Appendix A

LGPS CENTRAL LIMITED TACTICAL ASSET ALLOCATION

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ISSUE 6 • June 2019

LGPS Central Limited

FOR PROFESSIONAL CLIENTS ONLY

LGPS CENTRAL LIMITED TACTICAL ASSET ALLOCATION: ISSUE 6

CIO SUMMARY

Introduction

Welcome to the 6th Edition of our LGPS Central Limited ("LGPSC") Tactical Asset Allocation Report.

We see this being used for short to medium term overlays over your strategic asset allocation to take advantage of current market conditions by refining your asset weights within your long-term allocation bands.

The last 3 months has seen LGPSC busy developing 3 funds: GEMs, Climate Change Factor Based and Corporate Bonds funds up to FCA approval. These are all expected to invest in the next 4 months with ~£3.5bn of potential commitments from Partner Funds. This will bring our sub-funds launched to 7. We have also been working with you to develop the Product Development Protocol (the detailed process and time-line for developing funds) which shows a further 8 funds being prepared across all asset classes. At the last IWG PAF we introduced the initial plans regarding Multi Asset Credit (MAC), Emerging Market Debt (EMD) and Property to add to the Infrastructure and Target Return funds that are in early stages of development. The Private Equity fund 2018/19 Vintage has invested more than 50% of the money committed in January of this year in Funds and co-investments and will be looking at a new vintage later in the year.

All of these are pooled vehicles available to all Partner Funds.

LGPSC is managing 15 mandates/portfolios for individual Partner Funds across all asset classes. Work continues with individual Partner Funds on various segregated mandates and portfolios including sustainable equities, G10 Bonds and other advisory services.

We are also reviewing the legal agreements within these discretionary, advisory and advisory and execution mandates which we plan to share with those Partner Funds invested in late July. This work is being carried out by our legal counsel working with external counsel.

On Responsible Investment and Engagement, we held a summit with you all on the 9th July in Birmingham. We are looking to offer a Climate Risk Monitoring Platform service to Partner Funds that have expressed an interest using a variety of external service providers.

In the past three months we have shared monthly reports from the Active Equities team and the FOF report and the Conflicts report. All of these reports can be found on Cilla available on the LGPSC website. (https://www.lgpscentral.co.uk/client-login/)

In this edition of the report we have added a report from Gordon Ross (Director of Fixed Income) on the outlook for Sterling in these turbulent times for the UK.

We have expanded the investment team in the last 3 months to 24 people and have 5 investment staff joining in the next 3 months and 11 roles in the recruitment pipeline including our investment professional graduate trainee programme.

LGPSC is also looking to add to the Risk & Compliance, Legal, Operations, Programme Management and Finance teams who have been critical to the delivery of these Funds and services for you and the investment team.

As always, we welcome any feedback on this report.

Summary of Strategy thoughts

The last 6 months have seen global equity markets rise 16.8% in sterling terms in the strongest H1 market move for 21 years. The best performing markets were Greece, China, US and Germany and the best equity factors were Growth and Quality.

After such a strong move in Growth Assets it will be a surprise that we are increasing our weighting to Growth assets as we feel the probability of outperformance has improved. This is justified in our view, given economic growth expectations have already been cut significantly, and some leading indicators are suggesting some parts of the world are already in recession. We also note that in sentiment surveys (Bank of America Fund Manager Survey for June 2019) investors are extremely bearish on equities and extremely bullish on cash investments which historically has seen good returns from Equity markets.

Stabilising Assets have done well with the mature government bond market returning 5% over that same 6-month period with nearly all of that return coming from declining yields. Germany, France, Holland, Japan and Switzerland are all seeing negative yields on their 10-year bonds. This opens up the interesting conundrum where we could see borrowers being paid for taking out a mortgage (Makes a very interesting conversation with your Bank Manager). LGPSC remains very cautious on the outlook for Stabilising Assets. We clearly prefer exposure to Income Assets as an alternative where yields and expected returns will combine with a low correlation to those riskier Growth Assets.

LGPSC continues to see the balance of probabilities favouring stronger Sterling in the medium term. Hedging foreign currency assets back to Sterling is something LGPSC continues to support in the current market environment.

Please read on for a more detailed analysis of our views.

Jason Fletcher, Chief Investment Officer

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LGPS CENTRAL LIMITED'S VIEW ON WEIGHTINGS

The following table gives a summary of our view on the 6-18 months tactical positioning horizon.

Table1: Weightings ▲ Upgraded, ▼ Downgraded compared to previous quarter

	Significant Underweight	Underweight	Neutral	Overweight	Significant Overweight
Estimated Probability	80-70%	70-65%	55-45%	70-65%	70-80%
BROAD ASSET CLASS		Stabilising		Income, Growth ▲	
GROWTH ASSET CLASS	Private Equity, GEM Equities ▼	US Equities ▼	UK Equities, ▼ Asia Pac Equities	Commodities	Japan Equities, EU Equities ▲
INCOME ASSETS		Credit, ▼ Insurance-Linked	Property	Infrastructure, EM Debt	
STABILISING ASSETS	JP Bonds, EU Bonds ▼	UK Bonds, ▲ Index-Linked,	IG Bonds, US Bonds ▼	Gold ▼	
INVESTMENT STYLES	Size	Quality/ESG ▼	Growth	Momentum, Low Volatility ▲	Value
CURRENCIES		US Dollar	Euro, Yen	GBP	

LGPSC's view on "Weightings":

- LGPS Central Limited ("LGPSC") remains "Underweight" in Stabilising Assets and "Overweight" in Income Assets. Growth Assets have been upgraded from "Neutral" to "Overweight". Cheap valued Growth Assets with good economic outlook and valuation remain attractive, carried by positive sentiment.
- Equities are the most favoured of the Growth Assets but have seen some changes in terms of regional preferences. Our favoured equities include Europe and Japan.
- GEMs Equities change from strong "Overweight" to "Underweight", mainly due to sentiment change and worsening economic outlook.
- UK Bonds were upgraded but remain moderately underweight and Credit is downgraded to a moderate overweight after the narrowing credit spreads.

