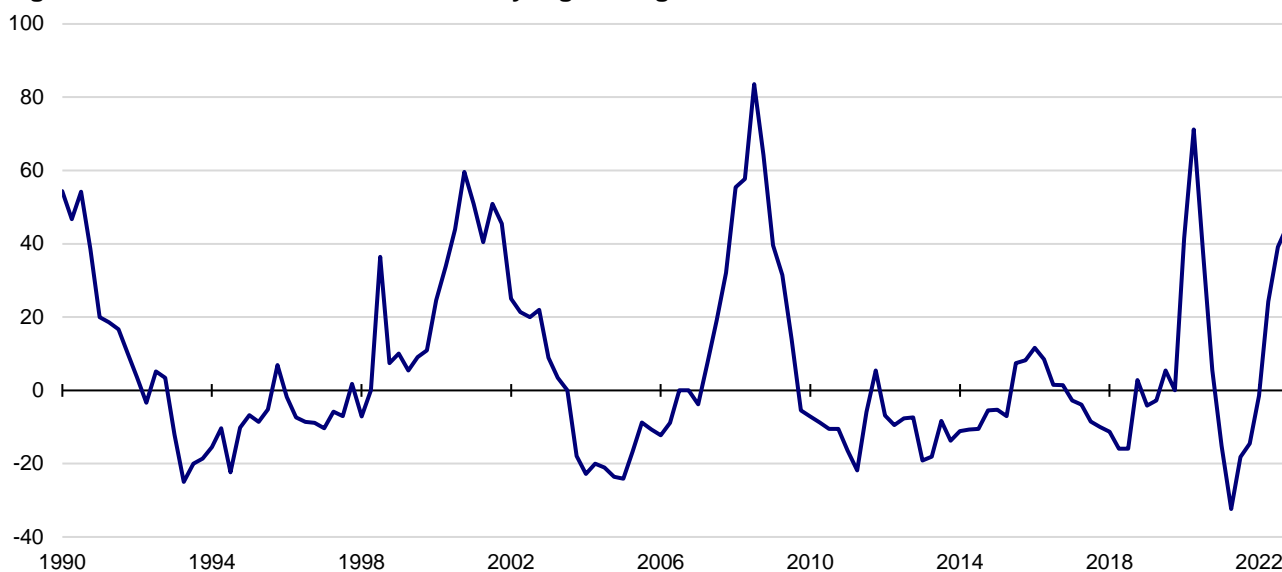
Second, serious crises usually followed periods of deregulation. For example, most banking regulations that we take for granted today did not exist in the 1920s. The S&L Crisis was also followed by a wave of deregulation allowing thrifts to offer a wider range of products and loosened financial reporting rules. By the early 2000s, banks were allowed to combine their investment and commercial banking operations, which contributed to the use of novel financial instruments that led to the GFC in 2008. More recently, although smaller banks were excluded from the strictest measures of oversight in 2018 in the US, the largest banks are still subject to regular stress tests, while most of the international regulations that were tightened

after the GFC are still in place.

