Applied philosophy

Should we be worried about airlines?

The tragic crash of a Boeing 737 Max in Ethiopia has rocked the reputation of one of the largest aircraft manufacturers. It also threatens to disrupt airlines' businesses and expansion plans. So far, although airlines have underperformed global equities this year, this has not been the main driver. In our view, rising oil prices and declining margins limited returns. We think these headwinds have been priced in and dividend yields look attractive versus historical norms. We remain optimistic about global economic growth and therefore airlines and the broader travel & leisure sector.

The cosy duopoly of the airplane manufacturing industry has been thrown into turmoil after a Boeing 737 Max crashed in Ethiopia. This was the second such incident and was similar to another accident of that model in Indonesia in October last year. News like these are even more momentous, because we are living in an era of unparalleled safety for flying. The airplane manufacturing industry has been so successful at eliminating obvious sources of errors that extreme events are more probable even if accidents are increasingly rare. In other words, things rarely go wrong, but when they do, they go very wrong.

Boeing's share price swooned on the news and has materially diverged from Airbus' after moving in lockstep for most of the last two years. The collateral damage of this incident can be an industry that can ill-afford any headwind: airlines. Their razor-thin margins, highly unionised workforce and cut-throat competition among peers leaves little room for manoeuvre.

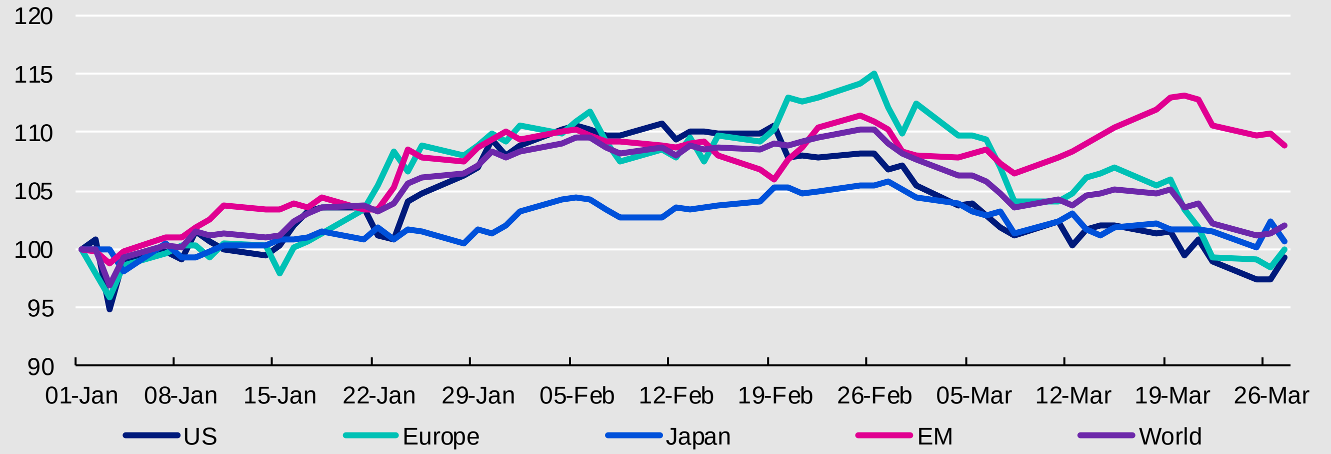
The first impact is logistical. As long as the planes are grounded, airlines have to either replace them with other models they already have, or lease planes to fly the routes on which they operated the 737 Max. The second impact is financial, because the longer the planes are grounded, the more expensive it becomes for airlines to maintain their normal schedule. They will probably seek financial compensation from Boeing for any extra costs and lost revenue generating opportunities. The final impact in our view is reputational. This applies both to Boeing and the airlines. Although passengers would prefer not to fly on a 737 Max until the issue is resolved, they generally just want to get to their destination and they may blame the airline if that is thwarted.