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BROAD ASSET CLASSES

Table 2: Growth/Income/Stabilising Assets

	Model Score[1]	View	Investment Notes
GROWTH	2	Overweight	Neutral valuations remain from previous quarter but significant positive sentiment increase
INCOME	1	Overweight	Safe Income in economic downturn , neutral valuation and downside protection
STABILISING	-3	Underweight	Low/Negative expected return, recession priced in, significant negative sentiment impact

Table 3: Historical Annualised Returns (* except for the 3 months, where total return is used)

	3 months*	One year	Three years	Five years	Ten years	Twenty years	Bloomberg Ticker
GLOBAL EQUITIES	13.4%	1.1%	11.7%	6.3%	10.5%	4.8%	FTAW01 Index
PRIVATE EQUITY	25.2%	11.6%	19.3%	13.9%	15.6%	n/a	IPRV LN Index
PROPERTY	21.5%	18.9%	8.2%	9.6%	16.2%	10.8%	REIT INDEX
INFRASTRUCTURE	18.0%	12.2%	9.1%	4.7%	9.4%	n/a	SPGTIND Index
HIGH YIELD	6.8%	4.3%	6.6%	5.6%	13.6%	9.8%	HL00 Index
UK GILTS	5.4%	6.0%	3.2%	6.0%	5.7%	5.5%	G0L0 Index
UK INDEX-LINKED	9.4%	10.0%	8.4%	9.6%	8.8%	6.9%	G0LI Index
GOLD	0.2%	0.3%	5.8%	7.3%	6.5%	9.9%	XAUGBP Index

Source: Bloomberg (NB: assumes dividends were reinvested), Note: listed proxies have been used for Infrastructure, Property and Private Equity.

Table 4: Correlation Matrix (5 year historical correlation)

	FTSE All World AW TR GBP	iShares Listed Private	DJ REIT	S&P Global Infra	Sterling High-Yield	UK Gilt	UK Inf-Link Gilt	XAUGBP Index
GLOBAL EQUITIES	1	0.654	0.550	0.774	0.494	-0.248	-0.140	-0.265
PRIVATE EQUITY		1	0.363	0.489	0.408	-0.178	-0.103	0.008
PROPERTY			1	0.670	0.224	0.236	0.197	0.060
INFRASTRUCTURE				1	0.419	0.030	0.072	-0.015
HIGH YIELD					1	-0.013	-0.002	-0.189
UK GILTS						1	0.827	0.443
UK INDEX-LINKED							1	0.388
GOLD								1

Source: Bloomberg Note: listed proxies have been used for Infrastructure, Property and Private Equity

LGPSC's view on "Broad Asset Classes":

- LGPSC favours Growth Assets due to significant positive sentiment for Growth Assets, high cash levels available and the lack of alternative investment opportunities.
- Equity markets have rallied strongly. Most asset classes have seen good returns above inflation over the last three, five, ten and twenty years.
- Commodities and Gold provide good diversification against equity markets and could be added as a diversifier to the portfolio.
- Fixed Income can be allocated to the portfolio for the same reason, but we remain underweight, given its poor valuation, low expected returns and the unsupportive economic environment.

[1] Refers to LGPSC model as described on page 6

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GROWTH ASSET VIEW

Table 5: Growth Assets

	Model Score[1]	View	Investment Notes
UK Equities	0 ▼	Neutral	Positive sentiment and neutral valuation, but economic and political risks leave an environment of uncertainty
NORTH AMERICA Equities	-2 ▼	Underweight	Expensive valuations are back, and economic risk is higher compared to other geographies. Sentiment now negative
EUROPE Equities	4 ▲	Overweight	Good dividend yields, attractive valuations, and positive sentiment, but economic outlook remains unstable
JAPAN Equities	4	Overweight	Attractive valuation and economics have turned positive, but trade war consequences remain, sentiment is neutral
ASIA PAC Equities	0	Neutral	Economic growth potential, valuations have become more expensive and fears of trade war may overshadow the potential
GEMs Equities	-3 ▼	Underweight	Mixed picture, new negative sentiment and economic growth concerns, expensive valuation
PRIVATE EQUITY	-4	Underweight	High investment cost, sentiment negative, long-term economic outlook uncertain, we recommend selective positioning in quality and stable companies
COMMODITIES	1 ▼	Overweight	Neutral sentiment and exposure to weakening dollar but provides no yield

LGPSC's view on "Growth Assets":

- General recession concerns could have an impact on Growth Assets, with Private Equity suffering the most due to more expensive valuations. But sentiment is positive, and with high cash levels available and possible reversing interest rate environment alternatives are few for that cash burning in investors pockets.
- GEMs remain "Underweight" due to valuations looking less attractive and change in sentiment to negative.
- Japan and Europe are the most attractive regions in terms of cheap valuations, but earnings have reached a high reducing the general potential for growth assets.
- UK changes from "Overweight" to "Neutral" due to lower positive sentiment though political uncertainty could represent a great buying opportunity.

INCOME ASSET VIEW

Table 6: Income Assets

	Model Score[1]	View	Investment Notes
CREDIT	-1 ▼	Underweight	Economic play, valuations more expensive in this quarter and sentiment turning negative
EMERGING MARKET DEBT	1	Overweight	Economic play has strengthened and valuation remains good, but sentiment is negative
PROPERTY	0	Neutral	Relative value, inflation protection, sentiment remains negative and high investment costs
INFRASTRUCTURE	1	Overweight	Relative value, inflation protection, positive sentiment but high investment costs, renewables & sustainable exposure
INSURANCE-LINKED	-1	Underweight	Two bad years and positive sentiment but high investment costs and structural concerns

LGPSC's view on "Income Assets":

- LGPSC retains its favourable view on Income Assets. Emerging market debt "Overweight" view remains mainly based on economic outlook, but Credit has been downgraded due to negative sentiment.
- Property is downgraded by one notch to "Neutral" based on recession outlook, and Infrastructure remains "Overweight".
- Please note that negative sentiment in our model means that the asset is liked/overweight by investors.

STABILISING ASSET VIEW

Table 7: Stabilising Assets

	Model Score[1]	View	Investment Notes
UK BONDS	-1 ▼	Underweight	UK bonds improve due to more attractive valuations and neutral sentiment but remain Underweight
INDEX-LINKED	-2	Underweight	Negative expected return and concern about long duration/interest rates
US BONDS	0 ▼	Neutral	Fair value but increasing deficit and monetary easing, inflation risk and economic growth slowing
JP BONDS	-5	Underweight	Poor valuation and Central Bank policy supportive market, in addition to currency risk
EU BONDS	-4 ▼	Underweight	Negative expected return, economic growth vulnerable due to political uncertainty and EU bank debt issue
IG CORPORATE BONDS	0	Neutral	Corp spreads neutral and anchored to government bond yields, but general good credit outlook
GOLD	2 ▼	Overweight	Favoured Stabilising Asset, when we do not like other Stabilising Assets

LGPSC's view on "Stabilising Assets":

- LGPSC remains "Underweight" for most Stabilising Assets mainly based on the low/negative yields but recognises that they should represent a proportion of the portfolio given the downside protection they can offer.
- "Underweight" view remains for most geographies, in particular for Japan. Only US bonds are "Neutral" due to improved valuations and the US economic outlook. US Feds decision to move to easing indicate significant change to this.
- Gold offers good diversification and a safe haven in turbulent markets and protects against political and economic risks.