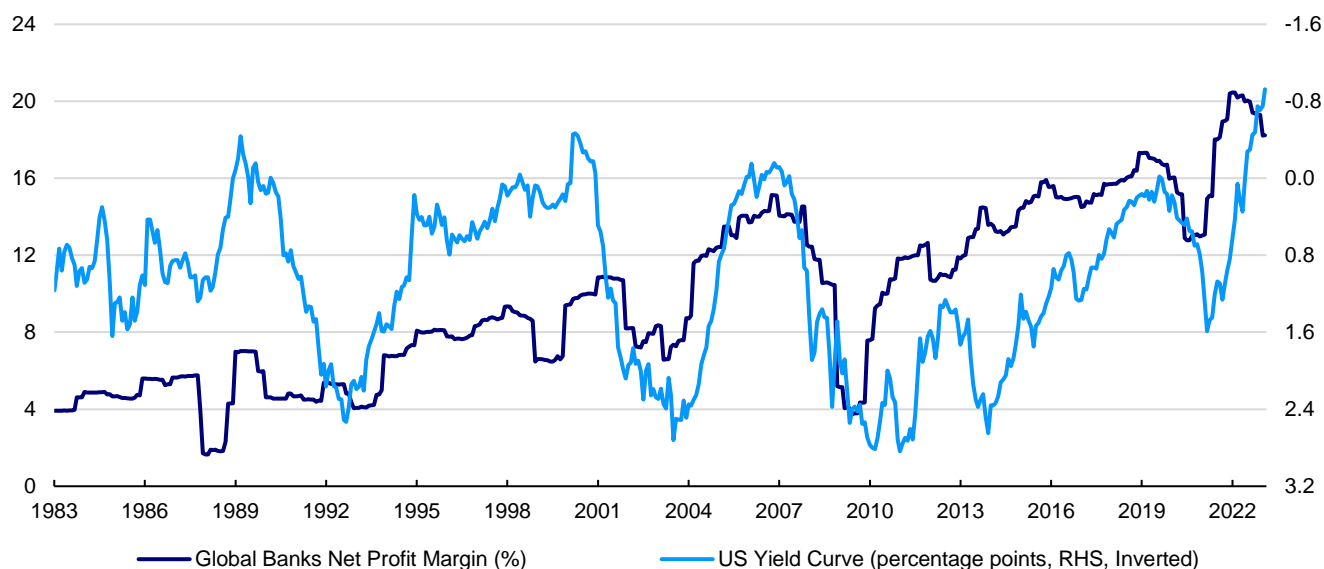
Third, banking crises were preceded in the past by loosening lending standards, which increased revenue growth and profitability by allowing banks to lend to riskier borrowers and charge them higher rates. This was frequently combined with new methods to reduce risk or compete for customers. For example, before the S&L crisis, lenders offered mortgages on low rates and interest-bearing checking accounts to compete for customers, which became unsustainable as rising interest rates squeezed profitability. Also, securitising mortgages seemed like sensible risk management in the early 2000s, but it turned out to be just a way of spreading issues more widely after a housing downturn in the US reduced the value of those instruments causing a crisis of confidence in the banking system. For now, we see neither financial engineering causing problems, nor a loosening of lending standards (see **Figure 2**). In fact, we think that recent bank failures will make the sector more conservative, and we expect lending volumes and standards to remain tight or even tighten further.

Finally, although banking relies on an asset-liability mismatch (for example, long duration loans financed by deposits), absent of a serious panic, this is unlikely to become a major issue. Unless banks are forced to cover major outflows, the \$620bn of unrealised losses on the securities holdings at US banks at the end of 2022 will remain an accounting issue. Most of those securities are also in US Treasuries and Mortgage-Backed Securities with an implicit US government guarantee and are unlikely to face the same

**Figure 2 – US Senior Loan Officer Survey Tightening Standards for Commercial and Industrial Loans**



Notes: Data as of 28<sup>th</sup> February 2023. The chart shows the net percentage of senior loan officers reporting tightening standards for large- and medium-sized firms in the United States. The data series starts in May 1990.  
Source: US Federal Reserve, Refinitiv Datastream, Invesco

**Figure 3 – Global banks sector net profit margin vs US yield curve**


Notes: Data as at 28<sup>th</sup> February 2023. **Past performance is no guarantee of future results.** We use the Datastream World Banks Index to represent the global banks sector. The yield curve is calculated using the redemption yield on the 10-year minus the 2-year Datastream United States Treasury Benchmark Bond.

Source: Refinitiv Datastream and Invesco

downgrades as Collateralised Debt Obligations in 2007-08, for example. Also, we think that the recent rally in sovereign debt will have reduced the total amount of unrealised losses.

For the moment, we think the probability of a serious banking crisis is low despite a sharp rise in interest rates. In our view, absent another energy or supply chain crisis, the global economy will avoid the toxic combination of high inflation and rising unemployment that contributed to the large number of bank failures in the 1930s and 1980s. Deregulation has been limited and lending standards have not loosened meaningfully.