For now, airlines are not significantly exposed to any issues with the new model, although this will become more serious if resolution is not found within a few months. According to Boeing, as of 28th February 2019, 376 of these planes have been delivered and 4636 remain on order. The most exposed are two US-based airlines: Southwest with 31 planes delivered and American Airlines with 24. Based on annual reports, as of 31 December 2018, this represents less than 5% of available planes for these airlines, which suggests any near-term impact will be limited for the industry (assuming that others have even less exposure).

However, delays in deliveries of planes on order can prove trickier to work around. Southwest is the most exposed with 249 planes on order, closely followed by flydubai with 237. These two airlines are representative of the main customers of this particular model: low-cost and Asian airlines dominate the order book. Since these orders have a lead time measured in months if not years, they cannot necessarily be switched to, for example, the Airbus A320neo, the direct competitor of the 737 Max.

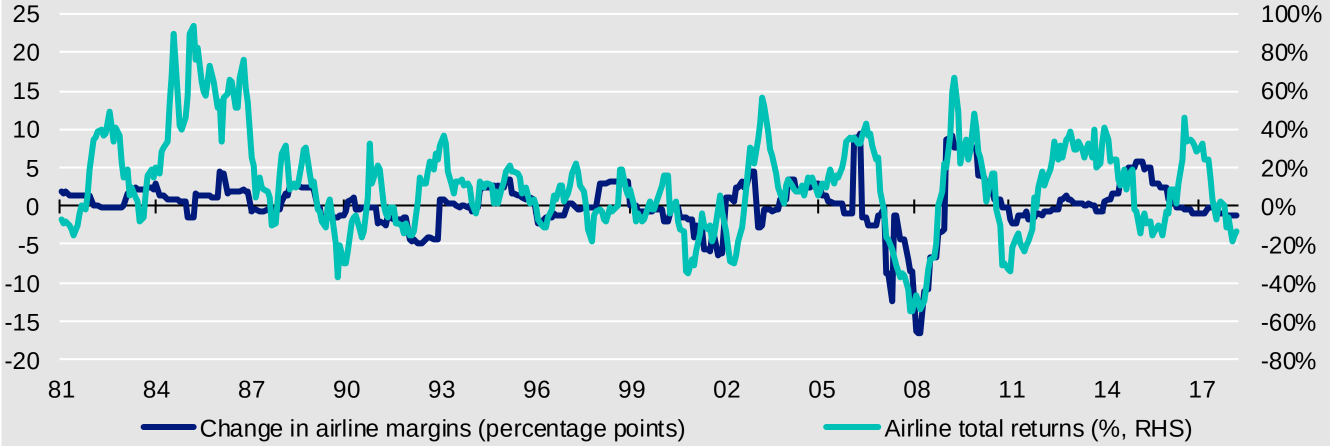
We cannot detect much of an impact of this incident in airline returns so far (**Figure 1**). The underperformance

Figure 1 – Airline total return indices year-to-date (rebased)



Notes: We use the Datastream Airline indices and show total returns in US dollar terms. All indices rebased to 100 on 31st December 2018. Data as at 27th March 2019. Past performance is not a guide to future returns. Source: Datastream and Invesco

Figure 2 – Change in Global airline EBITDA margins and year-on-year total returns since 1981



Notes: We use the Datastream World Airline index and show total returns in US dollar terms. We calculate EBITDA (Earnings Before Interest, Depreciation and Amortisation) margins by dividing EBITDA with Net Sales (both supplied by Worldscope). Data as at 28th February 2019. Past performance is not a guide to future returns. Source: Datastream and Invesco