INVESTMENT FACTORS (EQUITIES)

Factor based investing provides a way of potentially adding outperformance relative to a market-cap-based approach at a much lower cost than active investing. It recognises that the market-cap-based index does not provide the best risk-adjusted return for a portfolio given its natural overweight to momentum, large cap and expensive stocks. In the following factor model, we have taken the seven factors of value, growth, income growth, size (small cap), ESG, low volatility and momentum and then applied the same criteria we use to consider other asset classes in our model assessing each factor for valuation, sentiment, economic suitability, risk suitability, investment cost and currency. Investment cost in factor-based investing is low relative to the other asset classes, though momentum factors (given their higher turnover) and ESG factors (given their higher index costs) are both scored neutral. Given all strategies are global, the currency scores are all neutral. Note that ESG and quality share similar characteristics. Climate change as a factor is little correlated to specific economic cycles given its long-term investment impact horizon of 10-20 years. The graph below summarises the preferred overweight factor(s) depending on the various stages of the economic cycle.

Economic Cycle and Investment Factors:

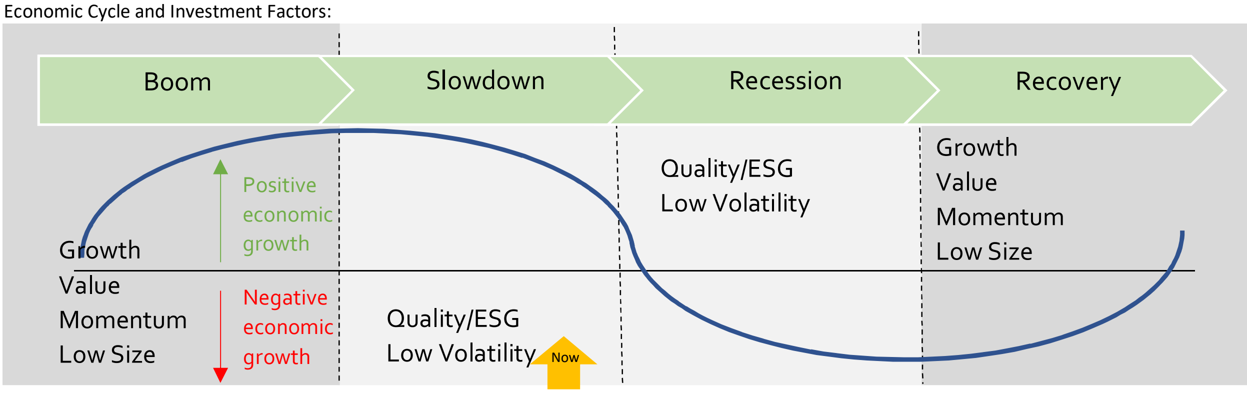


Table 8: Investment Factors

FACTOR ASSET VIEW

Table 7: Investment Factors

	Model Score[1]	View	Investment Notes
Value	3	Overweight	Very attractive valuations, unloved and most favourite factor
Growth	0	Neutral	Poor sentiment and increased risks
Size	-3	Underweight	Concern with slowing economy, negative sentiment and market risk
Momentum	2	Overweight	Overweight based on current attractive valuation and sentiment
Low Volatility	1 ▲	Overweight	Poor long-term performance but has become more attractive due to possible change in economic cycle
Quality/ESG	-1 ▼	Underweight	Positioning in light of potential economic slowdown and protection against market declines, with increased negative sentiment

LGPSC's view on "Investment Factors":

- LGPSC's view on Investment Factors remains broadly the same in light of increased recession concerns, only Low Volatility has changed to "Overweight" and Quality/ESG to "Underweight".
- In light of the current economic cycle, market risk and sentiment, the favoured factor is "Value".

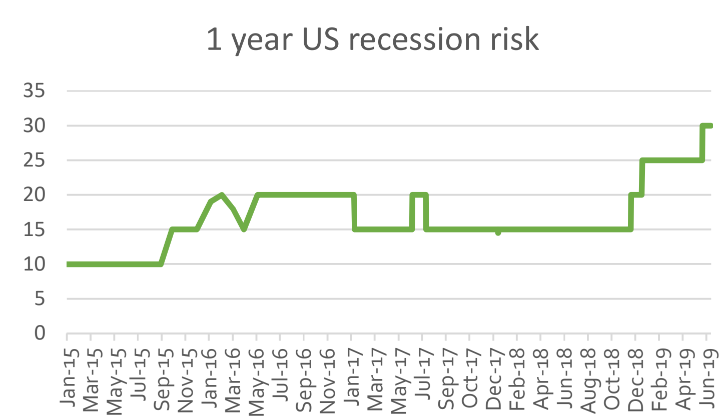
ABOUT LGPS CENTRAL LIMITED'S SCORING MODEL

LGPSC's model scores each asset class against its valuation, sentiment, economic outlook, market risk, currency and investment cost (scored between -2 and +2). Positive scores suggest (strong) overweight and negative scores, (strong) underweight positions. Where a zero is assigned, our view is neutral. The scores for the different assessment areas, e.g. valuation, sentiment etc. are then added to derive the final score for that asset class. We are constantly developing this scoring to include other variables such as ESG measures and technical factors.

RECESSION WATCH

Key indicators for a recession have worsened over the last quarter with 1) a inverted yield curve, 2) a stabilising employment and 3) the changing monetary environment in the US. The amount of corporate debt is a worry in certain markets alongside EU banks' non-performing loans. Chinese domestic corporate leverage is of concern and some areas of the high yield market could pose problems especially if rates were to rise more sharply than expected. Auto finance is also showing some signs of stress. The US growth cycle has been rather long and increased asset volatility may indicate the first signs of a recession in the medium term.

***LPGS Central Limited View** –We see the likelihood of a recession as medium over the next 12 months. 2020 could mark the start of the next recession.*



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Q1 LGPS CENTRAL LIMITED MARKET UPDATE[2]

The second quarter of 2019 again showed a positive picture across the globe in equities, pushing certain markets to all-time highs. The S&P 500 rose by 3.8%, closely followed by a performance of 3.64% by the Eurostoxx 50 (all in local currencies). The FTSE 100 also enjoyed good performance during the quarter returning 2.01%. Japan and Asia Pacific both lost -1.75%/ and -0.26% respectively.

*

The US Michigan Consumer Sentiment is still above its long-term average indicating that positive momentum continues. After the negative equity performance in Q4 2018, the US Michigan Consumer Sentiment fell, but has since recovered. Jobless claims and a small business survey (the Small Business Optimism Index), remain positive suggesting a good economic mood, although overshadowed by a rising risk of recession which is now increasingly highlighted by macroeconomic research. The VIX has remained at lower levels in Q2 2019 and is showing a downward trend, indicating that the market is less uncertain and worried.

*

In Q2 2019, the UK carried on being dominated by politics and Brexit, with the UK economy feeling the strain of a slowdown. The Bank of England cut its forecast for economic growth in the second quarter to zero. The UK and the EU agreed a second delay to Brexit, it is due to happen on 31 October 2019. Cross-party talks between the Government and Labour to try to find a compromise ended without an agreement.