However, the banking industry relies on confidence and when that evaporates, a run on deposits can quickly turn a liquidity crisis into a solvency crisis. In our view, these deposit withdrawals can also happen faster than in the past with social media and online banking giving regulators and central banks less time to react to stabilise the situation. This makes the positions of individual banks more fragile.

We also think that banks will face an increasingly adverse macroeconomic environment even if inflation moderates further allowing central banks to pause tightening policy (see [The Big Picture](#) for more detail). Rising interest rates have been a tailwind for banks so

far, as they were able to increase lending rates to customers, but that may be reaching the limits of affordability.

At the same time, deposit rates have remained relatively low thus increasing bank margins, though we think that will change especially if deposits fall. Consumers have been using up their pandemic-era excess savings to soften the impact of high inflation and that has driven upside surprises in economic data. However, that potentially means lower deposits, which may put pressure on banks to raise deposit rates as competition for customers increases, which can compress margins.

Net profit margins of global banks have been under pressure for the last 12 months based on the Datastream World Banks index (**Figure 3**). That partly reflects the slowdown in investment banking, but we cannot shake the feeling that sector outperformance has been increasingly detached from fundamentals. In the past, net margins peaked around the time the US yield curve inverted, which also appears to be the case this time. We think that a potentially more difficult operating environment coupled with increasing fragility will make it unlikely that the sector will outperform and therefore we remain Underweight in our model sector allocation.