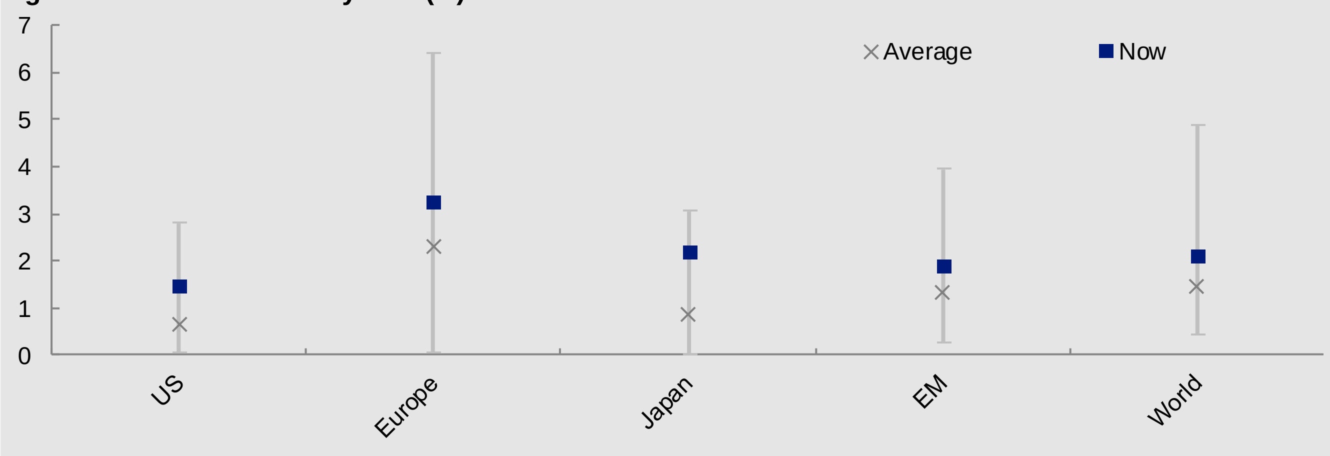
of airlines started earlier, mostly driven by rising oil prices, in our view, even if some of that exposure is hedged. Brent spot prices have risen by 33% this year, which is a significant headwind and probably explains why airlines returned only 2% in 2019 versus a 10.8% total return for global equities (in US dollar terms).

The bigger issue, we think, is the decline in margins (**Figure 2**). The year-on-year change in EBITDA margins has had a 40% correlation to annual total returns since 1981. Although we do not expect the pressure from fuel costs to materially decrease, we do not think it will worsen (see the latest The Big Picture). More worrying is the steady decline in passenger yields. According to data from the International Air Transport Association (IATA), global average passenger yields have been on a steady decline since 2012 mostly driven by lower economy class yields. The relentless price competition by low-cost carriers is probably the main cause, in our view. If yields do not improve, airlines will keep relying on volume growth to increase revenues.

So far, this has not been an issue as demand has been growing at a steady pace. IATA reported 6.5% growth in revenue passenger kilometres in the year to the end of February. Capacity (available seat kilometres) has expanded at roughly the same pace, so the industry does not have to grapple with too much supply for now. We expect demand to continue growing as long as the global economy keeps expanding at a decent pace. That is why a potential bottleneck in airplane manufacturing can be bad news in so far as it may restrict capacity expansion.

Having said that, potential bad news seems to be priced into sector dividend yields (**Figure 3**). Yields are higher than long-term averages in every region. Japanese and US airlines seem to offer the best value compared to their historical averages, but absolute yields are the highest in Europe. Considering that European airline margins have been the only ones improving in the last three years, this combination looks the most attractive to us.

Figure 3 – Airline dividend yields (%)



Notes: We show the dividend yields of Datastream airline indices. Data as at 27th March 2019. Source: Datastream and Invesco

What does this mean for our sector strategy? Does the broader travel & leisure sector still look attractive? After all, airlines comprise a significant part of the sector. As of the end of February, airlines made up 15% of the travel & leisure sector in the S&P 500, 29% of the sector in the Stoxx 600, 8.2% of the sector in the TOPIX and 33.5% in Datastream's EM travel & leisure index. Globally, they are 15% of the Datastream travel & leisure index.

