Asset Allocation | 3Q19

Navigating trade war

Source: AFP Photo

DBS

Live more, Bank less

Macro Outlook

Monetary Policy
Fed to deliver two rate cuts by year end as insurance against global market risks. However, there is limited room for ECB rate cuts.

Economic Growth
US growth to stay within 2-3%, but prolonged trade war could increase stagflation risk. China's growth rate to moderate after an impressive 1Q.

Geopolitics
Escalating US-China trade war is the key risk event. Keep an eye on Brexit and ECB leadership change.

Inflation
US inflation to stay below Fed's target amid moderate energy and food prices, and limited passthrough from tariffs to consumer goods.

Fiscal Policy
Limited room for further fiscal stimulus in the US. Proposed consumption tax hike in Japan may be delayed amid rising recession risk.

Market Outlook

Equities
Given rising trade tensions, Overweight IT services over hardware within Technology. In China, prefer domestic consumption over exporters.

Currencies
$ € ¥

Dollar to stay firm given relative US economic strength. Euro risk remains on the downside while the yuan will stay close to 7.0 on lingering trade tensions.

Rates
Trade war will weigh on G-3 rates and bond yields. ECB's policy normalisation on hold while BOJ to keep rates low through Spring 2020.

Credit
Prefer EM over DM bonds given wider yield spreads. Sweet spot is on the BBB/BB-rated buckets with average portfolio duration between 4 to 5 years.

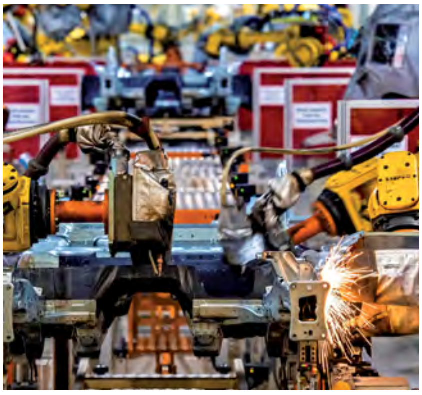
Thematics
Ride the secular tailwind of Cloud Computing as data is the new oil. Benefit from the global manufacturing renaissance as Automation takes hold.

CIO Thematic Research

Cloud Computing

Data is the new oil, and cloud computing is the cornerstone of data usage, online access, and the Internet of Things. Prospects are bright given the sector's versatility amid rising demand for the public cloud.

New Theme | CIO Insights 3Q19



Automation

Global manufacturing is undergoing a renaissance as automation and "Industry 4.0" take hold. Benefit from the shift toward "smart factories" that will re-define global manufacturing.

New Theme | CIO Insights 3Q19

New Defensives

Digitalisation is leading to the disruption of traditional industries. Today, Technology and Consumer Discretionary companies offer utility-like business models. They are the New Defensives.

New Feature | CIO Insights 3Q19

Source: AFP Photo

Sustainability 2.0

As climate change outpaces society's ability to curb its mass energy addiction, a major revolution is upon us: Sustainability. In the near future, ESG investments will be part of core portfolios. Ride the wave.

New Feature | CIO Insights 3Q19

Asset Allocation

Hou Wey Fook, CFA
Chief Investment Officer

Dylan Cheang
Strategist

Navigating global trade uncertainties

True to form, global equities staged an impressive rebound during the first four months of 2019 as the timely combination of a dovish Federal Reserve and a resurgent Chinese economy reignited "animal spirits" after December's carnage. But as the saying goes, "nothing lasts forever". The high-octane rally in global equities came to an abrupt halt as US-China trade tension reared its ugly head again in May and triggered a broad-based retreat in risk assets.

Since 2018, we have maintained the view that rationality will eventually prevail with the trade war seeing a peaceful resolution. Not anymore. Recent rhetoric between the US and China suggests that the key issue at hand is no longer about trade per se. It is about the fight for strategic and technological dominance on the global stage. Even in the event that US and China reach a resolution in the coming months, the calm will only be transitory. At the end of the day, there are no easy solutions for deep-seated issues surrounding intellectual property and protectionism. Undercurrents and mistrust will linger for the foreseeable future.

Figure 1: US-China trade war – a timeline

Source: Bloomberg, DBS

So in an "all-out" trade war, what will the impact on the S&P 500 Index be?

Faced with heightened tariffs, Chinese companies exporting to the US market will try to pass on the bulk of these costs to US importers while absorbing part of it. According to DBS economists, real US GDP growth will be reduced by 0.6%pts to 1.9% in 2019. Against this backdrop, we expect:

- US capex: Based on our model-based analysis, an "all-out" trade war will bring the year-on-year 12-month trailing capital expenditure of S&P 500 companies to almost zero (vs 12% growth in 1Q19) (Figure 3).

- US earnings: Based on a worst-case scenario, our model-based analysis suggests that S&P 500 earnings could be reduced by 3%pts in 2019 (Figure 4).

- US valuation: Estimating the valuation impact of an "all-out" trade war is definitely more of an art than a science. We conducted an analysis on this last year in our *CIO Perspectives – Trade war: From rhetoric to reality (4 July 2018)?*

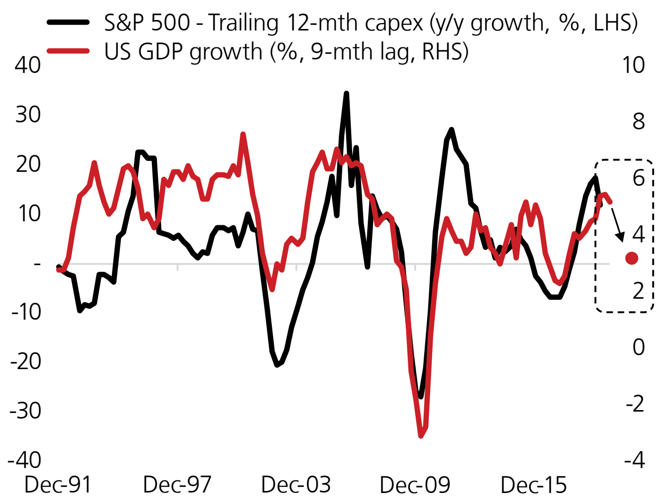
  Back then, we drew reference on the US steel tariffs of 2002 and concluded that in the event of an "all-out" trade war, US equities could undergo correction and trade at 14% discount to its long-term median. Our view is unchanged.

  Today, the median valuation for S&P 500 stands at 16x and a 14% discount will bring the forward P/E to 14x. As the market trades at 17x currently, this implies a valuation contraction of 17% in the worst-case scenario (Figure 5).

Figure 2: Trade War Blues I – Ongoing trade tensions have weighed on US exports to China

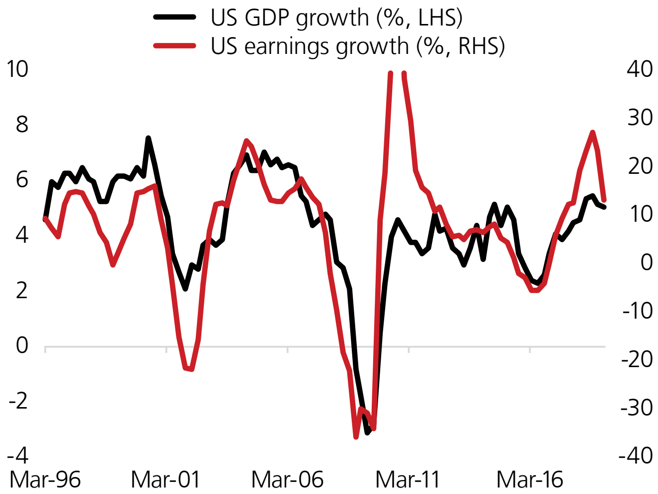
Source: Bloomberg, DBS

Figure 3: Trade War Blues II – An "all-out" conflict could drive S&P 500 company capex growth to almost zero