**Figure 4 – Asset class total returns (% annualised)**

Data as at 24/03/2023	Index	Current Level/Ry	Total Return (USD, %)					Total Return (Local Currency, %)				
			1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Equities</b>												
World	MSCI	625	1.5	-0.2	3.7	3.7	-9.7	1.2	-0.8	3.6	3.6	-8.0
Emerging Markets	MSCI	972	2.2	0.3	2.0	2.0	-11.6	1.8	-0.1	2.1	2.1	-7.6
China	MSCI	65	2.9	0.9	2.3	2.3	-7.7	2.9	0.6	2.7	2.7	-6.3
US	MSCI	3770	1.4	0.0	4.0	4.0	-11.5	1.4	0.0	4.0	4.0	-11.5
Europe	MSCI	1813	2.2	-1.2	5.4	5.4	-1.2	1.1	-3.2	4.4	4.4	2.4
Europe ex-UK	MSCI	2240	2.3	-0.5	6.4	6.4	-0.3	1.2	-2.5	5.8	5.8	2.0
UK	MSCI	1083	1.8	-3.4	1.9	1.9	-4.2	1.1	-5.7	0.2	0.2	3.3
Japan	MSCI	3277	0.9	2.6	4.5	4.5	-6.6	-0.2	-1.7	3.4	3.4	0.0
<b>Government Bonds</b>												
World	BofA-ML	2.68	0.8	4.8	3.7	3.7	-8.6	0.2	3.2	3.3	3.3	-5.8
Emerging Markets	BBloom	7.98	1.0	1.2	2.1	2.1	-7.6	1.0	1.2	2.1	2.1	-7.6
China	BofA-ML	2.69	0.3	1.7	2.0	2.0	-3.9	0.2	0.5	0.7	0.7	3.6
US (10y)	Datastream	3.38	0.5	5.1	5.1	5.1	-6.0	0.5	5.1	5.1	5.1	-6.0
Europe	BofA-ML	2.81	1.3	5.1	4.1	4.1	-13.0	0.2	2.9	3.2	3.2	-11.0
Europe ex-UK (EMU, 10y)	Datastream	2.12	1.2	6.0	5.7	5.7	-13.5	0.1	3.8	4.9	4.9	-11.5
UK (10y)	Datastream	3.15	1.0	6.7	6.6	6.6	-17.6	0.2	4.2	4.9	4.9	-11.2
Japan (10y)	Datastream	0.29	1.0	6.6	5.0	5.0	-3.9	0.0	2.1	3.9	3.9	2.8
<b>IG Corporate Bonds</b>												
Global	BofA-ML	4.89	0.9	2.7	3.1	3.1	-6.4	0.6	2.1	2.9	2.9	-5.2
Emerging Markets	BBloom	7.72	0.2	1.1	2.3	2.3	-4.6	0.2	1.1	2.3	2.3	-4.6
China	BofA-ML	3.53	0.3	1.6	2.1	2.1	-4.8	0.1	0.4	0.8	0.8	2.6
US	BofA-ML	5.23	0.8	2.6	3.3	3.3	-4.8	0.8	2.6	3.3	3.3	-4.8
Europe	BofA-ML	4.06	1.6	3.1	2.9	2.9	-9.3	0.5	1.0	2.0	2.0	-7.3
UK	BofA-ML	5.37	1.1	4.1	5.3	5.3	-16.4	0.4	1.6	3.6	3.6	-9.9
Japan	BofA-ML	0.75	1.1	5.3	2.2	2.2	-7.1	0.0	0.9	1.2	1.2	-0.6
<b>HY Corporate Bonds</b>												
Global	BofA-ML	9.03	0.5	-0.1	1.9	1.9	-5.1	0.2	-0.6	1.7	1.7	-4.4
US	BofA-ML	8.94	0.3	-0.2	1.8	1.8	-4.5	0.3	-0.2	1.8	1.8	-4.5
Europe	BofA-ML	7.68	1.3	0.8	2.8	2.8	-7.0	0.2	-1.3	1.9	1.9	-4.9
<b>Cash (Overnight LIBOR)</b>												
US		4.81	0.1	0.4	1.0	1.0	2.7	0.1	0.4	1.0	1.0	2.7
Euro Area		2.97	0.9	2.2	1.0	1.0	-1.5	0.1	0.2	0.5	0.5	0.7
UK		4.36	0.5	2.7	2.0	2.0	-5.1	0.1	0.3	0.9	0.9	2.3
Japan		-0.10	0.8	4.4	0.3	0.3	-6.5	0.0	0.0	0.0	0.0	-0.1
<b>Real Estate (REITs)</b>												
Global	FTSE	1489	-1.3	-6.9	-3.5	-3.5	-21.7	-2.4	-8.8	-4.3	-4.3	-19.9
Emerging Markets	FTSE	1314	0.8	-2.3	-2.6	-2.6	-15.0	-0.3	-4.3	-3.4	-3.4	-13.0
US	FTSE	2716	-1.2	-8.3	-3.2	-3.2	-21.8	-1.2	-8.3	-3.2	-3.2	-21.8
Europe ex-UK	FTSE	1949	-5.4	-13.2	-9.5	-9.5	-39.2	-6.4	-15.0	-10.2	-10.2	-37.9
UK	FTSE	686	-3.1	-9.7	-4.9	-4.9	-37.4	-3.8	-11.9	-6.5	-6.5	-32.5
Japan	FTSE	2073	-0.6	-0.2	-3.5	-3.5	-13.7	-1.7	-4.4	-4.4	-4.4	-7.7
<b>Commodities</b>												
All	GSCI	3177	1.5	-4.7	-9.1	-9.1	-19.6	-	-	-	-	-
Energy	GSCI	525	2.3	-7.8	-14.0	-14.0	-24.0	-	-	-	-	-
Industrial Metals	GSCI	1660	2.9	0.7	-0.9	-0.9	-24.1	-	-	-	-	-
Precious Metals	GSCI	2237	1.0	9.8	7.7	7.7	-0.4	-	-	-	-	-
Agricultural Goods	GSCI	539	-0.4	-2.0	-3.7	-3.7	-13.7	-	-	-	-	-
<b>Currencies (vs USD)*</b>												
EUR		1.08	0.9	2.0	0.5	0.5	-2.1	-	-	-	-	-
JPY		130.70	0.9	4.4	0.3	0.3	-6.4	-	-	-	-	-
GBP		1.22	0.7	2.4	1.7	1.7	-7.3	-	-	-	-	-
CHF		1.09	0.6	2.3	0.5	0.5	1.1	-	-	-	-	-
CNY		6.87	0.3	1.3	0.4	0.4	-7.3	-	-	-	-	-

