



Irish Life MAPS®

QUARTER 1 (Q1) 2019: JANUARY TO MARCH

The Irish Life Multi Asset Portfolio Funds (MAPS) are available on a range of products provided by Irish Life, managed by Irish Life Investment Managers.

Welcome to the MAPS quarterly update for quarter 1 2019. In this edition...

- We look back and comment on some of the key issues in the markets over the quarter, including the new interest rate halt policy by the US Federal Reserve, the improved hopes of a trade deal between the US and China and the continued confusion and uncertainty in the UK over Brexit as well as other issues.
- We outline and review the key drivers of performance since launch within MAPS.
- We review the asset classes in more detail illustrating the significant diversification which helps deliver smoother returns.
- We provide an update on some of the key strategies used to manage risk in MAPS including Global Low Volatility Shares, Dynamic Share to Cash Model (DSC), Option Strategy, Currency Hedging and Quarterly Rebalancing.
- We outline details on the external managers and the alternative investment strategies used in MAPS including an update on some changes made during the quarter.

IRISH LIFE MAPS® FUND PERFORMANCE

Having finished 2018 on a very negative note, global equity markets rebounded strongly in the first quarter of 2019, recovering the losses experienced at the end of last year, delivering a return of 12.4% in local currency terms (14.4% in euro terms) over the quarter. Two main developments contributed to the recovery in markets. First was the policy change announced by the US Fed when it announced plans to leave interest rates unchanged in 2019 compared to its year end guidance of two rate rises this year. The second main development which helped contribute to the gains in stock markets was growing hopes of a trade deal between the US and China. The potential for a trade agreement was viewed as a means of removing a significant question mark on global growth which had acted as a drag on activity through much of last year.

The table below shows the annualised returns on each of the five Irish Life MAPS funds to the end of quarter 1 2019 since launch (17 May 2013) and over the last 1, 2, 3, 4 and 5 years. Irish Life MAPS is a long-term investment and we would always advise caution when looking at fund performances over time periods of less than five years.

FUND	MAP2	MAP3	MAP4	MAP5	MAP6
SINCE LAUNCH p.a.	3.4%	5.0%	6.8%	8.2%	7.9%
5 YEARS p.a.	3.9%	5.8%	8.0%	9.6%	10.1%
4 YEARS p.a.	2.7%	3.7%	4.4%	5.2%	5.1%
3 YEARS p.a.	3.2%	5.0%	6.5%	8.1%	9.6%
2 YEARS p.a.	2.2%	3.1%	3.7%	4.5%	4.9%
1 YEAR	1.9%	2.9%	3.7%	4.3%	4.0%

Source: 'Moneymate'. Gross returns shown to 31 March 2019 before any fund management charge.

Warning: The value of your investment may go down as well as up.

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ECONOMIC LOOK-BACK Q1 2019

THE MORAL OF THE STORY

"Motion sickness occurs in connection with travel or movement when an incongruity comes about between visually perceived movement and the vestibular system's sense of bodily movement and symptoms include dizziness, fatigue, vertigo, depressed appetite, nonspecific malaise, gastrointestinal discomfort and nausea". Source: Wikipedia.

I can only assume that investors may have experienced some, or all, of the above during the rollercoaster markets at the end of 2018 and beginning of 2019. Thankfully, what was lost on the loop-the-loops was more than recovered in the zero gravity vertical lift. In fact, the start to markets in 2019 is the strongest in 20 years for the S&P 500. More evidence too, if it were needed, that short term volatility is back with a bang. It also reinforces what might otherwise seem obvious -



at no point in a rollercoaster ride should you consider getting out of the car with a view to re-joining the ride for the less bumpy bits. It is unlikely to end well. The moral, as with investing, is that when you get in, you are almost certainly better off staying in.

FROZEN FED

The increases in US interest rates have finally come to a halt. Initially used to manage inflation concerns during the strong US economic recovery, they now look to have peaked. Indeed, President Trump has recently been agitating to reverse the trend in rising interest rates in order to keep the recovery going. Perhaps he knows what the US economy needs better than the US Federal Reserve or perhaps he is just positioning himself for a second term in office. Either way, future rate increases are on ice for now.