*

The Oil price closed -2.7% down compared to Q1 2019 after it had rallied in the first quarter by 27.12%, reversing Q4 2018 losses. OPEC is aiming to further boost oil prices buy extending production cuts until March 2020. Gold prices increased by 9.1% over the course of the Q2 period. Sterling has strengthened by 2.6% against the USD over Q2 but the direction of travel remains uncertain with Brexit.

*

The US Federal Reserve Board is expected to cut interest rates now, with looming recession risks. Benchmark US yields fell by 49bps amid concern over the economic outlook. In the UK 10-year yields have dropped from 1.0% to 0.83% driven by the ongoing Brexit uncertainty, recession risks and stronger equity markets.

*

In Q3 we expect news to be dominated by Brexit, slowing Chinese growth and more talks about recession risks. Trade war tensions seemed to have eased after the recent G20 meeting but it would take little to have picked up in tension again, and inflation pressure is ceasing but uncertainty about the economic outlook is high.

LGPS CENTRAL LIMITED Q1 RESPONSIBLE INVESTMENT UPDATE

We have previously reported on growing regulatory risk in the mega-cap technology companies, including the FAANG stocks, whose size and growth has made them important parts of institutional portfolios. Over $130bn in market value was lost in Apple, Amazon, Alphabet and Facebook in June when reports emerged that two US authorities (the Department of Justice and the Federal Trade Commission) had agreed on a division of investigatory jurisdictions. These developments compound the regulatory climate in the EU, which has levied fines for anti-competitive behaviour. The companies are also under pressure for content management, data security, and data privacy, with Facebook's Sir Nick Clegg attempting to get on the front foot by stating that regulatory intervention would be welcomed. Those in the running to be the Democrat Party candidate at the 2020 US presidential election have promised tough action, including breaking up the technology majors. Campaign trail rhetoric, especially in modern politics, can be taken with a pinch of salt, but we do see an increasing threat level for a sector that has long been in favour with investors.

*

The UK Treasury Select Committee has established an inquiry that asks, "What steps have UK banks, asset managers, and pension funds taken to 'green' their business models, investments strategies and balance sheets, taking in to account climate and transition risks?"[3] A similar inquiry into the largest UK pension funds was conducted

[2] Performance for the quarter measured over period of 31/03/2019 to 30/06/2019

[3] https://www.parliament.uk/business/committees/committees-a-z/commons-select/treasury-committee/inquiries1/parliament-2017/decarbonisation-of-uk-economy-and-green-finance-17-19/

by the Environmental Audit Committee last year. The outgoing Theresa May has promised to put into legislation a 2050 zero net carbon pledge for the UK. Green advocates have criticised the plan as taking action too late on, and for failing to include the GHG emissions associated with imports. On the other side, some have criticised the plan as too drastic, or as too expensive (for which the current UK Chancellor of the Exchequer received a rapid rebuke). The index provider FTSE Russell has made a subtle change to its index classification by re-naming 'oil and gas' to 'non-renewable energy', in a move reflecting the increasing vilification of the sector. Also, this quarter, the EU has published its proposed 'green taxonomy': a list of the sectors and products required for a transition to a low carbon economy. As we report in our Quarterly Stewardship Report, the taxonomy is not without its critics, but the developments should have a facilitating effect (by establishing a common language and a common set of standards that define 'sustainable') and a stimulating effect (through a kind of Say's Law where the supply of sustainable finance products will likely lead to increased demand for them). No other region in the world has a comparable regime for sustainable finance.

*

Iron ore prices have breached $100 per tonne and hit a five-year high in the first week of July. Prices have climbed following a supply shock at Brazilian miner Vale earlier in the year, where the tragic collapse of a tailings dam claimed over 200 lives and led to the closure of several operational sites. The Brazilian authorities have recommended by 2021 the banning of 'upstream' tailings dams in response to the tragedy. Upstream dams, which collect tailings waste in waterlogged pits that are successively built upon to contain ever-greater levels of tailings waste, number almost 100 in Brazil alone. They are already banned in neighbouring countries including Peru and Chile. Vale's competitors have benefitted from the rising iron ore price, which was further boosted by Australian supply cuts caused by extreme weather events in March. Staying with risks associated with tailings, LGPSC is continuing to support calls for greater disclosure of safety risks and backed letters to 655 companies with requests for data. Some respondents have disclosed tailings dams that pose 'extreme risks' to employees and downstream population. Investor trust in the mining sector may not be taken as a guarantee. In an unrelated incident, 43 persons are reported to have lost their lives at a mining concession owned (via subsidiaries) by Glencore Plc. The mine is located in Kolwesi, DRC, and deals with thousands of illegal artisanal miners trespassing on the concession daily, the intention of whom is to mine commodities without supervision or appropriate safety equipment and sell the product to unregulated middlemen. Glencore stated that there has been no impact to its production as a result of the tragedy.

RISK ANALYSIS

Table 8: Risk in order of probability

RISK	LGPSCL Possibility	LGPSCL Impact	Change	Comment	LGPSC favoured assets to protect against the risk
EQUITY DOWNTURN	Moderate	Moderate	↓	Exaggerated growth expectations, profit taking in the equity market, increased recession risk and limited monetary policy stimulus available could see equity markets fall.	Safe haven assets such as government bonds and gold, increased demand for equity downside protection makes volatility rise, buy volatility early, as short-term measure protect through selling futures
BREXIT	High	High	→	Brexit could still hit the UK economy due to lost trade revenue from the EU and continue having a weakening impact on Sterling which could cause rising exports outside the EU in the medium term. Increasing uncertainty, the EU's unwillingness to re-negotiate a deal and the UK parliament not achieving decision-making progress still make a hard Brexit an option.	A hard Brexit would have a negative impact, but there is also the possibility of no Brexit too which is why LGPS has a balanced view on UK equities
GLOBAL RECESSION	Moderate	Moderate	→	Recession watch factors are pointing towards a possible global recession in 2020 fuelled by US growth stagnating, Chinese debt leverage and elevated interest rates in the US.	Factors such as Quality/ESG and low volatility perform relatively well in a recession. Stabilising and income assets will outperform if economy enters recession
MONETARY POLICY SURPRISES	Moderate	Moderate	→	The inflation outlook is mixed, with some forecasters believing that it will rise and require higher interest rates, and some believing that slowing economic growth will keep it contained. The possibility of a	Underweight Fixed Income, Overweight Infrastructure, Overweight Growth Assets and high-quality credit