If anything, our analysis of the impacts of the Boeing disruption puts our minds at ease about our sector allocation. We think our thesis of steady, but unspectacular global growth and improving global consumer confidence remains intact. Decent wage growth in the US and Europe and monetary and fiscal stimulus in China will boost disposable incomes. The high weighting of railway operators and theme parks in the Japanese travel & leisure sector gives us confidence that it may outperform, too. The Rugby World Cup is held in Japan this year, which should boost inbound tourism. We will keep all this in mind when we revise our sector allocation in our quarterly in April, but we remain Overweight for now.

Figure 4 – Asset class total returns

Data as at 27/03/2019	Index	Current Level/RY	Total Return (USD, %) 1w	1m	QTD	YTD	12m	Total Return (Local Currency, %) 1w	1m	QTD	YTD	12m
Equities												
World	MSCI	505	-0.9	0.2	11.5	11.5	2.8	-0.8	0.5	11.5	11.5	6.0
Emerging Markets	MSCI	1044	-2.2	-1.5	8.4	8.4	-9.4	-1.6	-0.7	8.4	8.4	-3.9
US	MSCI	2674	-0.7	0.5	12.7	12.7	9.5	-0.7	0.5	12.7	12.7	9.5
Europe	MSCI	1632	-1.7	0.5	10.6	10.6	-3.3	-1.2	1.4	10.9	10.9	5.2
Europe ex-UK	MSCI	1915	-1.9	0.5	10.1	10.1	-4.5	-1.2	1.3	11.9	11.9	4.4
UK	MSCI	1140	-1.3	0.5	12.0	12.0	0.1	-1.3	1.6	8.1	8.1	7.3
Japan	MSCI	3144	1.6	0.8	8.3	8.3	-6.1	0.6	0.3	8.9	8.9	-2.0
Government Bonds												
World	BofA-ML	1.09	0.9	1.4	1.9	1.9	-1.2	0.9	1.7	2.2	2.2	3.3
Emerging Markets	JPM	6.52	-2.2	-2.0	2.6	2.6	-7.9	-0.3	0.4	2.6	2.6	4.1
US (10y)	Datastream	2.37	1.3	2.8	3.4	3.4	6.4	1.3	2.8	3.4	3.4	6.4
Europe	Bofa-ML	0.62	0.4	1.2	2.3	2.3	-6.0	1.3	2.3	4.0	4.0	3.5
Europe ex-UK (EMU, 10y)	Datastream	-0.08	0.7	1.1	2.1	2.1	-2.6	1.6	2.3	3.8	3.8	7.3
UK (10y)	Datastream	1.01	1.3	1.4	6.3	6.3	-0.7	1.3	2.5	2.6	2.6	6.4