CHINESE TAKEAWAY

China/US trade talks progressed in the early part of 2019 as China agreed to significantly increase US imports and Trump removed the threat of a potential \$200bn in tariffs on Chinese imports to the US. Key takeaway - if signed, the deal will boost global industrial production and investment activity for the rest of the year.

SHARES, BONDS, COMMODITIES AND CURRENCIES

Over the quarter, the MSCI AC World equity benchmark rose 12.4% (14.4% in euro). The US rose 13.9% (16.0% in euro) following the policy u-turn announced by the Fed and easing recessionary fears. Europe (excluding UK equities) rose 12.6% (12.7% in euro) similarly benefitting from the more accommodating policy stance adopted by the European Central Bank (ECB) and also growing hopes of a potential rebound in Chinese growth if trade deal with the US is agreed, given Europe's sensitivity to the Chinese economy. Japan lagged most markets, rising just 7.8% (8.8% in euro) as economic data disappointed while there were lingering concerns over the potential impact of the planned VAT increase scheduled for October. The UK also underperformed, rising 9.4% (13.9% in euro) due to the ongoing Brexit related uncertainty.

In Bond markets, global bond yields fell following the adoption of more accommodating policy stances by global central banks, continuation of weak European economic data and the persistence of low inflation. The Intercontinental Exchange BofA Merrill Lynch Eurozone > 5 year government bond benchmark index rose 3.8% during the quarter. The German 10 year yield fell back into negative territory, ending the quarter at -0.07% as the ECB pushed out guidance in relation to the expected timing of the next interest rate rise.

In currency markets, the Euro weakened due to the pushing out of expectations regarding the next ECB interest rate rise, weak Eurozone economic data and political uncertainty related to Brexit. The Euro ended the quarter at 1.1218 against the US dollar.

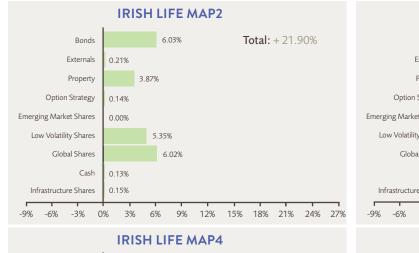
Commodities rose 15.0% (17.0% in euro) over the quarter. WTI oil rose 32.4% as OPEC (Organization of the Petroleum Exporting Countries) began to implement new production cuts announced at the end of 2018, tensions in Venezuela restricted oil supplies and production disruptions were also evident across other regions.

Source: David Haslam, Head of Retail, Irish Life Investment Managers (ILIM), 31 March 2019.

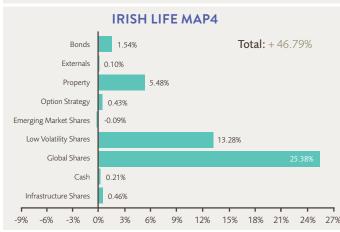
PERFORMANCE BREAKDOWN

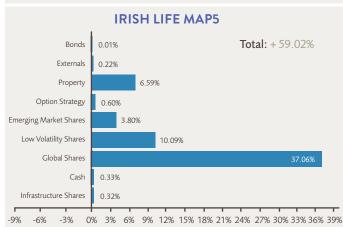
The graphs below split out the total performance for each Irish Life MAPS fund since launch (17 May 2013) to 31 March 2019 into each of the main component asset classes. For more information on these asset classes, see pages 8-11.

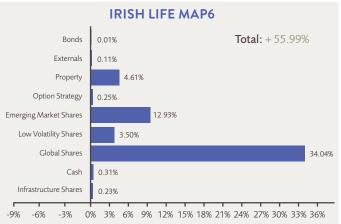
Taking Irish Life MAP 3 as an example, it is up 32.87% over this period. This 32.87% can be broken down as shown below - with 13.60% coming from Global Shares, 8.97% from Low Volatility Shares, 4.13% from Bonds, 5.23% from Property, 0.24% from Cash,0.17% from the External Managers, -0.05% from Emerging Market Shares, 0.30% from Infrastructure Shares and 0.28% from the Option Strategy.











Source: ILIM, 31 March 2019.