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RISK	LGPSCL Possibility	LGPSCL Impact	Change	Comment	LGPSC favoured assets to protect against the risk
				global recession adds further doubt into the mix. Low levels of interest rates in most countries mean that there is limited monetary policy action available in the event of low inflation levels. Markets could be surprised by monetary policy in either direction.	
POLITICAL RISKS	Moderate	Moderate	→	Euro break up risks are reduced due to negative Brexit example (the UK). However, there is a considerable amount of other political risks arounds the globe, such as North Korea, tensions in India and domestic US political risks.	Overweight protective assets such as Gold, non-Euro assets, buy Sterling, buy US Dollar
FAANG RISK	Medium	Medium	→	Technology companies could be impacted by new taxes or other pressures as a result of increased regulatory focus. Recent fines issued over technology companies could hit further companies. In addition, technology companies are exposed to increased Cyber Risk as well as the technology market reaching a saturation point.	Underweight technology
ISOLATION & PROTECTION/CHINA	High	High	↑	General trade war concerns from 2018 carry on their trend in 2019 with increased negative sentiment and worries about the consequences. Negative consequence for China could be expected from potential boondoggle projects designed to target employment levels alongside the general overleveraged China concerns.	Slowdown of economic growth and de-stabilising effect, overweight Gold and insurance linked, overweight US equities, underweight GEMs
CREDIT RISK/DEBT ISSUES	Medium	Moderate	→	UK political risks are increasing, EU banks have not taken enough non-performing loan action, China and Automotive debt are concerns at present.	Underweight EU and China, underweight selective credit, such as Automotive. Incorporating ESG reduces Credit Risk.
CLIMATE-RELATED TRANSITION RISK	Medium	Moderate	→	- Generic Carbon price at 10-year high - UNPRI is highlighting risk - Investment gap in transitioning the energy system equal to 2.4% of GDP	Underweight Energy & GEMs, overweight Renewables and sustainable investment themes such as Infrastructure
CLIMATE-RELATED PHYSICAL RISK	Medium	Moderate	→	- US Billon Dollar Disaster Event Frequency: Average based on last 5 years, modestly above average based on last 38 years. - Catastrophic Economic losses for EMEA for 2018 well under 10-year average. - Catastrophic Economic losses for US for 2018 at record low compared to 10-year average.	Hold a well-diversified portfolio

LGPSC's view on "Scenario Risks":

- LGPSC's view is that with a well-diversified portfolio, the majority of key risks from these scenarios should balance out any strong negative impacts. Alternatively, short term asset adjustments can be made to the portfolio to seek protection or a derivative overlay can hedge out undesired negative impacts and provide protection.
- It is our view that the next 12 months should produce a positive return for Income Assets and will probably see low to negative returns for Stabilising Assets. Our opinion is that fixed income does not offer good risk adjusted returns for pension fund money at this time and should remain underweight. Growth Assets have become more attractive due to a change in sentiment and the lack of other investments offering return alternatives. As a result, we have reduced the equity downturn risk.
- Tensions between US and China resurfaced stronger and hence trade war risk between China and the US has been increased.
- Please note that this table and comments will be updated by the Investment Team for the next quarter.

SPECIAL FEATURE 1: CURRENCY RISK

Gordon Ross
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ID Fixed Income
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LGPSC Thoughts on GBP valuation

We continue to believe that GBP is fundamentally and technically cheap at current levels on both a valuation and technical basis.

Obvious catalysts to the current valuation levels have been (and will continue to be) some or all the following:

Brexit uncertainty (Deal. No deal, 'Soft', 'Hard', Before October 31st deadline or a further lengthy postponement, whether it happens at all?);

Conservative leadership 'battle';

Potential General Election; Possible Labour Government

Sizeable current account deficit (UK)

Sterling versus US Dollar (Cable) 5-year chart – low @ 1.1841 7th Oct 2016   Post Brexit vote on election fear of Labour Govt.

Source: Bloomberg

The recent lows of 2016 (1.1841) reflected some of the fears above and puts a potential 'floor' in the value of GBP, having been hit after the Brexit vote and following the last election when the markets were beginning to discount the possibility of a Labour government.

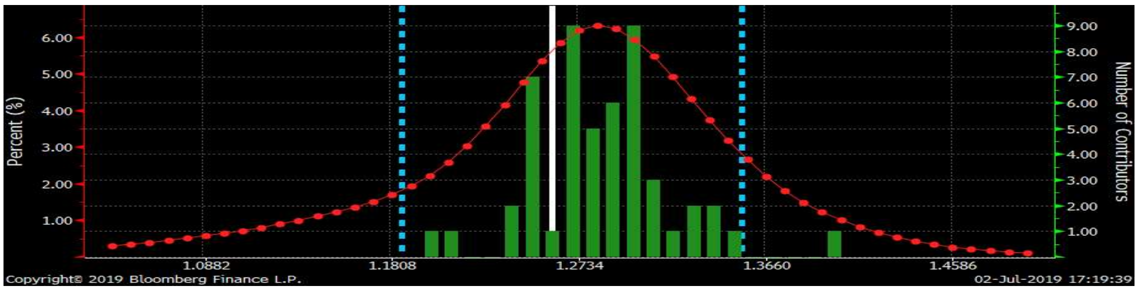
Currency markets like 'big' numbers and 1.25 and 1.20 would certainly fit this description. There is likely to be a good initial support level that will hold firm at least for a period as all the option hedgers try to protect positions. Such levels typically get tested three times before they break, but many times are seen to be good support (or resistance) levels, from which a market will bounce (fall).

GBP Trade Weighted 29-year chart – further evidence of just how weak GBP is currently (almost a 'Lehman Low')

Source: Bloomberg

On a broader measure, the long-term Sterling trade-weighted index is also approaching good support levels going back to 1990. This gives further comfort to the possibility that current levels have a lot of negatives already priced in. Interestingly the number of 'Cable' shorts has reduced over the last month to more 'normal' levels having been one of the biggest positions placed over Q1 and ahead of the original end March Brexit deadline, although they (the short positions) have been increased following PM Teresa May's announcement that she would stand down in June.

Model forecast of Distribution of Analysts Estimates for Dec 2019 1.3500 (shows 1 STD Dev)



Source: Bloomberg

The profile shows the forecasts of external commentators on the future value of 'Cable' for the end of 2019. This is a 'live' survey that changes daily, but currently shows a mean forecast around 1.34.