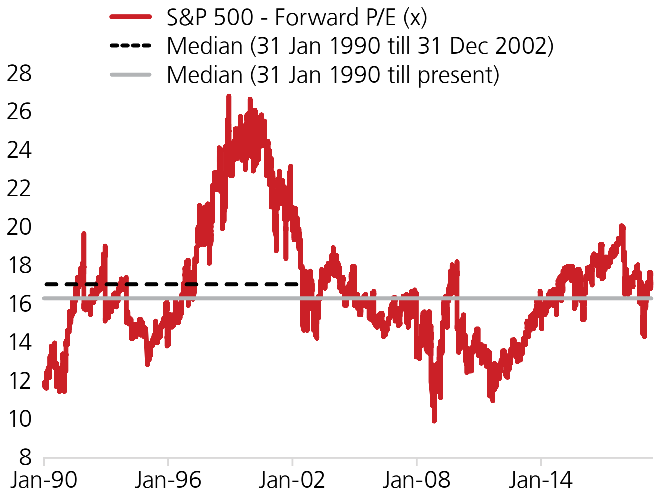
Source: Bloomberg, DBS

Figure 4: Trade War Blues III – An estimated 3%pts could be shaved off S&P 500 earnings growth



Source: Bloomberg, DBS

Figure 5: Trade War Blues IV – US valuation could contract by 17% in the "worst-case" scenario



Source: Bloomberg, DBS

Taken together, the combination of 3% earnings decline and 17% valuation contraction will bring the S&P 500 broadly back to the trough of December 2018's selldown. But this is just an analysis of an "extreme" scenario, and we are assigning only a 30% probability to it. More likely than not, we expect the market to be well-supported by the following factors during the second half, given:

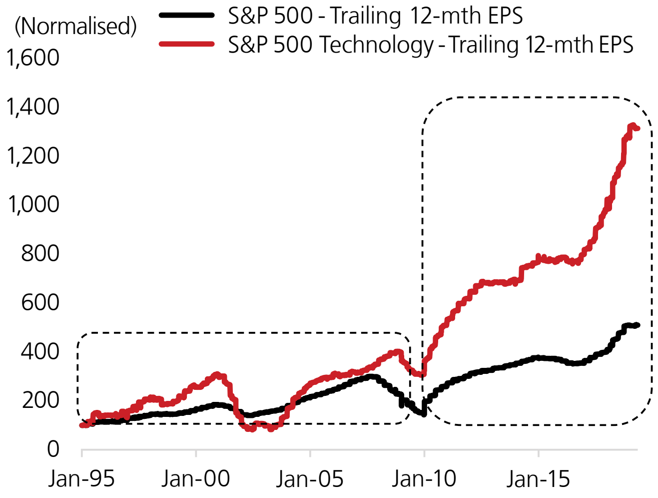
1) Valuation and growth expectations are not excessive
2) Light positioning and loose financial conditions
3) Troughing of macro and earnings momentum

Fair valuation and modest growth expectations. In our conversations with clients, a common pushback is that "valuation is no longer cheap". This, in our view, is a misconception. With the global bull market entering its tenth year, it is easy to dismiss equities as being "expensive"; in reality, however, the dynamic today is vastly different from previous market peaks.

First, the bull market (in particular the S&P 500 Index) is backed by strong corporate earnings growth. There are no signs of this abating, as traditional industries continue to face disruption – and this disruption is by technology companies which generate higher returns (Figure 6). This explains why US equities trade at 17.3x forward P/E – a level not far from its long-term average of 16.9x (Figure 7).

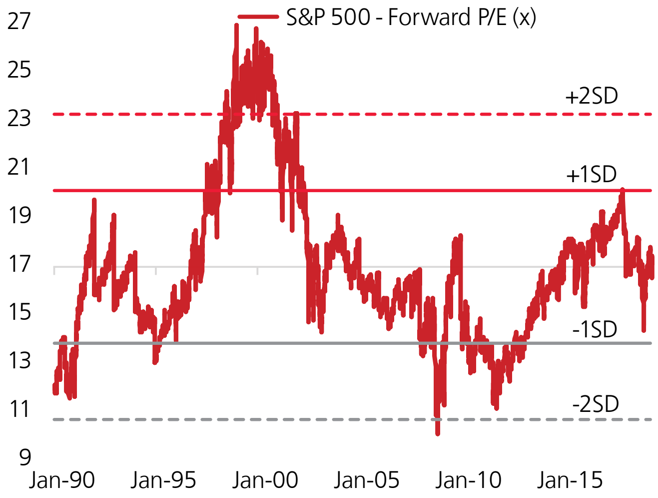
To check our blind spots on market valuation, we have constructed a two-stage Dividend Discount Model (DDM) for the S&P 500, with the following assumptions: (a) Risk-free rate proxied by the UST 10-year yield; (b) Stage one dividend growth rate based on the consensus forecast for long-term EPS growth; and (c) Terminal growth for dividends proxied by long-term average GDP growth.

Figure 6: Game changer – Technology has been a major driver of US corporate earnings, and will remain so



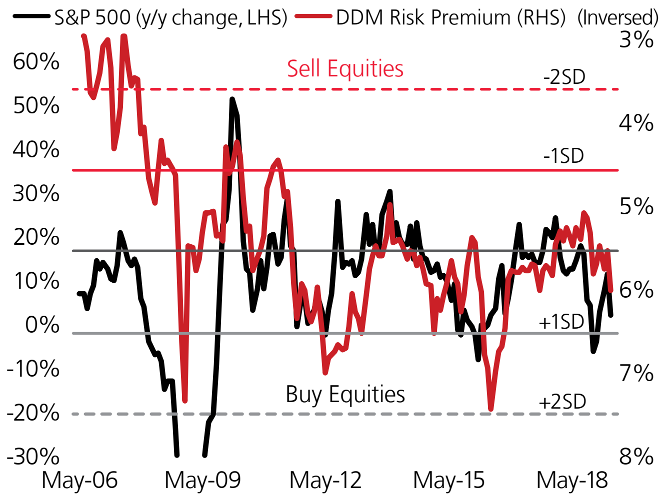
Source: Bloomberg, DBS

Figure 7: Strong US corporate earnings growth has kept the S&P 500's valuation in check



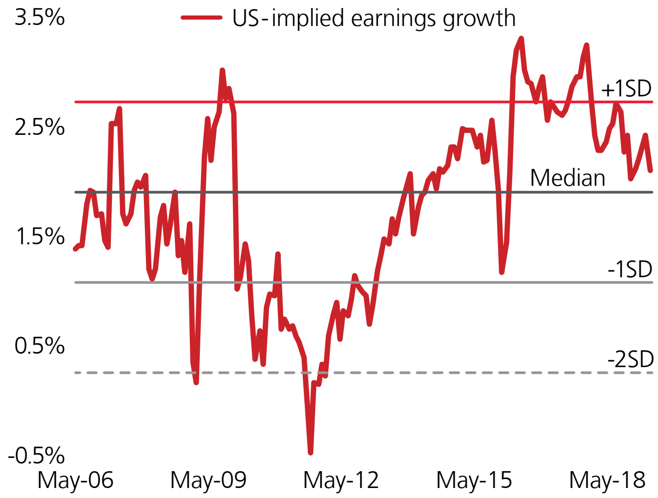
Source: Bloomberg, DBS

Figure 8: Our DDM model shows the ERP for the S&P 500 is in line with its long-term average



Source: Bloomberg, DBS

Figure 9: Current implied earnings growth for S&P 500 is modest



Source: Bloomberg, DBS

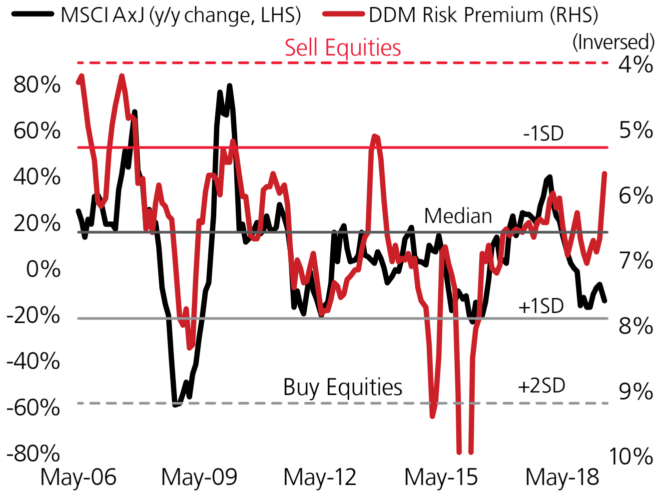
Our model shows that the market is pricing in only modest earnings growth

Based on our DDM model, the Equity Risk Premium (ERP) for the S&P 500 stands at 6.0%, in line with the long-term average. More interestingly, our model shows that the prevailing forward P/E is pricing in only conservative earnings growth of 2.1% (again, this is in line with historical trends).