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 5 – Global equity sector total returns relative to market (%)**

Data as at 24/03/2023	Global				
	1w	1m	QTD	YTD	12m
<b>Energy</b>	<b>0.5</b>	<b>-3.5</b>	<b>-7.9</b>	<b>-7.9</b>	<b>4.1</b>
<b>Basic Materials</b>	<b>0.0</b>	<b>-1.3</b>	<b>-2.2</b>	<b>-2.2</b>	<b>-4.3</b>
Basic Resources	0.0	-1.1	-3.0	-3.0	-5.5
Chemicals	0.1	-1.6	-1.0	-1.0	-2.4
<b>Industrials</b>	<b>-0.4</b>	<b>-0.7</b>	<b>-0.5</b>	<b>-0.5</b>	<b>3.7</b>
Construction & Materials	-1.2	-1.5	3.0	3.0	6.4
Industrial Goods & Services	-0.3	-0.6	-1.0	-1.0	3.4
<b>Consumer Discretionary</b>	<b>0.3</b>	<b>0.5</b>	<b>5.6</b>	<b>5.6</b>	<b>-3.3</b>
Automobiles & Parts	1.0	-2.0	13.5	13.5	-14.7
Media	1.3	-1.0	6.0	6.0	-8.9
Retailers	-0.8	0.2	0.3	0.3	-10.8
Travel & Leisure	-1.0	-0.8	3.6	3.6	9.4
Consumer Products & Services	1.4	3.6	8.0	8.0	12.5
<b>Consumer Staples</b>	<b>0.2</b>	<b>1.3</b>	<b>-3.3</b>	<b>-3.3</b>	<b>10.7</b>
Food, Beverage & Tobacco	0.0	1.2	-2.6	-2.6	12.1
Personal Care, Drug & Grocery Stores	0.6	1.4	-4.9	-4.9	8.0
<b>Healthcare</b>	<b>0.1</b>	<b>0.4</b>	<b>-6.3</b>	<b>-6.3</b>	<b>3.8</b>
<b>Financials</b>	<b>-0.8</b>	<b>-7.3</b>	<b>-7.2</b>	<b>-7.2</b>	<b>-3.1</b>
Banks	-1.3	-9.0	-8.1	-8.1	-4.6
Financial Services	-0.7	-5.3	-5.5	-5.5	-4.8
Insurance	0.4	-6.0	-7.7	-7.7	4.1
<b>Real Estate</b>	<b>-2.2</b>	<b>-4.3</b>	<b>-5.8</b>	<b>-5.8</b>	<b>-11.2</b>
<b>Technology</b>	<b>1.1</b>	<b>8.4</b>	<b>15.0</b>	<b>15.0</b>	<b>-2.5</b>
<b>Telecommunications</b>	<b>-0.4</b>	<b>1.4</b>	<b>2.3</b>	<b>2.3</b>	<b>2.1</b>
<b>Utilities</b>	<b>-1.3</b>	<b>0.8</b>	<b>-6.4</b>	<b>-6.4</b>	<b>6.4</b>

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

**Figure 6a – US factor index total returns (%)**

Data as at 24/03/2023	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Growth</b>	1.2	-0.1	8.0	8.0	-6.1	-0.2	-0.3	4.0	4.0	5.1
<b>Low volatility</b>	0.8	-2.3	-3.6	-3.6	-3.0	-0.6	-2.4	-7.2	-7.2	8.5
<b>Price momentum</b>	1.6	-4.0	-4.3	-4.3	-9.4	0.2	-4.2	-7.9	-7.9	1.4
<b>Quality</b>	1.4	-2.8	2.4	2.4	-4.6	0.0	-2.9	-1.4	-1.4	6.8
<b>Size</b>	0.5	-9.5	-2.0	-2.0	-12.9	-0.9	-9.7	-5.6	-5.6	-2.6
<b>Value</b>	0.5	-12.7	-6.7	-6.7	-17.2	-0.9	-12.9	-10.2	-10.2	-7.3
<b>Market</b>	1.4	0.2	3.9	3.9	-10.6					
<b>Market - Equal-Weighted</b>	0.8	-5.2	-1.4	-1.4	-9.9					