The data above is based on 'Moneymate' fund performance and the breakdown of the individual asset class returns is approximate. Performance is before taxes and charges. The data above allows for the relevant asset splits and the effect of the annual reviews of the funds over that period - some examples: the move from Minimum Volatility Shares to Low Volatility Shares, the various changes in External Managers, the move from Developed Market Shares to Global Shares and changes made in 2017 such as the introduction of the Option Strategy and High Yield Bonds. It also allows for the impact of tactical allocation changes over the period.

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IRISH LIFE MAPS® ASSET SPLIT

There are five Irish Life MAPS funds to suit different attitudes to risk. The table below shows the strategic asset mix for each of the funds. As you can see the lower risk fund Multi Asset Portfolio 2 (MAP2) has a very high percentage in bonds and cash, which are traditionally less volatile assets. The higher risk fund MAP6 is predominantly invested in shares, which are traditionally more volatile than bonds or cash but have, in the past, given better long-term returns.

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FUND NAME	MAP2	MAP3	MAP4	MAP5	MAP6
Bonds	42.0%	25.5%	10.5%	0.0%	0.0%
External Managers/Alternatives	22.0%	22.0%	22.0%	12.5%	5.0%
Property	6.0%	7.5%	7.5%	7.5%	5.0%
Emerging Market Shares	0.0%	0.0%	0.0%	10.0%	32.0%
Low Volatility Shares	5.0%	10.0%	15.0%	11.0%	6.5%
Global Shares*	11.0%	22.0%	33.0%	45.0%	45.0%
Infrastructure Shares	1.0%	2.0%	3.0%	2.0%	1.5%
Option Strategy	3.0%	6.0%	9.0%	12.0%	5.0%
Cash	10.0%	5.0%	0.0%	0.0%	0.0%

^{*} Global Shares use the DSC model - See pages 7 and 8 for more details.

The above table shows the strategic asset mix and ILIM rebalance back to this mix on a quarterly basis. For the latest actual Irish Life MAPS fund mixes which allow for any tactical or DSC changes for example, see the relevant MAPS fund factsheet at www.irishlife.ie.

ILIM will continue to monitor and review these assets and may change them over time.

IRISH LIFE MAPS RISK MANAGEMENT

Irish Life MAPS® Diversification

As the table above shows each of the Irish Life MAPS funds is diversified across a range of asset types - shares, bonds, property, cash and external managers / alternatives.

Within each of these different asset types, there is even further diversification. For example, within the share asset class there is an allocation to Global Shares, Low Volatility Shares and the Option Strategy added last year, each of which generates a return in a different way. Global Shares aim to capture the movement in share markets across the developed and emerging markets. The Low Volatility strategy invests in shares with certain characteristics that aim to deliver a smoother journey, while the Option Strategy aims to generate a more stable return through the regular sale of put options which provides some downside protection if markets fall, and for which the funds get paid a fee. The extent and type of diversification that exists in each asset class is shown in more detail on pages 8-11.

This level of diversification aims to ensure that the performance of the funds is not dependent on any one asset type, sector, geographical region, investment manager or investment style. Removing this dependence aims to produce a smoother investment journey over the longer term.

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Regular Reviews

ILIM undertake a regular review of Irish Life MAPS, evaluating the current asset and manager allocations to ensure they continue to represent the best of ILIM thinking and capability with respect to achieving their long term risk and performance objectives. The process takes into account the short, medium and long term expected outlook for investment markets with a view to optimising the strategic fund mix. Typically in these reviews, ILIM are looking for opportunities to either enhance risk management and/or increase the expected fund returns. This process involves reviewing investment opportunities such as new managers, asset classes, strategies, geographies, developments in quantitative research and simulating how best to incorporate any prospective changes into the existing funds allowing for the complexity, time, cost and benefit of doing so.

Rebalancing

One of the most important risk management tools used by ILIM is quarterly rebalancing of each Irish Life MAPS fund. The example below shows why rebalancing is important and what could happen if it did not take place.

START YEAR 1



We start with this pie-chart, which shows a fund with 50% in shares, 25% in bonds and 25% in other assets/ external managers.