All in all, the above indicators show no signs of excessive exuberance in the US equity market, at this stage.

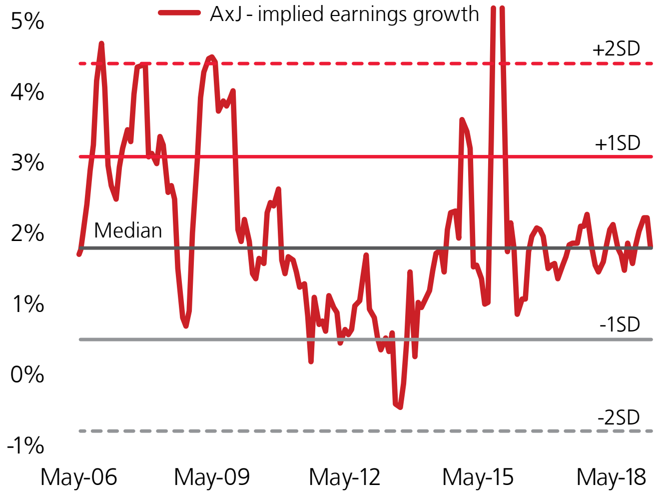
Expanding our research to Asian markets yielded similar outcomes. As Figure 10 shows, the ERP for the region stands at 5.7%, in line with its long-term median of 6.6%. At the current valuation, the implied earnings growth stands 1.6%; this is not excessive in our view.

Figure 10: ERP for Asia ex-Japan is currently in line with the long-term median



Source: Bloomberg, DBS

Figure 11: Implied earnings growth for Asia ex-Japan equities is close to zero



Source: Bloomberg, DBS

Positioning in US equities remains light and this suggests the absence of irrational exuberance

Light positioning and loose financial conditions. As we highlighted in *CIO Perspectives – An unloved bull; engage equities within barbell strategy (2 May 2019)*, our analysis of tactical indicators suggests that there remains much scepticism over the sustainability of the current market rebound.

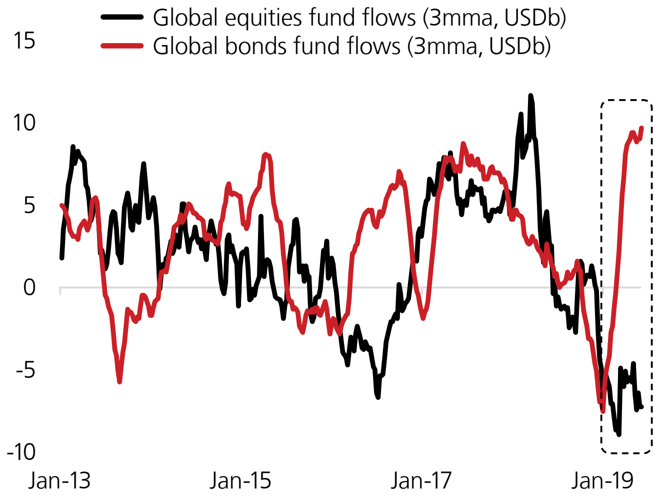
On a 5M19 basis, fund flows from EPFR Global show that USD165b flowed into global bonds, while global equities registered outflows totalling USD145b (Figure 12). The current American Association of Individual Investors (AAII) bull/bear ratio of 0.6 similarly suggests that investor appetite for equities remains lukewarm (Figure 13).

This is good news. The overall caution suggests the absence of irrational exuberance in equities. Should markets continue to rally, benchmark-based investors will be forced to play "catch-up", giving equities another leg-up.

Corporates remain the key buyer of US equities

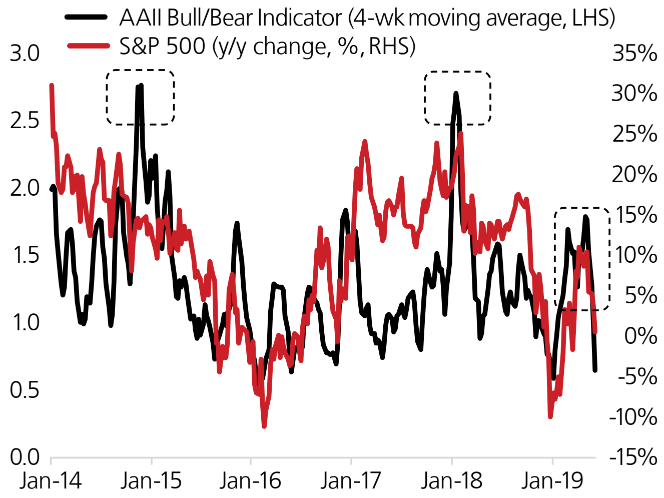
Now, one may ask: With both institutional and retail investors perceivably staying on the sidelines, who are the key buyers then? Our answer: Corporates. Corporate share buybacks remain robust, given the huge amount of cash sitting on the balance sheets. We expect this trend to stay strong (Figure 14).

Figure 12: Unlike bonds, equities remain unloved



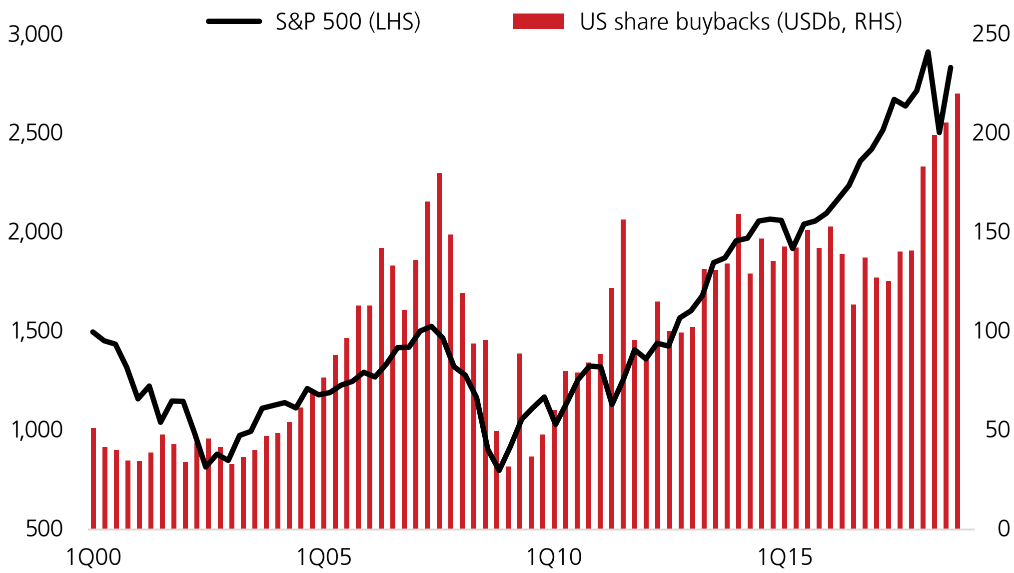
Source: EPFR Global, DBS

Figure 13: AAII bull/bear ratio stuck in moderate range, amid lingering scepticism over equity rally



Source: Bloomberg, DBS

Figure 14: Corporate share buybacks remain a significant driver of the S&P 500



Source: Bloomberg, DBS

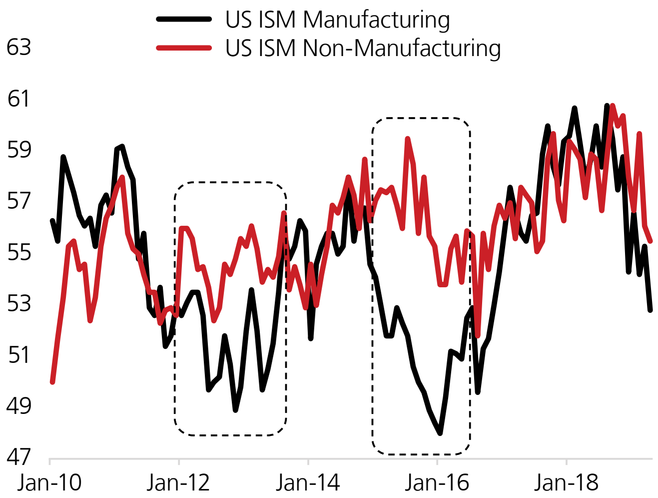
Troughing of macro and earnings momentum. The global economy underwent a broad-based deceleration for the whole of 2018, evident from the downtrend in the US ISM Manufacturing and China Li Keqiang index. But recent high-frequency data suggest a bottoming trend is in place.