Notes: All indices are subsets of the S&P 500 index, they are rebalanced monthly, use data in US dollars and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in US dollars. Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the S&P 500 index. **Past performance is no guarantee of future results.**

Source: Refinitiv Datastream and Invesco

**Figure 6b – European factor index total returns relative to market (%)**

Data as at 24/03/2023	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Growth</b>	0.9	-3.4	4.3	4.3	-11.8	-0.1	0.1	0.0	0.0	-12.0
<b>Low volatility</b>	1.4	-1.3	5.0	5.0	0.4	0.4	2.2	0.7	0.7	0.2
<b>Price momentum</b>	1.1	-5.7	-0.9	-0.9	-10.3	0.1	-2.4	-4.9	-4.9	-10.5
<b>Quality</b>	0.7	-4.0	3.9	3.9	-6.4	-0.3	-0.6	-0.3	-0.3	-6.6
<b>Size</b>	-0.4	-6.4	1.7	1.7	-9.7	-1.3	-3.1	-2.4	-2.4	-9.9
<b>Value</b>	-2.2	-11.1	0.4	0.4	-6.5	-3.1	-7.9	-3.7	-3.7	-6.7
<b>Market</b>	1.0	-3.5	4.2	4.2	0.3					
<b>Market - Equal-Weighted</b>	0.2	-5.4	3.0	3.0	-6.9					

Notes: All indices are subsets of the STOXX 600 index, they are rebalanced monthly, use data in euros and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in euros; Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the STOXX 600 index. **Past performance is no guarantee of future results.**

Source: Refinitiv Datastream and Invesco

**Figure 7 – Model asset allocation**

	Neutral	Policy Range	Allocation	Position vs Neutral
<b>Cash Equivalents</b>	<b>5%</b>	<b>0-10%</b>	<b>10%</b>	
Cash	2.5%		10%	
Gold	2.5%		0%	
<b>Bonds</b>	<b>40%</b>	<b>10-70%</b>	<b>48%</b>	
Government	25%	10-40%	25%	
US	8%		12%	
Europe ex-UK (Eurozone)	7%		5%	
UK	1%		2%	
Japan	7%		2%	
Emerging Markets	2%		4%	
China**	0.2%		0%	
Corporate IG	10%	0-20%	15%	
US Dollar	5%		9%	
Euro	2%		2%	
Sterling	1%		2%	
Japanese Yen	1%		0%	
Emerging Markets	1%		2%	
China**	0.1%		0%	
Corporate HY	5%	0-10%	8%	
US Dollar	4%		6%	
Euro	1%		2%	
<b>Equities</b>	<b>45%</b>	<b>25-65%</b>	<b>34%</b>	
US	25%		12%	
Europe ex-UK	7%		5%	
UK	4%		5%	
Japan	4%		4%	
Emerging Markets	5%		8%	
China**	2%		4%	
<b>Real Estate</b>	<b>8%</b>	<b>0-16%</b>	<b>8%</b>	
US	2%		3%	
Europe ex-UK	2%		1%	
UK	1%		2%	
Japan	2%		1%	
Emerging Markets	1%		1%	
<b>Commodities</b>	<b>2%</b>	<b>0-4%</b>	<b>0%</b>	
Energy	1%		0%	
Industrial Metals	0.3%		0%	
Precious Metals	0.3%		0%	
Agriculture	0.3%		0%	
<b>Total</b>	<b>100%</b>		<b>100%</b>	
<b>Currency Exposure (including effect of hedging)</b>				
USD	48%		45%	
EUR	20%		18%	
GBP	7%		14%	
JPY	15%		10%	
EM	9%		15%	
<b>Total</b>	<b>100%</b>		<b>100%</b>	