Market action since the beginning of the year has seen Cable trading in a relatively tight range between 1.27 to 1.32 with the January and May declines directly linked to political events (The 'No ' vote in parliament for May's exit plan and the recent 'when will she go' uncertainty)

Sterling versus US Dollar (Cable) Year to date candle stick chart chart – as at 4 July 2019

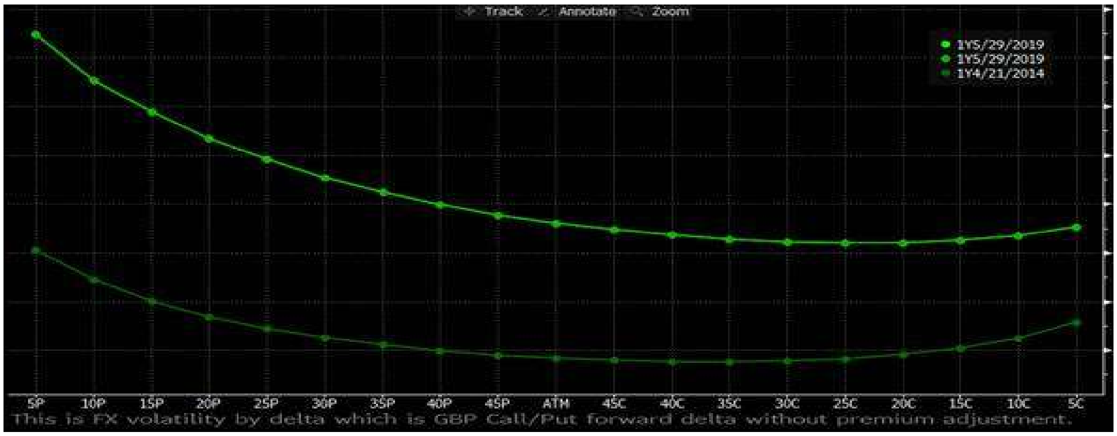
Source: Bloomberg

A large amount of bad news has been priced into GBP at current levels. We believe that the bigger risks would be on the upside (for GBP to rally). The longer and messier that the Conservative leadership contest becomes, the more likely that the GBP short positions will be re-established. Any favourable news will lead these to be covered quickly and participants to join any bullish momentum that ensues. Support levels around 1.25 and 1.20 could hold (?).

Recently, the US markets have discounted the possibility of the FED providing 75 basis points of rate cuts over the remainder of 2019 which has the potential to put downward pressure on USD on carry terms? In addition, President Trump has turned his focus from complaining about the FED's maintaining rates too high to implying that he may instruct the Treasury Department to sell USD to counter currency manipulation that he believes is being pursued by China and Europe. Were this to happen (and the US has not intervened in the currency markets since 2011), this could begin a weaker USD trend and may benefit GBP?

The above re-iterates the view expressed in the Q2 2019 LGPS Central Limited (LGPSC) Quarterly Tactical Asset Allocation report (attached): LGPSC's view is that there is higher likelihood for GBP appreciating than depreciating against the USD, (USD to depreciate and Yen & Euro neutral). This is supported by the downside volatility currently being relatively high compared to the last 10 years cost of downside protection

Option volatility (by delta) showing comparative cost of protection - higher cost of downside protection



Source: Bloomberg

For example in relation to USD/GBP, trading near its historical lows, there could be an incentive to have an equity currency hedge ratio >50% given that movements in one direction are more likely than in the other, while maintaining or reducing the 50% hedge ratio for Euro and Yen.

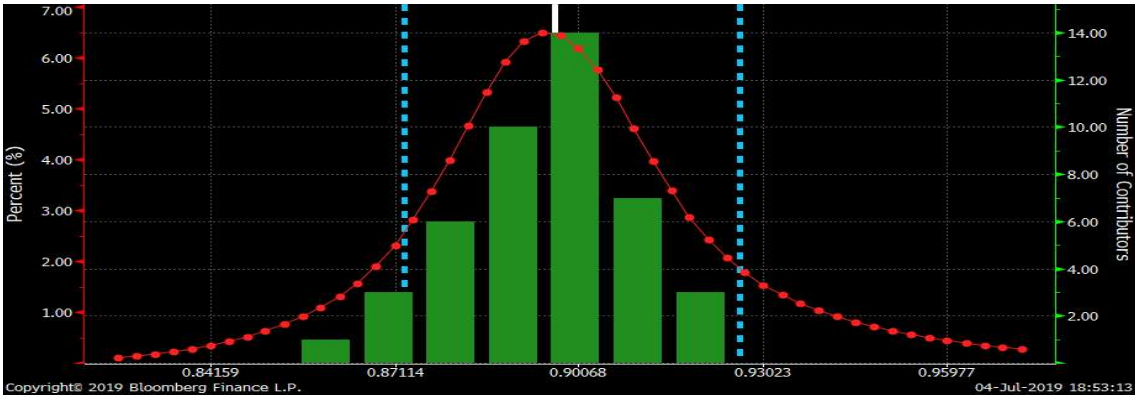
Nearer to home, the GBP/EUR continues to trade in a relatively tight trading range and has done since Q3 2017.

Euro versus Sterling 5-year chart – low @ 0.6945 17th July 2017

Source: Bloomberg

As explained above, GBP has been on a generally weakening tend, but Euro has had problems of its own over the period. Concerns about Italian political pressures and the weakening growth in Germany and other core European economies has led the European Central Bank (ECB) initially to delay any prospect of tighter monetary policy and in the last few months, to openly talk of the possibility of lower rates combined with the announcement of the September beginning of Targeted Long Term Refinancing Operations 3 (TLTRO 3). ECB rates are already negative with many core market (Germany, France, Netherlands) showing benchmark bond markets even beyond 10 years with negative yield and German 10 year yields now yielding below the ECB deposit rate of minus 0.40 basis points. All these factors have kept the Euro relatively weak against the globally strong USD, and rangebound against GBP.

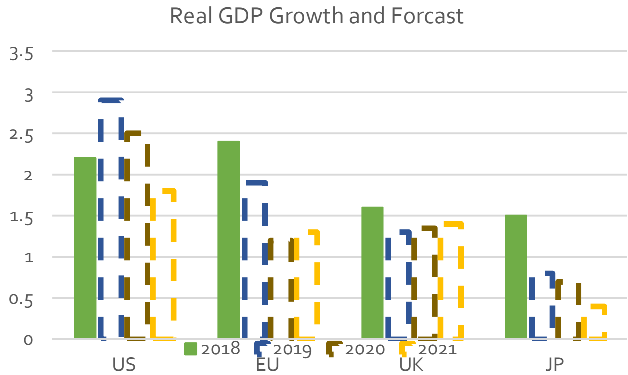
With the prospect of lower ECB rates and despite the uncertainties of Brexit and its possible effects on GBP, forecasters have estimates of the cross little changed into the end of 2019.



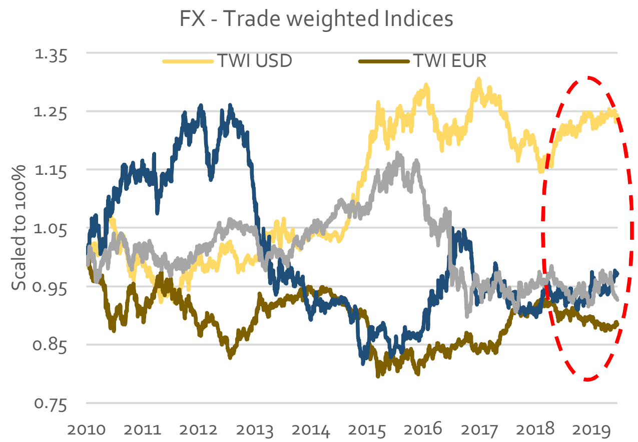
Source: Bloomberg

In conclusion, the balance points to the risks that GBP is at the lower end of its current trading range and from technical and a positioning background, the risk trade is for a GBP rally, a direction that we believe is most likely.