Divergence between US services and manufacturing sectors

In the US, momentum has somewhat diverged for the services and manufacturing sectors, as uncertainties from trade tensions weighed on manufacturing activity. On the other hand, the services segment has remained fairly resilient, as the ISM Non-Manufacturing Index stood at 55.5 in April. As Figures 15 and 16 show, the difference between ISM Manufacturing and Non-Manufacturing (also known as the ISM differential) has historically been a leading indicator for the trajectory of GDP and corporate earnings.

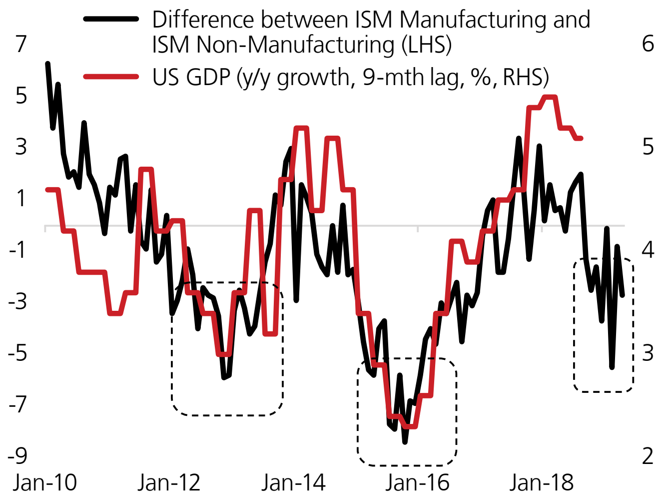
US GDP growth tends to lag the ISM differential by nine months. As such, recent weakness in the latter suggests that upcoming headline US GDP data could skew to the weaker side. Still, this is immaterial to financial markets, given the lagged nature (and hence irrelevance) of GDP numbers.

Figure 15: US ISM Manufacturing tends to catch up with the ISM Non-Manufacturing index after a lag; this time will be no different



Source: Bloomberg, DBS

Figure 16: ISM indices are signalling a softening of macro momentum in the coming quarters



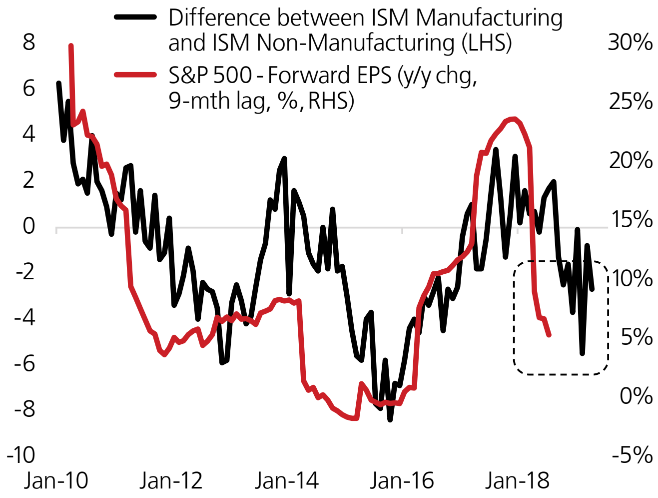
Source: Bloomberg, DBS

US corporate earnings have potentially troughed

What really matters to equity markets is corporate earnings. Figure 17 shows that earnings forecasts have already undergone a sharp downward revision in anticipation of the macro weakness. The bottoming of forecasted earnings augurs well for the outlook of the S&P 500.

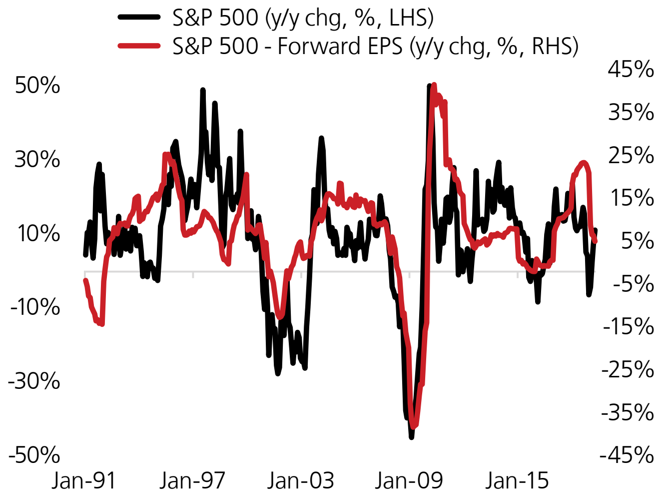
Similarly, China's macro environment is seeing early signs of a rebound, as the government pursues pro-growth policies to arrest the recent decline in economic momentum. China's manufacturing PMI seems to have bottomed in February, coinciding with recent gains in the economic surprise index (Figure 19). We believe China's macro conditions will undergo a further rebound from here, as recent RRR cuts work their way through the broader economy.

Figure 17: The looming macro weakness has already been reflected in the street's earnings forecast



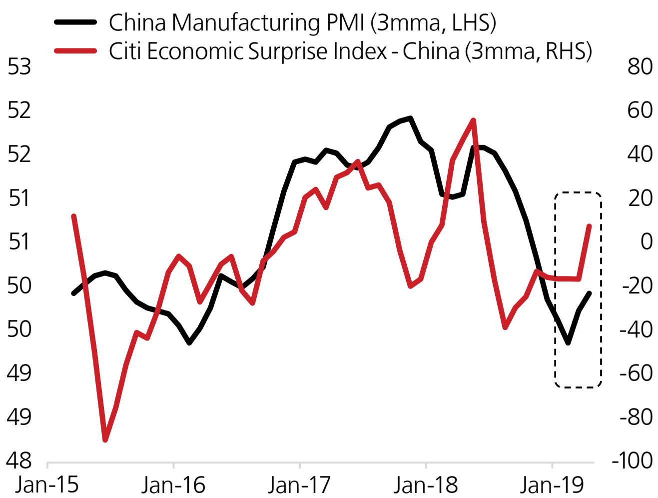
Source: Bloomberg, DBS

Figure 18: The bottoming of forecasted earnings augurs well for the outlook of S&P 500



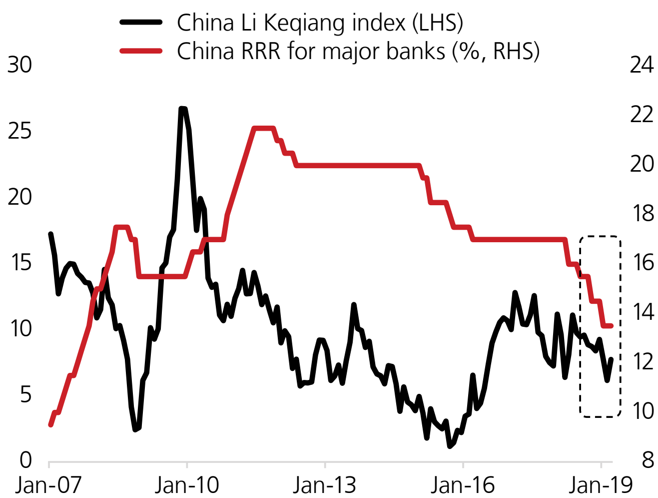
Source: Bloomberg, DBS

Figure 19: Still early days, but the Chinese economy is showing initial signs of a rebound



Source: Bloomberg, DBS

Figure 20: Chinese macro momentum is expected to improve after recent RRR cuts



Source: Bloomberg, DBS

Winners and losers in a trade war

The likelihood of this trade conflict morphing into a long-drawn affair has increased considerably, given the widening gulf between the US and China. From bilateral trade tension, the narrative has since expanded to technology and data security. Without doubt, a prolonged conflict will weigh on the global economy and in such an environment, it is prudent to seek out the relative winners and losers.