START YEAR 2



If, over the course of a year, shares grew in value by 20%, while bonds and other assets/external managers both fell in value by 10%, then, without rebalancing, the second pie-chart shows the new split of the fund. Here 57% of the fund is now invested in shares.

START YEAR 3



If the same thing happened again, we would end up with nearly 2/3 of the fund invested in shares. This fund mix may no longer be suitable for someone who originally chose an allocation with 50% in shares, 25% in bonds and 25% in cash.

This change in asset split can be avoided by regularly rebalancing the fund to ensure that it stays in line with its intended split. ILIM rebalances each of the Multi Asset Portfolio Funds on a quarterly basis and this means that each fund will not drift over time. This means that you don't have to worry about a fund becoming a higher risk rating than the one originally invested in.

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Global Low Volatility Shares

STRATEGY

The strategy aims to deliver share market returns with lower risk:

- · Focus is on minimising maximum losses
- Low Volatility Shares were extended to include Low Volatility Emerging Market Shares in early 2017.
- Stock selection is based on a range of low risk factors and defensive qualities.

HOW IT WORKS

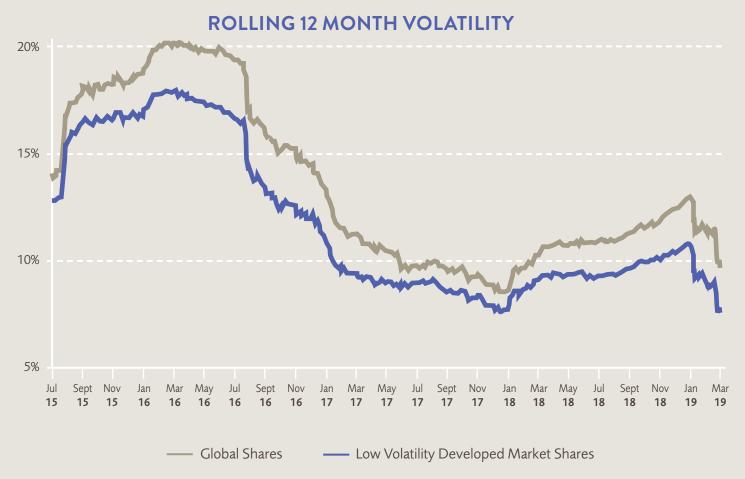
ILIM have identified key factors (valuation, risk, technical, quality and dividend) which when combined with defensive sector allocations minimise the total potential fall experienced by shares over time.

KEY BENEFITS

This strategy aims to deliver the following key benefits:

- Reduce the peak-to-trough losses in periods of market stress
- Manage volatility
- Maintain share market returns over the longer term.

The chart below illustrates the reduced annualised 12-month rolling volatility of the Low Volatility Developed Market Shares Strategy compared to the Global Shares portfolio from 2015 up to 31 March 2019.



Source: ILIM - The information above is correct as at 31 March 2019. Performance/Volatility is gross of taxes and charges.

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Dynamic Share to Cash Model



Each Irish Life MAPS fund uses the innovative Dynamic Share to Cash (DSC) model on the Global Shares portion of each MAPS Fund. The DSC is a quantitative model that has been developed by ILIM and it uses a number of factors across three broad categories.

The DSC signal is at +0.57 at the end of March, on a scale of +2 to -2, compared to -0.60 at the end of December. DSC is fully invested in shares above zero. Below zero DSC moves progressively from shares to cash and is fully in cash at -2. As outlined above, the DSC signal is currently positive so there is full exposure to Global Shares as at the end of March.

The DSC aims to reduce the amount invested in shares and increase the amount in cash when it identifies greater potential for stock market falls.

The factors include:

FACTOR CATEGORY	MARKET MOMENTUM	VALUATIONS	GLOBAL MACROECONOMICS
OBJECTIVE	Take account of trends in shares	Take account of long-term valuation of shares	Take account of the influence of global economics on shares
INDIVIDUAL FACTORS	12-month share market momentum200-day moving average	Long-term share valuesEarnings qualityEarnings yieldEarnings Revisions	Real GDP growth rateBond yield curve slopeEnergy price levels
QUARTER 1 2019 UPDATE	The Momentum factor signal contribution increased significantly as a result of Equities rising above their 200 day moving average.	The Valuations factor signal decreased further, driven by falling earning yields and to a lesser extent by falling valuations and poorer earnings quality.	The Macroeconomic factor signal increased slightly, primarily due to a fall in longer term bond yields.
QUARTER 1 2019 INDICATOR	+	-	+

Based on how these factors move over time, the DSC will decide how much of each Irish Life MAPS fund to invest in Global Shares and how much to invest in cash. ILIM will regularly monitor and review these factors.