Japan (10y)	Datastream	-0.07	1.2	0.9	0.2	0.2	-2.9	0.3	0.4	0.8	0.8	1.3
IG Corporate Bonds												
Global	BofA-ML	2.87	0.8	1.8	4.3	4.3	1.5	1.0	2.2	4.5	4.5	4.6
US	BofA-ML	3.65	1.3	2.6	5.1	5.1	5.4	1.3	2.6	5.1	5.1	5.4
Europe	BofA-ML	0.90	-0.3	0.2	1.5	1.5	-7.1	0.6	1.4	3.2	3.2	2.4
UK	BofA-ML	2.63	0.7	1.5	8.4	8.4	-2.7	0.6	2.6	4.6	4.6	4.3
Japan	BofA-ML	0.36	1.1	0.7	-0.3	-0.3	-3.6	0.1	0.2	0.3	0.3	0.6
HY Corporate Bonds												
Global	BofA-ML	6.38	-0.1	0.6	6.3	6.3	2.8	0.1	0.8	6.5	6.5	4.7
US	BofA-ML	6.74	0.2	0.8	7.1	7.1	5.6	0.2	0.8	7.1	7.1	5.6
Europe	BofA-ML	3.97	-0.8	-0.2	3.4	3.4	-7.6	0.1	1.0	5.1	5.1	1.7
Cash (Overnight LIBOR)												
US		2.39	0.0	0.2	0.6	0.6	2.1	0.0	0.2	0.6	0.6	2.1
Euro Area		-0.47	-1.5	-1.1	-2.1	-2.1	-9.7	0.0	0.0	-0.1	-0.1	-0.5
UK		0.68	0.0	-0.8	3.6	3.6	-6.3	0.0	0.1	0.2	0.2	0.6
Japan		-0.10	0.2	0.4	-0.9	-0.9	-4.7	0.0	0.0	0.0	0.0	-0.1
Real Estate (REITs)												
Global	FTSE	1951	1.4	3.5	14.6	14.6	13.2	2.3	4.7	16.4	16.4	24.7
Emerging Markets	FTSE	2303	-1.1	4.8	13.6	13.6	-4.5	-0.2	6.0	15.4	15.4	5.2
US	FTSE	3102	2.1	3.0	15.3	15.3	23.3	2.1	3.0	15.3	15.3	23.3
Europe ex-UK	FTSE	3517	0.5	5.2	11.6	11.6	2.5	1.4	6.4	13.3	13.3	12.9
UK	FTSE	1390	-1.0	-0.3	14.9	14.9	-5.8	-1.1	0.8	10.9	10.9	1.0
Japan	FTSE	2823	3.2	6.0	12.3	12.3	12.3	2.2	5.5	13.0	13.0	17.2
Commodities												
All	GSCI	2537	-1.0	1.6	15.1	15.1	-2.9	-	-	-	-	-
Energy	GSCI	477	-1.5	2.0	24.4	24.4	-2.1	-	-	-	-	-
Industrial Metals	GSCI	1276	-1.3	-1.1	7.4	7.4	-5.3	-	-	-	-	-
Precious Metals	GSCI	1550	0.7	-0.9	2.0	2.0	-3.5	-	-	-	-	-
Agricultural Goods	GSCI	340	0.1	-0.4	-2.5	-2.5	-11.9	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.12	-1.5	-1.1	-1.9	-1.9	-9.3	-	-	-	-	-
JPY		110.52	0.2	0.4	-0.8	-0.8	-4.7	-	-	-	-	-
GBP		1.32	0.0	-1.1	3.6	3.6	-6.7	-	-	-	-	-
CHF		1.01	-0.2	0.7	-1.3	-1.3	-4.8	-	-	-	-	-
CNY		6.73	-0.5	-0.6	2.2	2.2	-6.6	-	-	-	-	-