From a strategy perspective, we have been advising investors to adopt a barbell strategy in times of rising market volatility. Under this framework, we have exposure to both "Growth" and "Income" equities. Growth equities predominantly consist of exposure to US Technology, digitalisation, Millennial consumption, and China equities while on the "Income" side of the equation, it consists of REITs, dividend stocks, and BBB/BB corporate bonds.

Should the trade situation deteriorate further, one should be more discerning in their sub-sectoral/thematic allocation and our recommended strategies are:

Trade war strategies for Growth equities:
- In US Technology and the "Digitalisation" theme, prefer IT services over IT hardware
- In China equities, prefer domestic consumption stocks over exporters

Trade war strategies for Income equities:
- Trade war likely to compel central banks to cut rates further; Positive for REITs

3Q19 Asset Allocation: Equities still the best game in town

Table 2: CIO Asset Allocation (CAA) Framework – 3Q19

Categories	Indicators	Score Range	Equities				Bonds		
			US	Europe	Japan	AxJ	DM Govt	DM Corp	EM Bonds
Fundamentals	PMI	-1 to +1	0	-1	0	0	0	0	0
	Economic surprise	-1 to +1	0	-1	0	0	0	0	0
	Inflation	-1 to +1	1	0	0	0	0	0	0
	Monetary policies	-1 to +1	1	1	1	1	1	1	1
	Forecasted EPS growth	-2 to +2	1	0	0	0	-	1	0
	Earnings surprise	-2 to +2	1	-1	0	0	-	0	0
Valuation	Forward P/E	-2 to +2	0	0	0	1	-	-	-
	P/B vs ROE	-2 to +2	0	0	0	1	-	-	-
	Earnings yield - 10Y yield	-2 to +2	1	1	1	1	-1	-	-
	Credit spread	-2 to +2	-	-	-	-	-	-1	0
Momentum	Fund flows	-2 to +2	-1	0	0	0	1	0	1
	Volatility	-1 to +1	0	0	0	0	0	-	-
	Catalysts	-2 to +2	0	0	0	0	0	0	0
Raw Score			4	-1	2	4	1	1	2
Adjusted Score*			**0.21**	**-0.05**	**0.11**	**0.21**	**0.09**	**0.07**	**0.14**

*Note: The "Adjusted Score" is calculated using the "Raw Score" divided by the maximum attainable score for each category. Source: DBS

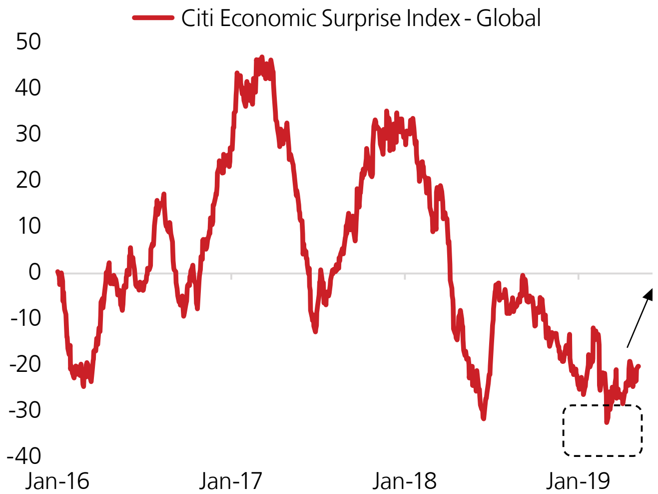
Cross Assets – Equities continue to encapsulate better risk-reward. From a cross-asset perspective, we continue to maintain a preference for equities over bonds. This view is captured in our CAA Framework, with equities garnering a higher score of 0.47 (vs bonds at 0.31).

Fundamentals: Global economic momentum is showing early signs of recovery, as seen from the uptrend in the Citi Economic Surprise Index (Global) since March. Recessionary risk for 2019 remains low and we expect corporate earnings to maintain their current momentum (Figure 21).

Valuations: On a cross-asset basis, the gap between earnings yields and treasury yields remains meaningfully wide at 3.3% (vs the historical average of 1.4%). This underlines the relative attractiveness of equities over bonds (Figure 22).

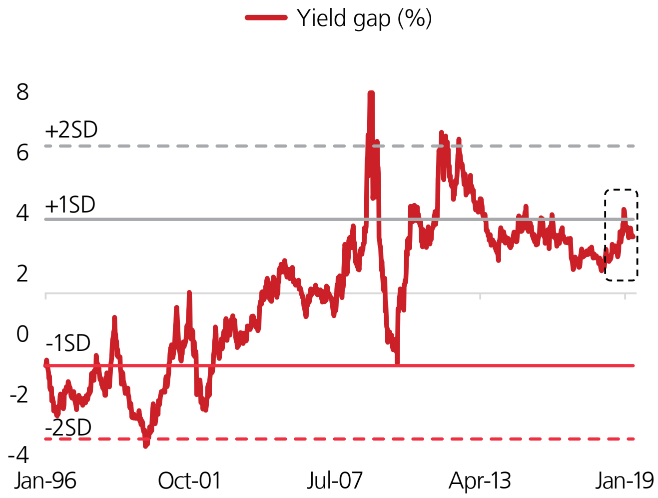
Momentum: On cross-asset flows, USD145b has exited from global equity funds this year, compared to inflows of USD165b for bond funds. The flow data suggest lingering scepticism on the durability of this equity rally. But should stock markets continue to grind higher, the pressure for benchmark-tracking investors to load up on their equity allocation will intensify.

Figure 21: Signs of bottoming in the global economic outlook



Source: Bloomberg, DBS

Figure 22: Equities encapsulate greater value than bonds



Source: Bloomberg, DBS

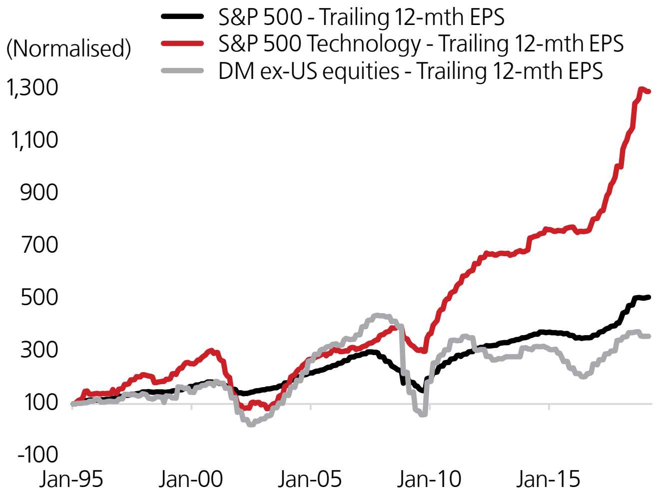
Equities: US to maintain cyclical leadership in DM; China looks attractive after the pullback. In developed markets, we continue to favour US over Europe and Japan in 3Q19 for the following reasons:

a) US equities possess superior earnings momentum, given the high representation of technology-related stocks in the index (Figure 23). The proportion of US companies reporting positive earnings surprise has been on the rise (Figure 24).

b) The strong rebound in fund flows momentum for US equities (Figure 25) suggests that benchmark investors are increasingly compelled to "chase" the S&P 500, after the strong rally this year.

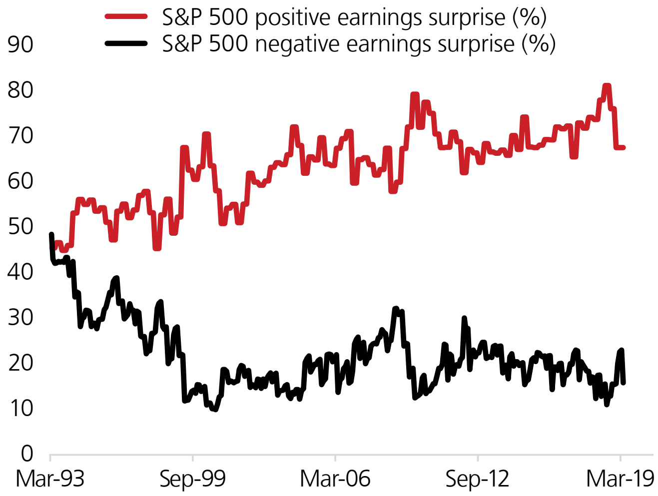
c) No signs of mean reversion, with global investors maintaining their willingness to pay a premium for US equities' stability and growth potential (Figure 26).