Notes: \*\*China is included in Emerging Markets allocations. 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 8 – Model allocations for Global sectors**

	<b>Neutral</b>	<b>Invesco</b>	<b>Preferred Region</b>
<b>Energy</b>	<b>8.1%</b>	<b>Underweight</b>	<b>EM</b>
<b>Basic Materials</b>	<b>4.5%</b>	<b>Overweight</b>	<b>Europe</b>
Basic Resources	2.6%	Overweight	Europe
Chemicals	1.9%	Neutral	Japan
<b>Industrials</b>	<b>13.1%</b>	<b>Neutral</b>	<b>Japan</b>
Construction & Materials	1.5%	Underweight	US
Industrial Goods & Services	11.6%	Neutral	Japan
<b>Consumer Discretionary</b>	<b>13.6%</b>	<b>Overweight</b>	<b>Europe</b>
Automobiles & Parts	2.3%	Neutral	Europe
Media	1.0%	Neutral	Japan
Retailers	4.6%	Overweight	Europe
Travel & Leisure	2.0%	Underweight	EM
Consumer Products & Services	3.7%	Overweight	Europe
<b>Consumer Staples</b>	<b>6.7%</b>	<b>Overweight</b>	<b>US</b>
Food, Beverage & Tobacco	4.4%	Overweight	US
Personal Care, Drug & Grocery Stores	2.3%	Overweight	Europe
<b>Healthcare</b>	<b>10.7%</b>	<b>Overweight</b>	<b>US</b>
<b>Financials</b>	<b>16.2%</b>	<b>Underweight</b>	<b>Japan</b>
Banks	7.9%	Underweight	Japan
Financial Services	5.2%	Underweight	EM
Insurance	3.1%	Neutral	Europe
<b>Real Estate</b>	<b>3.2%</b>	<b>Neutral</b>	<b>EM</b>
<b>Technology</b>	<b>16.5%</b>	<b>Overweight</b>	<b>US</b>
<b>Telecommunications</b>	<b>3.5%</b>	<b>Underweight</b>	<b>Japan</b>
<b>Utilities</b>	<b>3.8%</b>	<b>Underweight</b>	<b>Europe</b>

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

---

### Definitions of data and benchmarks for Figure 4

**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). From 1<sup>st</sup> January 2022, we use the Refinitiv overnight deposit rate for the euro, the British pound and the Japanese yen. The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1<sup>st</sup> 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 Bloomberg Barclays emerging markets aggregate government bond index.

**Corporate investment grade (IG) bonds:** Bank of America Merrill Lynch investment grade corporate bond total return indices. The emerging markets yields and returns are based on the Bloomberg Barclays emerging markets aggregate corporate 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

---

### Factor index definitions

We focus on relatively large-cap stocks, as we suspect that most investors will be conscious of liquidity constraints when implementing such strategies. We have chosen six factors, that we think cover the classic definitions used by most investors. We aim to capture roughly a fifth of the market in each of our factor indices using the historical constituents of the STOXX 600 since August 1999 and the S&P 500 since September 1989, with monthly rebalancing. All our rankings are based on data in euros for Europe and in US dollars for the US. All factor indices are equal-weighted. We use the following definitions:

**Growth:** stocks in both the top third based on their 5-year sales per share trend and the top-third based on their internal growth rate (the product of the 5-year average return on equity and the retention ratio).

**Low volatility:** stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months.

**Price momentum:** stocks in the top quintile based on their performance in the previous 12 months.

**Quality:** stocks in both the top third based on their return on invested capital and the top third based on their EBIT to EV ratio (earnings before interest and taxes to enterprise value). This follows Joel Greenblatt's "magic formula" from his 2005 book: The little book that beats the market.