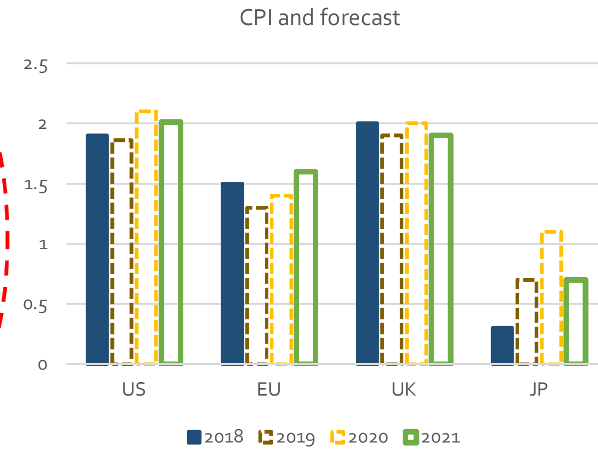
APPENDIX 1: ECONOMIC OUTLOOK



Since last quarter the World Economy forecasts have been corrected downward for the EU and UK, whereas the US and Japan have remained stable.



The trade-weighted strength of the Dollar has increase slightly after a period of stabilising.



Inflation forecasts have not moved much since the last quarterly update and broadly remain the same across the globe.

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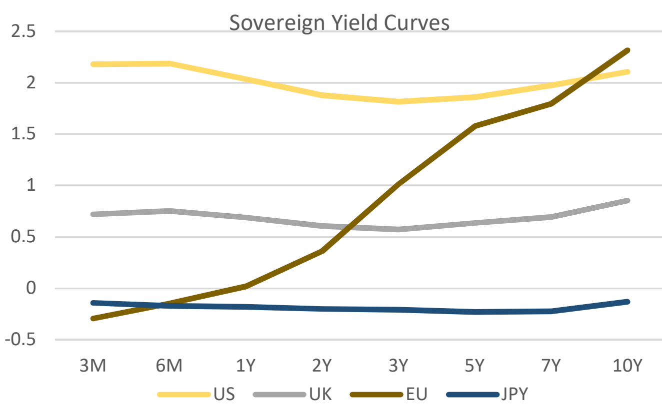
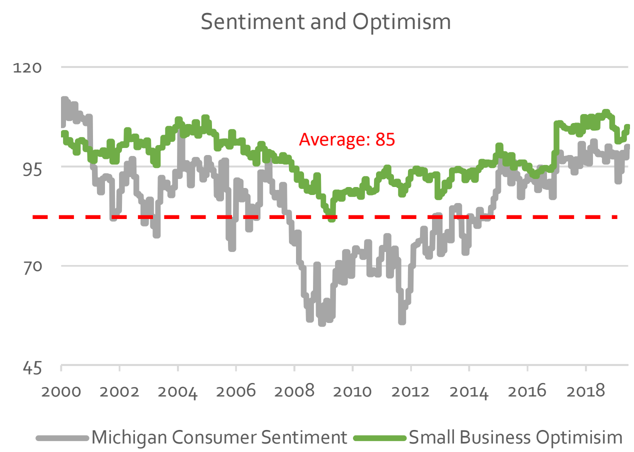
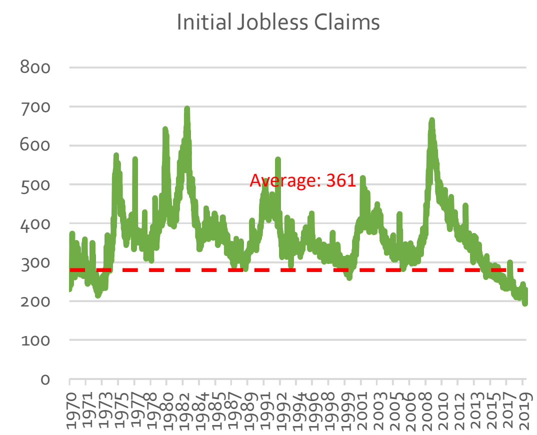


US Sovereign yield curve shows signs of inversion mainly due to US growth concerns and the US-China trade war provoking a more dovish policy stance.



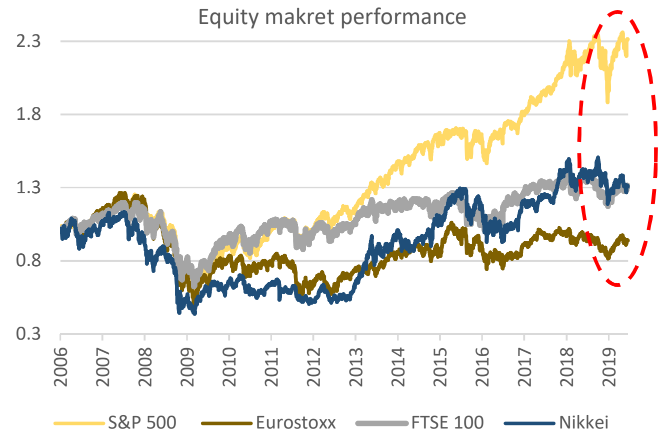
Consumer confidence remains well above average, with recent positive confidence pushing the average from 83 to 85 ...



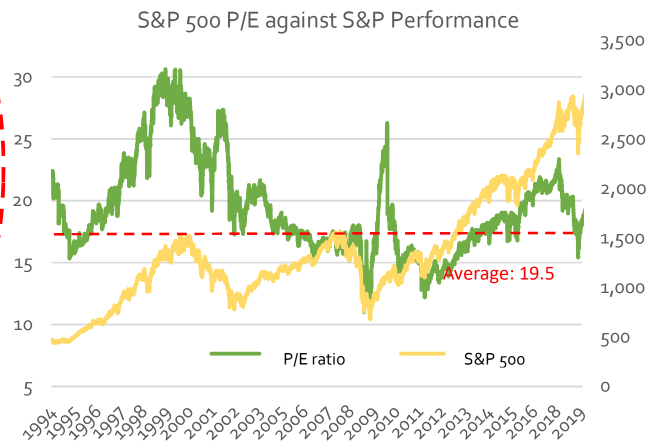
..... with initial jobless claims providing a similar positive picture b below long-term average and showing a falling trend.