Figure 23: US continues to outperform other DMs, given superior earnings momentum due to huge technology exposure



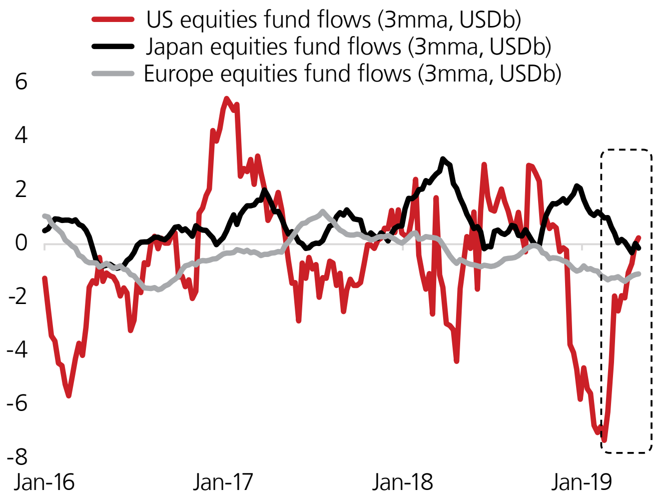
Source: Bloomberg, DBS

Figure 24: Diverging path – Proportion of US companies reporting earnings surprise on the rise



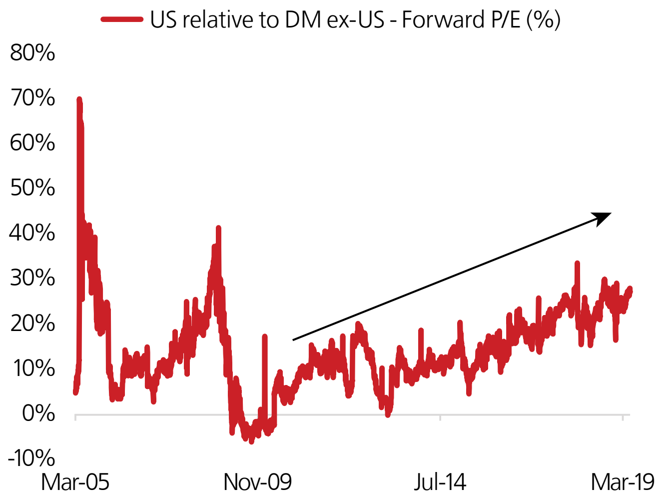
Source: Bloomberg, DBS

Figure 25: Flow data suggest that investors are incrementally allocating funds to the US, after months of outflows



Source: EPFR Global, DBS

Figure 26: The death of mean reversion? Valuation premium for the US relative to other DMs continues to grind higher



Source: Bloomberg, DBS

The sharp pullback in China equities – on renewed trade war concerns – provides an attractive entry point for investors. Indeed, post-US President Donald Trump's tweets, both H- and A- shares have corrected 9% and 5%, respectively (as of 12 June). In addition, one should take a longer-term view here. We stay positive on China equities given the following reasons:

a) The Chinese government has clearly undertaken steps to boost the domestic economy. This augurs well for corporate earnings.
b) China equities are not only cheap from a valuation perspective – they also possess huge earnings growth potential. This explains why the P/E-to-growth (PEG) ratio for China equities is substantially lower than that of global equities (1.1 vs 2.5, respectively) (Figure 27).
c) China technology stocks are looking attractive after the recent pullback. The sector trades at 2.0x P/B while ROE stands at 12.2%. Previously, when P/B was trending in this range, the ROE was approximately half of the current level (Figure 28).

Figure 27: China trades at more attractive PEG than global equities

Source: Bloomberg, DBS

Figure 28: China technology stocks are attractive on a P/B-ROE basis

Source: Bloomberg, DBS

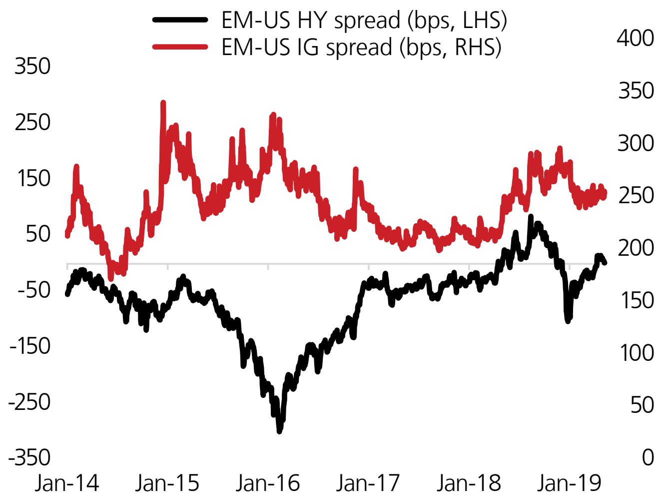
Bonds: Maintain positive view on EM bonds. In 2Q19, we upgraded EM bonds to Overweight. This quarter, we see further room for modest spread tightening as the Fed maintains its dovish policy stance (and thus extends the credit cycle). As Figure 29 shows, EM spreads tend to lag the UST 10-year yield by three months. The current level of 2.1% for the UST 10-year yield suggests that further c.20 bps of spreads tightening for EM bonds is plausible.

Meanwhile, from a relative perspective, EM bonds are not overvalued. EM spreads are now broadly in line with US high-yield (HY) (vs the long-term average difference of -66 bps), while the spread between EM and US IG is slightly wider than the historical average (Figure 30).

Figure 29: The downtrend in UST yields suggests further spread tightening for EM bonds is plausible

Source: Bloomberg, DBS

Figure 30: EM bonds are not overvalued, relative to US IG and HY bonds



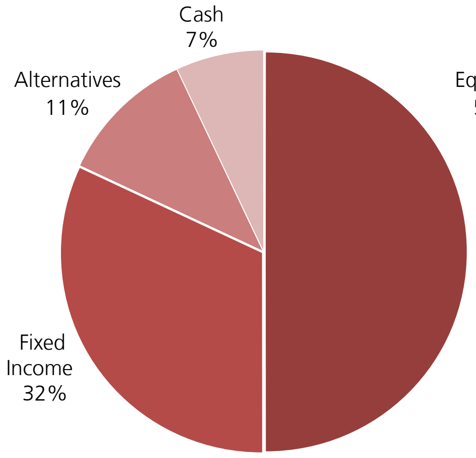
Source: Bloomberg, DBS

Table 3: 3Q19 Global tactical asset allocation (TAA)

Asset Class		
	Three-Month Basis	**12-Month Basis**
Equities	**Neutral**	**Neutral**
US Equities	Overweight	Neutral
Europe Equities	Underweight	Underweight
Japan Equities	Underweight	Neutral
Asia ex-Japan Equities	Overweight	Overweight
Fixed Income	**Underweight**	**Underweight**
Developed Markets (DM) Government Bonds	Underweight	Underweight
Developed Markets (DM) Corporate Bonds	Underweight	Neutral
Emerging Markets (EM) Bonds	Overweight	Neutral
Alternatives	**Overweight**	**Overweight**
Gold	Overweight	Neutral
Hedge Funds	Overweight	Overweight
Cash	**Overweight**	**Neutral**

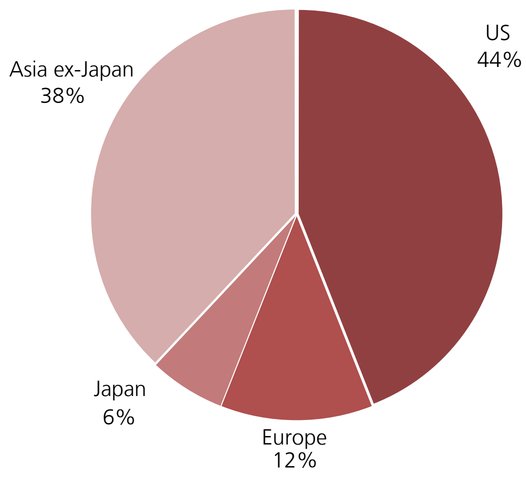
Source: DBS

Figure 31: TAA breakdown by asset class (Balanced Profile – three-month view)