**Size:** stocks in the bottom quintile based on their market value.

**Value:** stocks in the bottom quintile based on their price to book value ratios.

---

## Authors

**András Vig**

Multi-Asset Strategist

T. +44 (0)20 3370 1152

E. andras.vig@invesco.com

**Paul Jackson**

Global Head of Asset Allocation Research

T. +44 (0)20 3370 1172

E. paul.jackson@invesco.com

---

Telephone calls may be recorded

---

*Data as of 24<sup>th</sup> March 2023 unless stated otherwise.*

---

**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 intended only for Professional investors in Hong Kong, for Institutional Investors and/or Accredited Investors in Singapore, 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 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, for certain specific institutional investors in Malaysia upon request, for certain specific institutional investors in Indonesia and for qualified buyers in Philippines for informational purposes only. 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 may contain statements that are not purely historical in nature but are "forward-looking statements," which are based on certain assumptions of future events. Forward-looking statements are based on information available on the date hereof, and Invesco does not assume any duty to update any forward-looking statement. Actual events may differ from those assumed. There can be no assurance that forward-looking statements, including any projected returns, will materialize or that actual market conditions and/or performance results will not be materially different or worse than those presented.

All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. Investment involves risk. Please review all financial material carefully before investing. The opinions expressed are based on current market conditions and are subject to change without notice. These opinions may differ from those of other Invesco investment professionals.

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 themselves 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 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, 45/F, Jardine House, 1 Connaught Place, 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.**

**Authors**

András Vig  
 Multi-Asset Strategist  
 Telephone +44(0)20 3370 1152  
[andras.vig@invesco.com](mailto:andras.vig@invesco.com)  
 London, EMEA

Paul Jackson  
 Global Head of Asset Allocation Research  
 Telephone +44(0)20 3370 1172  
[paul.jackson@invesco.com](mailto:paul.jackson@invesco.com)  
 London, EMEA

**Global Market Strategy Office**

Kristina Hooper  
 Chief Global Market Strategist  
[kristina.hooper@invesco.com](mailto:kristina.hooper@invesco.com)  
 New York, Americas

Tomo Kinoshita  
 Global Market Strategist, Japan  
[tomo.kinoshita@invesco.com](mailto:tomo.kinoshita@invesco.com)  
 Tokyo, Asia Pacific

Brian Levitt  
 Global Market Strategist, Americas  
[brian.levitt@invesco.com](mailto:brian.levitt@invesco.com)  
 New York, Americas

Talley Léger  
 Investment Strategist, Equities  
[talley.leger@invesco.com](mailto:talley.leger@invesco.com)  
 New York, Americas

Arnab Das  
 Global Market Strategist  
[arnab.das@invesco.com](mailto:arnab.das@invesco.com)  
 London, EMEA

Adam Burton  
 Senior Economist  
[adam.burton@invesco.com](mailto:adam.burton@invesco.com)  
 London, EMEA

Paul Jackson  
 Global Head of Asset Allocation Research  
[paul.jackson@invesco.com](mailto:paul.jackson@invesco.com)  
 London, EMEA

András Vig  
 Multi-Asset Strategist  
[andras.vig@invesco.com](mailto:andras.vig@invesco.com)  
 London, EMEA

David Chao  
 Global Market Strategist, Asia Pacific  
[david.chao@invesco.com](mailto:david.chao@invesco.com)  
 Hong Kong, Asia Pacific

Thomas Wu  
 Market Strategies Analyst, Asia Pacific  
[thomas.wu@invesco.com](mailto:thomas.wu@invesco.com)  
 Hong Kong, Asia Pacific

Ashley Oerth  
 Senior Investment Strategy Analyst  
[ashley.oerth@invesco.com](mailto:ashley.oerth@invesco.com)  
 London, EMEA

Cyril Birks  
 Global Thought Leadership Intern  
[cyril.birks@invesco.com](mailto:cyril.birks@invesco.com)  
 London, EMEA

\*Affiliated member

Telephone calls may be recorded.