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

Figure 5 – Equity sector total returns relative to local market (%)

Data as at 27/03/2019	US					Europe				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Oil & Gas	**-0.6**	**0.3**	**3.3**	**3.3**	**-7.6**	**-0.6**	**-0.4**	**0.2**	**0.2**	**9.5**
Materials	**-1.0**	**-2.4**	**-3.6**	**-3.6**	**-10.2**	**-0.6**	**-1.9**	**1.5**	**1.5**	**-2.1**
Basic Resources	1.8	-1.9	-0.3	-0.3	-20.0	0.5	-1.8	5.6	5.6	1.1
Chemicals	-1.8	-3.2	-5.7	-5.7	-8.6	-1.3	-1.8	-1.2	-1.2	-3.9
Industrials	**0.3**	**-3.8**	**2.4**	**2.4**	**-6.4**	**-1.0**	**-1.7**	**0.5**	**0.5**	**-4.0**
Construction & Materials	0.7	0.5	7.6	7.6	-9.0	-0.7	-0.2	2.5	2.5	-3.9
Industrial Goods & Services	0.4	-3.7	2.9	2.9	-5.8	-1.1	-2.2	0.0	0.0	-4.0
Consumer Discretionary	**0.6**	**1.8**	**1.8**	**1.8**	**2.4**	**0.1**	**-2.4**	**0.1**	**0.1**	**-6.7**
Automobiles & Parts	0.0	-6.4	0.3	0.3	-14.7	-0.9	-5.3	-2.7	-2.7	-23.1
Media	-1.2	1.7	2.6	2.6	3.0	-0.4	-2.6	-5.0	-5.0	4.3
Retail	0.7	2.8	0.7	0.7	6.7	1.0	1.2	5.8	5.8	9.6
Travel & Leisure	0.6	-1.0	-2.7	-2.7	-1.7	-0.3	-3.9	-5.7	-5.7	-9.3
Consumer Staples	**2.2**	**2.7**	**-1.5**	**-1.5**	**1.8**	**1.8**	**4.3**	**4.4**	**4.4**	**7.7**
Food & Beverages	3.8	4.3	-4.0	-4.0	-2.9	1.7	4.5	4.5	4.5	13.1
Personal & Household Goods	1.3	1.5	3.6	3.6	0.4	1.8	4.2	4.4	4.4	4.2
Healthcare	**-1.0**	**-1.9**	**-6.6**	**-6.6**	**4.5**	**0.9**	**1.5**	**-0.3**	**-0.3**	**12.9**
Financials	**-2.1**	**-4.6**	**-4.6**	**-4.6**	**-12.7**	**-1.0**	**-2.0**	**-2.7**	**-2.7**	**-11.6**
Banks	-4.0	-7.0	-4.3	-4.3	-17.0	-2.2	-3.8	-5.3	-5.3	-20.5
Financial Services	-1.8	-3.0	-2.5	-2.5	-13.0	0.2	0.7	-0.7	-0.7	-6.6
Insurance	1.3	-1.3	-0.2	-0.2	-5.8	-0.3	-1.4	-0.1	-0.1	1.6
Real Estate	2.4	3.8	3.7	3.7	11.6	1.9	3.7	1.8	1.8	2.1
Technology	**0.3**	**2.5**	**5.1**	**5.1**	**5.3**	**-1.0**	**-0.4**	**1.8**	**1.8**	**-1.4**
Telecommunications	**0.0**	**2.0**	**1.6**	**1.6**	**0.2**	**0.2**	**3.8**	**-8.4**	**-8.4**	**-1.8**
Utilities	**2.6**	**3.4**	**-0.8**	**-0.8**	**10.1**	**1.8**	**2.1**	**0.7**	**0.7**	**15.3**

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.
Source: Datastream and Invesco

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

Data as at 27/03/2019	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-0.8	-3.4	12.8	12.8	10.7	-0.2	-4.0	0.3	0.3	1.0
Low volatility	1.2	1.9	10.9	10.9	17.1	1.9	1.3	-1.4	-1.4	6.9
Price momentum	0.6	1.5	12.6	12.6	4.8	1.3	0.8	0.1	0.1	-4.4
Quality	-1.1	-1.9	11.8	11.8	7.3	-0.5	-2.6	-0.6	-0.6	-2.1
Size	-0.1	-2.2	14.0	14.0	7.7	0.5	-2.8	1.3	1.3	-1.7
Value	-1.1	-1.7	14.1	14.1	0.4	-0.5	-2.3	1.5	1.5	-8.4
Market	-0.6	0.6	12.5	12.5	9.5					
Market - Equal-Weighted	-0.2	-0.5	13.6	13.6	7.2					