Currency Hedging

ILIM manage the risk of exposure to foreign currencies in Irish Life MAPS by partly hedging any exposure. This risk management process was further enhanced last year by the development of a systematic currency hedging process. This operates on each of the Irish Life MAPS funds.

STRATEGY

The strategy aims to reduce the risk of experiencing negative returns from foreign currency moves. This is achieved by hedging non-euro currency exposure when it is beneficial to do so.

HOW IT WORKS

ILIM use a systematic approach to identify key factors (valuations, market momentum, etc) that when combined aim to indicate when it is beneficial to hedge foreign currency exposure.

KEY BENEFITS

This strategy aims to reduce the volatility of the returns in shares, reduce the potential losses from negative moves in foreign currency and reduce peak-to-trough losses over time.

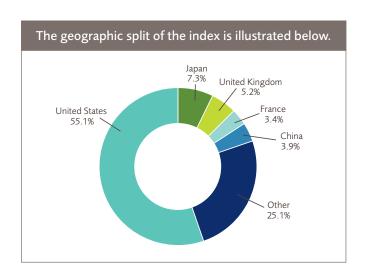
ASSET CLASSES EXPLAINED



Shares

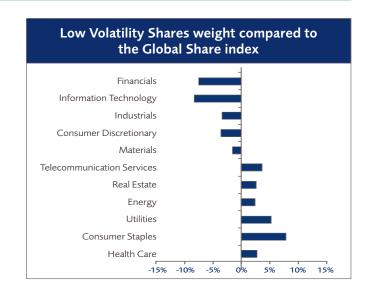
GLOBAL SHARES

- ILIM track the performance of a large global share index.
- There are over 2,800 individual company shares represented which operate in 11 different sectors.
- We use the DSC model (explained on page 7) on Global Shares.
- Global Shares includes about 10% in Emerging Market Shares.
- For the percentage of Global Shares in each Irish Life MAPS fund, see the latest factsheet on www.irishlife.ie.



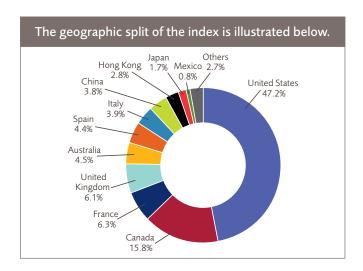
GLOBAL LOW VOLATILITY SHARES

- Using a detailed, quantitative strategy, ILIM choose shares from a broad global share index which not only have shown lower volatility in the past but which are also screened for other indicators such as value, momentum, etc for example.
- ILIM choose over 200 shares to make up their Low Volatility Shares fund.
- For more information on our Low Volatility Shares, see page 6. For the percentage of Low Volatility Shares in each Irish Life MAPS fund, see the latest factsheet on www.irishlife.ie.



INFRASTRUCTURE SHARES

- ILIM track the performance of a large global Infrastructure Shares index.
- There are approximately 100 individual company shares represented, investing in sectors such as airports, toll roads, railways, ports, water, gas and many others.
- These infrastructure shares come mainly from developed market economies but also some from emerging markets.
- For the percentage of Infrastructure Shares in each Irish Life MAPS fund, see the latest factsheet on www.irishlife.ie.



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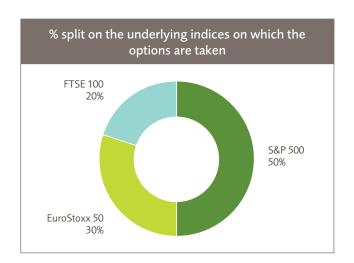
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Shares continued

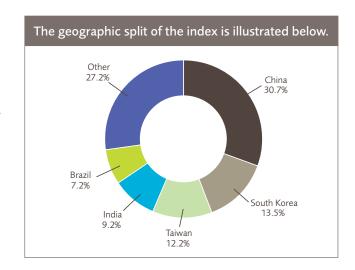
OPTION STRATEGY

- The option strategy further diversifies the allocation to shares (in addition to DSC and Low Volatility Shares)
- The option strategy currently sells put options on a monthly basis which provides some downside protection if markets fall and for which the funds get paid a fee.