Source: DBS

Figure 32: TAA breakdown by geography within equities (Balanced Profile – three-month view)

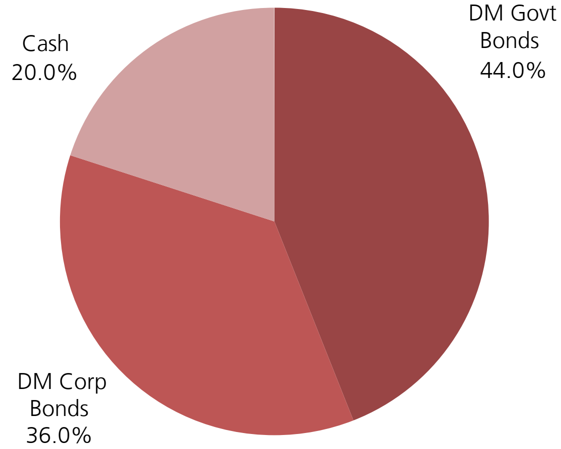


Source: DBS

Conservative

	TAA	SAA	Active
Equities	0.0%	0.0%	
US	0.0%	0.0%	
Europe	0.0%	0.0%	
Japan	0.0%	0.0%	
Asia ex-Japan	0.0%	0.0%	
Fixed Income	80.0%	80.0%	
Developed Markets (DM)	80.0%	80.0%	
DM Government Bonds	44.0%	44.0%	
DM Corporate Bonds	36.0%	36.0%	
Emerging Markets (EM)	0.0%	0.0%	
Alternatives	0.0%	0.0%	
Gold	0.0%	0.0%	
Hedge Funds*	0.0%	0.0%	
Cash	20.0%	20.0%	

*Only P4 risk rated UCITs Alternatives

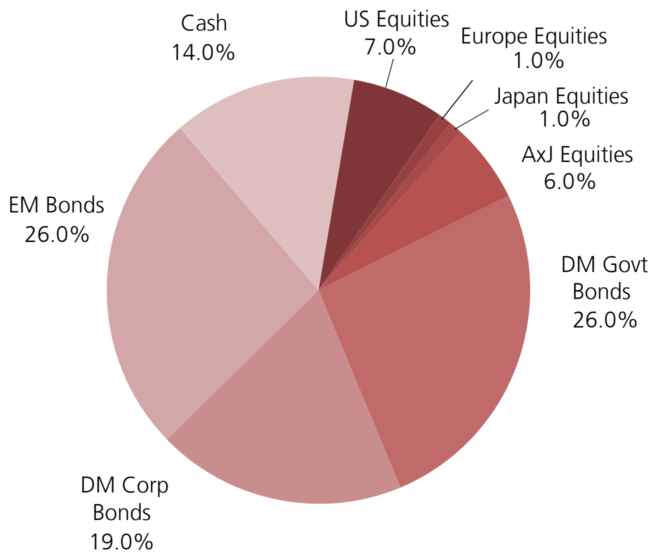


Source: DBS, Morningstar Investment Management Asia Limited

Moderate

	TAA	SAA	Active
Equities	15.0%	15.0%	
US	7.0%	6.0%	1.0%
Europe	1.0%	4.0%	-3.0%
Japan	1.0%	2.0%	-1.0%
Asia ex-Japan	6.0%	3.0%	3.0%
Fixed Income	71.0%	75.0%	-4.0%
Developed Markets (DM)	45.0%	53.0%	-8.0%
DM Government Bonds	26.0%	30.0%	-4.0%
DM Corporate Bonds	19.0%	23.0%	-4.0%
Emerging Markets (EM)	26.0%	22.0%	4.0%
Alternatives	0.0%	0.0%	
Gold	0.0%	0.0%	
Hedge Funds*	0.0%	0.0%	
Cash	14.0%	10.0%	4.0%

*Only P4 risk rated UCITs Alternatives

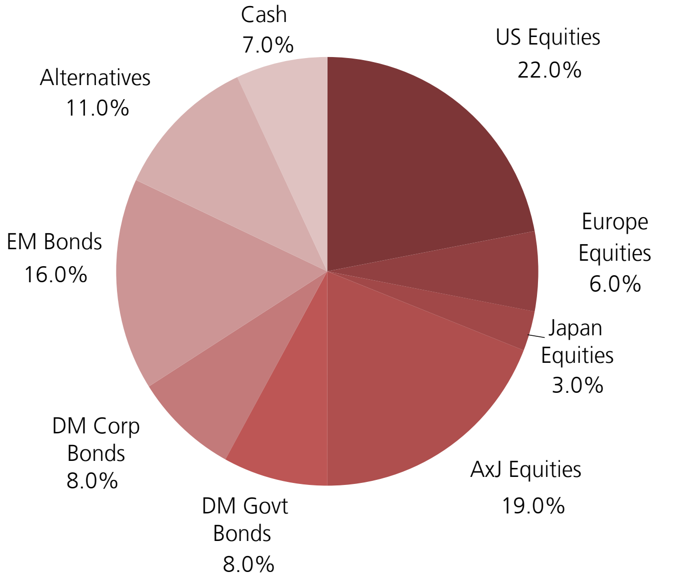


Source: DBS, Morningstar Investment Management Asia Limited

Balanced

	TAA	SAA	Active
Equities	50.0%	50.0%	
US	22.0%	21.0%	1.0%
Europe	6.0%	12.0%	-6.0%
Japan	3.0%	7.0%	-4.0%
Asia ex-Japan	19.0%	10.0%	9.0%
Fixed Income	32.0%	40.0%	-8.0%
Developed Markets (DM)	16.0%	29.0%	-13.0%
DM Government Bonds	8.0%	16.0%	-8.0%
DM Corporate Bonds	8.0%	13.0%	-5.0%
Emerging Markets (EM)	16.0%	11.0%	5.0%
Alternatives	11.0%	5.0%	6.0%
Gold	5.0%	2.0%	3.0%
Hedge Funds*	6.0%	3.0%	3.0%
Cash	7.0%	5.0%	2.0%

*Only P4 risk rated UCITs Alternatives

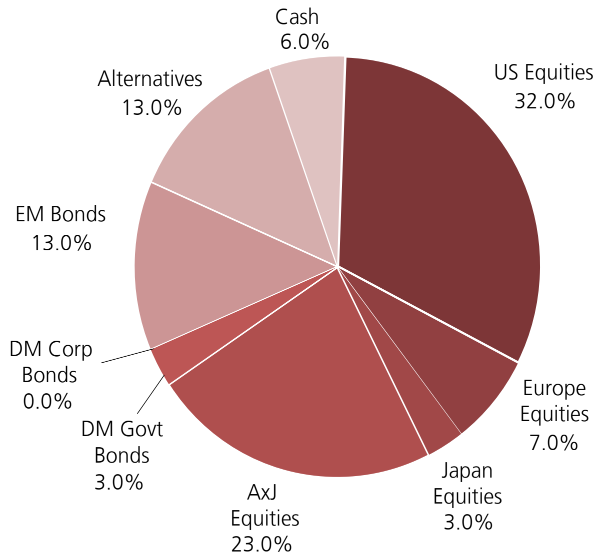


Source: DBS, Morningstar Investment Management Asia Limited

Aggressive

	TAA	SAA	Active
Equities	65.0%	65.0%	
US	32.0%	29.0%	3.0%
Europe	7.0%	15.0%	-8.0%
Japan	3.0%	8.0%	-5.0%
Asia ex-Japan	23.0%	13.0%	10.0%
Fixed Income	16.0%	20.0%	-4.0%
Developed Markets (DM)	3.0%	13.0%	-10.0%
DM Government Bonds	3.0%	7.0%	-4.0%
DM Corporate Bonds	0.0%	6.0%	-6.0%
Emerging Markets (EM)	13.0%	7.0%	6.0%
Alternatives	13.0%	10.0%	3.0%
Gold	5.0%	4.0%	1.0%
Hedge Funds*	8.0%	6.0%	2.0%
Cash	6.0%	5.0%	1.0%