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: Datastream and Invesco

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

Data as at 27/03/2019	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-1.3	0.1	13.9	13.9	4.4	-0.5	-1.5	1.2	1.2	-1.8
Low volatility	0.0	3.5	11.3	11.3	10.8	0.9	1.8	-1.1	-1.1	4.3
Price momentum	0.1	3.2	13.8	13.8	3.9	0.9	1.5	1.1	1.1	-2.2
Quality	-1.4	0.5	15.1	15.1	-0.1	-0.5	-1.1	2.3	2.3	-6.0
Size	-1.9	-0.1	15.3	15.3	2.6	-1.1	-1.8	2.5	2.5	-3.4
Value	-2.1	-1.0	11.3	11.3	-2.2	-1.3	-2.6	-1.0	-1.0	-8.0
Market	-0.9	1.7	12.5	12.5	6.2					
Market - Equal-Weighted	-1.4	0.6	12.3	12.3	2.8					

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: Datastream and Invesco

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%**	**44%**			
Government	30%	10-50%	24%			
US	10%		14%			
Europe ex-UK (Eurozone)	8%		0%			
UK	2%		3%			
Japan	8%		3%			
Emerging Markets	2%		4%			
Corporate IG	10%	0-20%	14%			
US Dollar	5%		8%			
Euro	3%		2%			
Sterling	1%		2%			
Japanese Yen	1%		2%			
Corporate HY	5%	0-10%	6%			
US Dollar	4%		6%			
Euro	1%		0%			
Equities	**45%**	**20-70%**	**40%**			
US	25%		12%			
Europe ex-UK	7%		10%			
UK	4%		6%			
Japan	4%		8%			
Emerging Markets	5%		4%			
Real Estate	**3%**	**0-6%**	**6%**			
US	1%		2%			
Europe ex-UK	1%		0%			
UK	0.5%		1%			
Japan	0.5%		1%			
Emerging Markets	0%		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						
USD	49%		47%			
EUR	21%		13%			
GBP	8%		13%			
JPY	14%		16%			
EM	7%		11%			
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.
Source: Invesco

Figure 8 – Model sector allocations

	US		Europe		Preferred
	Neutral	Invesco	Neutral	Invesco	Region
Oil & Gas	**5.1%**	**Overweight**	**6.8%**	**Neutral**	**US**
Materials	**2.3%**	**Neutral**	**6.7%**	**Underweight**	**US**
Basic Resources	0.3%	Underweight	3.0%	Neutral	Europe
Chemicals	2.0%	Neutral	3.7%	Underweight	US
Industrials	**11.8%**	**Underweight**	**13.3%**	**Underweight**	**US**
Construction & Materials	0.4%	Neutral	2.7%	Underweight	US
Industrial Goods & Services	11.4%	Underweight	10.7%	Underweight	US
Consumer Discretionary	**15.6%**	**Underweight**	**9.9%**	**Overweight**	**Europe**
Automobiles & Parts	0.6%	Underweight	3.0%	Overweight	Europe
Media	2.5%	Overweight	2.0%	Underweight	US
Retail	9.7%	Underweight	3.3%	Overweight	Europe
Travel & Leisure	2.8%	Overweight	1.7%	Overweight	US
Consumer Staples	**7.5%**	**Overweight**	**16.6%**	**Overweight**	**Europe**
Food & Beverage	3.4%	Neutral	7.3%	Overweight	Europe
Personal & Household Goods	4.2%	Overweight	9.4%	Overweight	Europe
Healthcare	**14.1%**	**Neutral**	**13.2%**	**Underweight**	**US**
Financials	**17.8%**	**Neutral**	**20.0%**	**Overweight**	**Europe**
Banks	5.6%	Neutral	10.6%	Overweight	Europe
Financial Services	5.8%	Underweight	2.0%	Overweight	Europe
Insurance	3.5%	Neutral	5.6%	Overweight	Europe
Real Estate	2.9%	Overweight	1.8%	Underweight	US
Technology	**20.5%**	**Underweight**	**4.6%**	**Underweight**	**US**
Telecommunications	**2.1%**	**Overweight**	**3.9%**	**Overweight**	**Europe**
Utilities	**3.2%**	**Underweight**	**5.0%**	**Underweight**	**Europe**

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: 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). 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

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Unless stated otherwise, all data as of 27 March 2019.

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