EMERGING MARKET SHARES

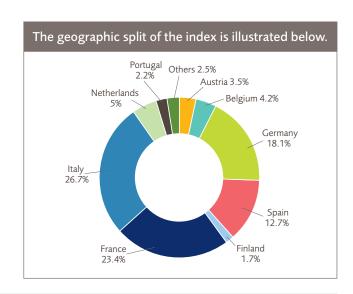
- ILIM track the performance of a broad Emerging Markets share index to provide exposure to Emerging Market Shares.
- Emerging Market Shares include over 1,100 individual companies which operate in 24 different markets.
- For the percentage of Emerging Market Shares in each Irish Life MAPS fund, see the latest factsheet on www.irishlife.ie.



2 Bonds

GOVERNMENT BONDS

- ILIM currently track the performance of a recognised and leading government bond index to provide exposure to government bonds.
- Within the bond allocation, ILIM choose the proportion to invest in government bonds and have discretion in relation to the index which is tracked.



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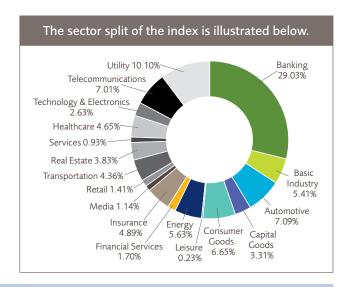
ASSET CLASSES EXPLAINED CONTINUED...





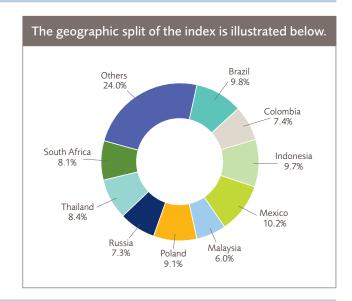
CORPORATE BONDS

- ILIM currently track the performance of a recognised and leading corporate bond index to provide exposure to corporate bonds.
- Within the bond allocation, ILIM choose the proportion to invest in corporate bonds and have discretion in relation to the index which is tracked.



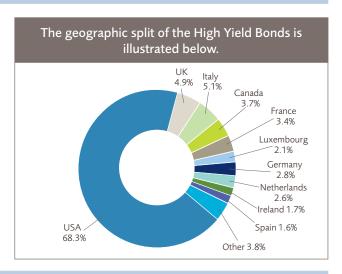
EMERGING MARKET DEBT

- ILIM currently track the performance of a recognised and leading emerging market bond index to provide exposure to emerging market bonds.
- Within the bond allocation, ILIM choose the proportion to invest in emerging market bonds and have discretion in relation to the index which is tracked.



HIGH YIELD BONDS

- ILIM track the performance of a recognised and leading high yield bond index to provide exposure to global high yield bonds.
- The High Yield Bond allocation is currently sub-advised by an external manager.



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ASSET CLASSES EXPLAINED CONTINUED...

External Managers/Alternatives

ILIM recognise the need to incorporate alternative strategies within the Irish Life MAPS funds and have an active pipeline of external managers they monitor on an on-going basis. There were two changes to the line-up of External Managers in quarter 1 2019. The Ramius Merger Arbitrage Fund was added and the BlackRock FIGO Fund was removed.

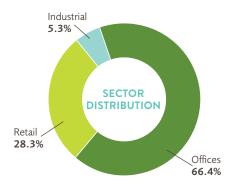
There is currently access to seven leading global real and absolute return managers with ten funds through each Irish Life MAPS fund's External Managers / Alternatives portion. The percentage allocated to External Managers / Alternatives varies for each Irish Life MAPS fund and the latest factsheet on www.irishlife.ie will show this percentage.