Source: Bloomberg, OECD, data as of 17/06/2019

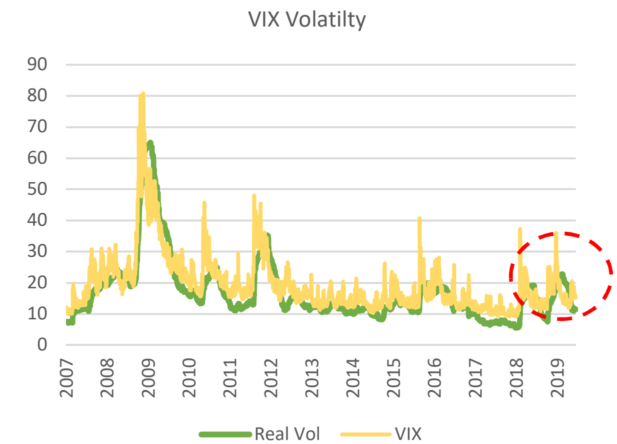
APPENDIX 2: MARKET OUTLOOK



The US has significantly outperformed the rest of the world since 2009, since YTD markets have been relative stable across the Globe.



The current S&P P/E is 18.9 slightly higher the previous quarter with 18.1 and remains below its long-term average.



Implied volatility remains low and close to historical volatility indicating a confident equity market.

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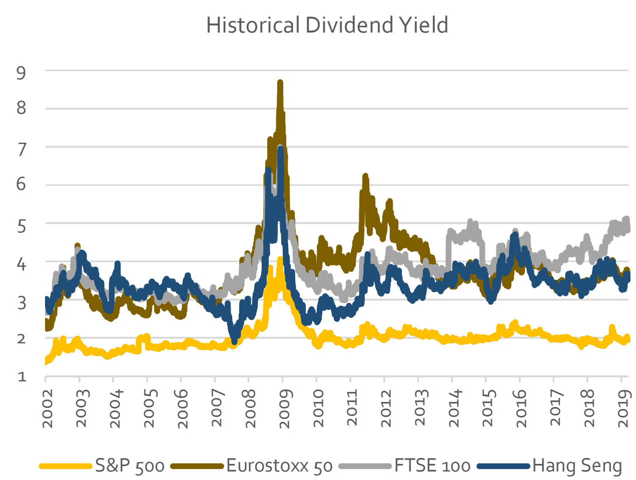
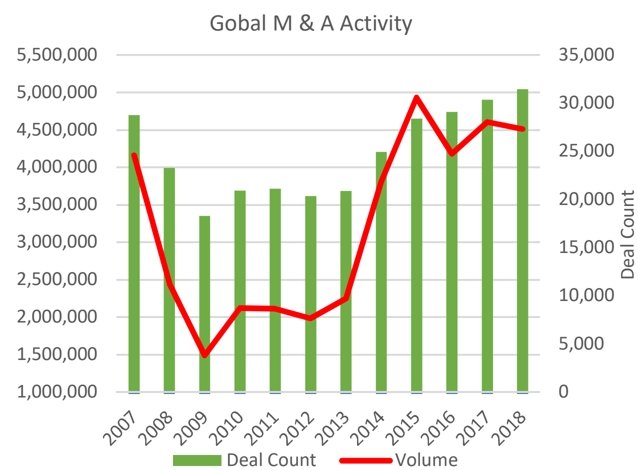
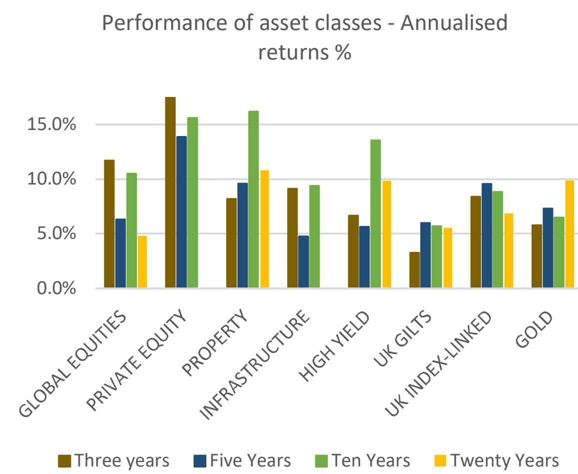


Dividend yields show a slight upwards trend, with the UK showing a strong dividend yield over the last couple of years.



M&A activity paints a similar picture to IPO deals and has seen an increase in deal activity compared to Q4 2018, in particular in the UK.



Recent positive equity market performance has brought 1 year performance in positive territory, over the long-term good returns can be observed across asset classes.

Source: Bloomberg, OECD, data as of 17/06/2019

APPENDIX 3: INVESTMENT IDEAS – MEET THE TEAM

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Please contact Callum Campbell, Head of Client Services and Stakeholder Relations, if you would like to discuss the views outlined in this report with LGPS Central's Investment Directors

1 Selective Overweight Private Equity (O. Ghafur)

- Fund raising environment remains robust, with substantial "dry powder" for investments;
- Possibility of PE Managers overpaying for assets due to increased competition;
- Favour PE downside protection (e.g. private debt) and high quality/low risk
- Direct investment in defensive companies/sectors and/or upper quartile managers
- Sell unattractive and legacy assets

2 Underweight Fixed Income (G. Ross)

- 0.75% nominal yield on UK 10yr Gilt is not a sufficient return to meet future liabilities which are inflation-linked
- Rising inflation is bad for Gilt returns
- Yields to turn upwards as multi-year lows are reversed

3 Neutral property – Negative Outlook (M. Hardwick)

- Heightened sensitivity to Brexit deterring some investors and slowing investment activity
- Continued pressure on Retail valuations likely to accelerate as valuation departments assert their independence
- Retail will present value at some point, just not yet
- Occupational demand a mixed bag but slowing even in strongest sectors
- Yield still attractive versus other asset classes

4 Overweight infrastructure (M. Hardwick)

- Expensive historically but good value versus bonds
- Opportunities may arise from some global investors paring back interest in UK
- Maturing pension schemes and better funding levels should support demand
- Fears of nationalisation of infrastructure assets under a future Labour government could impact investment returns especially in light of political instability emanating from Brexit deal rejection

5 Overweight Equities (M. Hardwick)

- Sentiment for equities at extreme lows and positive sentiment to cash of extreme highs
- Economic growth expectations set a low level with increased recession expectations
- Valuations moderately expensive but attractive Dividend Yield of 2.9% in low interest rate environment

GLOSSARY:

GEMs	**Global Emerging Markets**
ESG	**Environmental, social and governance**
LTM	**Last twelve months**
IG	**Investment Grade**
VIX	**S&P Implied Volatility Index**
IPO	**Initial Public Offering**
OPEC	**Organisation of Petroleum Exporting Countries**
FAANG	**Facebook, Apple, Amazon, Netflix & Google**
UNPRI	**Principles for Responsible Investment**
YTD	**Year to date**
PE	**Private Equity**

All information is prepared as of 18.06.2019, if not stated otherwise.

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