*Only P4 risk rated UCITs Alternatives



Source: DBS, Morningstar Investment Management Asia Limited

Notes:

1. The above are based on three-month views.
2. Asset allocation does not ensure a profit or protect against market loss.
3. "TAA' refers to "Tactical Asset Allocation". "SAA" refers to "Strategic Asset Allocation".
4. The expected return of the SAA is based on capital market assumptions derived from Morningstar's econometric model that relies on historic, current and forecasted data on the indices highlighted below. The information is for reference only.
5. The expected risk (or expected standard deviation) of the SAA model represents the expected risk level of the portfolio based on asset class relationships (correlations) and expected volatility, based on the indices highlighted below. The information is for reference only.
6. Morningstar's SAA models started on 1 October 2010. Morningstar reviews the strategic asset allocation on an annual basis. The current Strategic Asset Allocation (SAA) is as of 1 December 2018.
7. Based on the SAA model, the Aggressive model has the highest risk, followed by Balanced, Moderate, and Conservative, with Conservative being the least risky. The risk consideration that was used in formulating the Strategic Asset Allocation was the expected volatility as measured by expected standard deviation.
8. The investor type classification for the portfolio has no direct relationship with the Financial Needs Analysis customer risk profile types and the portfolios are not assigned any product risk rating based on the bank's proprietary risk rating methodology.
9. The above SAA models are effective from December 2018 to November 2019 and are subject to change.
10. The expected return and expected risk are based on the following indices for calculation:
    - Equity: US – MSCI USA GR USD; Europe – MSCI Europe GR USD; Japan – MSCI Japan GR USD; Asia ex Japan – MSCI AC Asia Ex Japan GR USD
    - Bond: Developed Market Bonds – Citi WGBI USD; Developed Market Corporate Bond – Citi WBIG USD; Emerging Market Bonds – JPM EMBI Global Diversified TR USD
    - Alternatives: Gold – S&P GSCI Gold Spot; Hedge Fund – Credit Suisse Hedge Fund USD
    - Cash: BofAML US Treasury Bill 3 Mon TR USD

Disclaimer by Morningstar:
For Professional Investors Only. Morningstar Investment Management Asia Limited ("Morningstar") is licensed and regulated by the Hong Kong Securities and Futures Commission to provide investment research and investment advisory services to professional investors only. Morningstar relies on certain exemptions (Singapore Financial Advisers Regulations, Section 27(1)(e)) to provide its financial advisory services to institutional investor recipients in Singapore.

Morningstar provides strategic asset allocation to DBS Bank Limited ("DBS") based on certain criteria set by DBS. DBS has the authority to accept, reject or modify Morningstar's strategic asset allocation. Morningstar takes no responsibility for advice provided by DBS to its clients. Morningstar is licensed with the Hong Kong Securities and Futures Commission to provide investment research and investment advisory services to professional investors (which include DBS) only. Morningstar is not acting in the capacity of adviser to individual investors. Morningstar is not affiliated with DBS. The Morningstar name and logo are registered trademarks of Morningstar, Inc. All investments involve risks. The information is for your reference only and does not constitute any offer or solicitation to enter into any investment arrangement. Past performance is not indicative of future performance. You should refer to relevant investment offering documents for detailed information prior to investing in any investment option.

Disclaimers & Important Notes

This information herein is published by DBS Bank Ltd. ("DBS Bank") and is for information only. This publication is intended for DBS Bank and its subsidiaries or affiliates (collectively "DBS") and clients to whom it has been delivered and may not be reproduced, transmitted or communicated to any other person without the prior written permission of DBS Bank.

This publication is not and does not constitute or form part of any offer, recommendation, invitation or solicitation to you to subscribe to or to enter into any transaction as described, nor is it calculated to invite or permit the making of offers to the public to subscribe to or enter into any transaction for cash or other consideration and should not be viewed as such.

The information herein may be incomplete or condensed and it may not include a number of terms and provisions nor does it identify or define all or any of the risks associated to any actual transaction. Any terms, conditions and opinions contained herein may have been obtained from various sources and neither DBS nor any of their respective directors or employees (collectively the "**DBS Group**") make any warranty, expressed or implied, as to its accuracy or completeness and thus assume no responsibility of it. The information herein may be subject to further revision, verification and updating and DBS Group undertakes no responsibility thereof.

All figures and amounts stated are for illustration purposes only and shall not bind DBS Group. This publication does not have regard to the specific investment objectives, financial situation or particular needs of any specific person. Before entering into any transaction to purchase any product mentioned in this publication, you should take steps to ensure that you understand the transaction and has made an independent assessment of the appropriateness of the transaction in light of your own objectives and circumstances. In particular, you should read all the relevant documentation pertaining to the product and may wish to seek advice from a financial or other professional adviser or make such independent investigations as you consider necessary or appropriate for such purposes. If you choose not to do so, you should consider carefully whether any product mentioned in this publication is suitable for you. DBS Group does not act as an adviser and assumes no fiduciary responsibility or liability for any consequences, financial or otherwise, arising from any arrangement or entrance into any transaction in reliance on the information contained herein. In order to build your own independent analysis of any transaction and its consequences, you should consult your own independent financial, accounting, tax, legal or other competent professional advisors as you deem appropriate to ensure that any assessment you make is suitable for you in light of your own financial, accounting, tax, and legal constraints and objectives without relying in any way on DBS Group or any position which DBS Group might have expressed in this document or orally to you in the discussion.

If this publication has been distributed by electronic transmission, such as e-mail, then such transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of the Information, which may arise as a result of electronic transmission. If verification is required, please request for a hard-copy version.

This publication is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation.

If you have received this communication by email, please do not distribute or copy this email. If you believe that you have received this e-mail in error, please inform the sender or contact us immediately. DBS Group reserves the right to monitor and record electronic and telephone communications made by or to its personnel for regulatory or operational purposes. The security, accuracy and timeliness of electronic communications cannot be assured.

Country Specific Disclaimer

Dubai International Financial Centre

This publication is distributed by the branch of DBS Bank Ltd operating in the Dubai International Financial Centre (the "**DIFC**") under the trading name "DBS Vickers Securities (DIFC Branch)" ("**DBS DIFC**"), registered with the DIFC Registrar of Companies under number 156 and having its registered office at units 608 - 610, 6th Floor, Gate Precinct Building 5, PO Box 506538, DIFC, Dubai, United Arab Emirates. DBS DIFC is regulated by the Dubai Financial Services Authority (the "**DFSA**") with a DFSA reference number F000164. For more information on DBS DIFC and its affiliates, please see http://www.dbs.com/ae/our--network/default.page.

This publication is provided to you as a Professional Client or Market Counterparty as defined in the DFSA Rulebook Conduct of Business Module (the "**COB Module**"), and should not be relied upon by any client which does not meet the criteria to be classified as a Professional Client or Market Counterparty under the DFSA rules.

Hong Kong

This publication is distributed by DBS Bank (Hong Kong) Limited (CE Number: AAL664) ("**DBSHK**") which is regulated by the Hong Kong Monetary Authority (the "**HKMA**") and the Securities and Futures Commission. In Hong Kong, DBS Private Bank is the private banking division of DBS Bank (Hong Kong) Limited.

DBSHK is not the issuer of the research report unless otherwise stated therein. Such research report is distributed on the express understanding that, whilst the information contained within is believed to be reliable, the information has not been independently verified by DBSHK.

Singapore

This publication is distributed by DBS Bank Ltd (Company Regn. No. 196800306E) ("**DBS**") which is an Exempt Financial Adviser as defined in the Financial Advisers Act and regulated by the Monetary Authority of Singapore (the "**MAS**").

Thailand

This publication is distributed by DBS Vickers Securities (Thailand) Co., Ltd. ("DBSVT").

United Kingdom

This publication is distributed by DBS Vickers Securities (UK) Ltd of Paternoster House, 4th Floor, 65 St Paul's Churchyard, London EC4M 8AB. ("**DBS Vickers UK**") which is authorised and regulated by the Financial Conduct Authority (the "**FCA**").