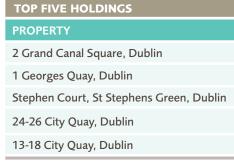
Within this percentage, the target split across the seven managers is shown as well as details of the managers themselves and the funds we invest in. ILIM actively look for managers that can bring diverse performance at the right price. They monitor this performance on an ongoing basis and may choose to change the allocation to external managers or the target allocation within the External Manager allocation. They may also choose to replace, add or remove External Managers as opportunities arise and market conditions change.

Manager	Assets Managed	Fund Name	
GMO	\$70 billion	GMO Real Return Fund	
Source www.gmo.com	(30 September 2018)	Systematic Global Markets (SGM) Fund	
Putnam Source www.putnam.com	\$169 billion (28 February 2019)	Putnam Multi Asset Absolute Return Strategy (MAARS)	
AQR Source www.aqr.com	\$196 billion (31 December 2018)	AQR Global Risk Parity	
		AQR Style Premia	
Blackrock Source www.blackrock.com	\$5.98 trillion (31 December 2018)	BlackRock Style Advantage Fund	
PIMCO Source www.pimco.com	\$1.66 trillion (31 December 2018)	PIMCO Income Fund	
Dunn Capital Management Source www.montlakeucits.com	\$1 billion (30 September 2018)	Montlake Dunn WMA	
MidOcean Source www.midoceanpartners.com	\$8 billion (30 June 2018)	DB Platinum MidOcean Fund	
Ramius Source www.ramius.com	\$718 million (31 January 2019)	Ramius Merger Arbitrage Fund	



Each Irish Life MAPs fund currently has an allocation to ILIM's Pension Exempt Property fund. Information on the property allocation at the end of March 2019 is shown below. As outlined previously in our quarter 3 update, we also have a small exposure to residential property within the property allocation.





TOTAL VALUE c. €2bn

The portfolio comprises of:

- 78 individual property assets
- Leased to over 300 tenants
- Broad mix of commercial property - with exposure to offices, retail and industrial properties.

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The information is correct as at 31 March 2019. For the percentage of property

invested in each MAPS Fund, please see the factsheet on www.irishlife.ie.

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PENSIONS
INVESTMENTS
LIFE INSURANCE



ILIM'S CREDENTIALS

ILIM have designed the Irish Life MAPS funds. They have also developed and tested the DSC model and will expertly manage it over time.

ILIM currently manages €76 Billion of assets (as at 28/02/2019), including private investors and leading Irish and international companies. By investing in one of these funds through an Irish Life pension, savings or investment plan you will benefit from their experience and expertise.

As a proud ambassador for the UN Principles for Responsible Investment, ILIM are leaders in driving ESG investing in Ireland - influencing positive change in environmental, social and governance issues to create more socially conscious, sustainable and long-term investor returns.

ILIM are MULTI-AWARD WINNERS. They're recognised internationally for their expertise, innovation and track record:

- PASSIVE MANAGER OF THE YEAR, at European Pension Awards 2018 and also BEST EQUITY and BEST PASSIVE MANAGER at European Pension Awards 2014 Only European Investment Manager to win twice at those awards.
- PASSIVE MANAGER OF THE YEAR and PROPERTY MANAGER OF THE YEAR at the Irish Pension Awards 2018.
 INVESTMENT MANAGER OF THE YEAR at the Irish Pension Awards 2017 and also three years running 2013-2015.
 EQUITIES MANAGER OF THE YEAR at the Irish Pension Awards 2017. PASSIVE MANAGER OF THE YEAR at the Irish Pension Awards 2016.
- BEST INVESTMENT FUND PROVIDER at Longboat Analytics Financial Services Awards 2017 and BEST INNOVATION IN FINANCIAL SERVICES AWARD at Longboat Analytics ('Moneymate') Financial Services Awards 2016.

IRISH LIFE MAPS®:

- > Choice through a range of funds
- > Generating smoother, long-term returns
- > Managing risk to stay on track
- > Delivering peace of mind
- > Available across our pension, investment and savings plans

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For more details please see www.irishlife.ie/investments or contact your financial broker or financial adviser.

Irish Life Investment Managers Limited is regulated by the Central Bank of Ireland. Irish Life Assurance plc is regulated by the Central Bank of Ireland.

