BetaShares
Exchange Traded Funds

BETASHARES MODEL PORTFOLIO REPORT

QUARTER ENDING IN DECEMBER 2021

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1. INTRODUCTION TO THE BETASHARES ASSET ALLOCATION AND MODEL PORTFOLIO REPORT

In response to growing demand from our clients, BetaShares has developed a suite of model portfolios that utilise exchange-traded products (ETFs and other exchange-traded products) to deliver transparent, diversified and cost-effective investment solutions for investors with differing risk profiles and investment objectives.

Our four model portfolio solutions are:

1) **Strategic Asset Allocation (SAA) ETF Model Portfolios.** These are built using long-term expected returns and risk for a diversified range of major asset classes, reviewed annually. Models are optimised for five risk profiles as per APRA's Standard Risk Measure (i.e. maximum number of expected negative return years over a 20-year period).

2) **Dynamic Asset Allocation (DAA) ETF Model Portfolios.** These utilise as a benchmark the asset-class weightings of the SAA models, but with asset allocation dynamically tilted on a quarterly basis to reflect our quantitative modelling of asset class mis-valuations and qualitative assessment of market risks and opportunities.

3) **Dynamic Income Model Portfolios.** These use the same defensive/growth asset-class weightings as the DAA models above but make use of ETPs that weight returns towards income rather than capital growth over time.

4) **Pension Risk-Managed Model Portfolios.** These use a similar defensive/growth asset-class weighting to the SAA models above but make use of ETPs that aim to provide enhanced income returns and/or less volatile returns through a systematic risk-management overlay.

Unique features of the BetaShares Model Portfolios

- **'Best-of-breed' ETF selection:** The underlying ETF product selection is based on investment merit, with both BetaShares funds as well as those from other managers used.

- **Reporting, service and support:** High quality reporting, support tools, dedicated nationwide adviser services team and personalised service. Access to BetaShares Portfolio Management Team, Investment Specialists and Chief Economist.

- **Dynamic asset allocation:** Flexibility to seek to capture both alpha from asset-class mispricing and manage downside risk by tilting from the strategic allocations.

- **Mix of market-cap and smart beta methodologies:** ETFs selected may use 'smart beta' methodologies which have a demonstrable rationale and seek to outperform market-cap weighted approaches.

- **Cost-effective:** The building blocks for ETF Model Portfolios are cost-effective ETFs, making the portfolios competitively-priced investment options for clients.

2. MARKET AND PORTFOLIO REVIEW: DECEMBER QUARTER 2021

2.1. Market Review

Growth assets again outperformed defensive assets over the December quarter. In local currency terms, global equites rebounded - after a small loss in the September quarter – reflecting relief that the 'delta' COVID wave appeared to be peaking, corporate earnings remained strong, and long-term bond yields were still relatively well contained. United States equity returns were especially strong.

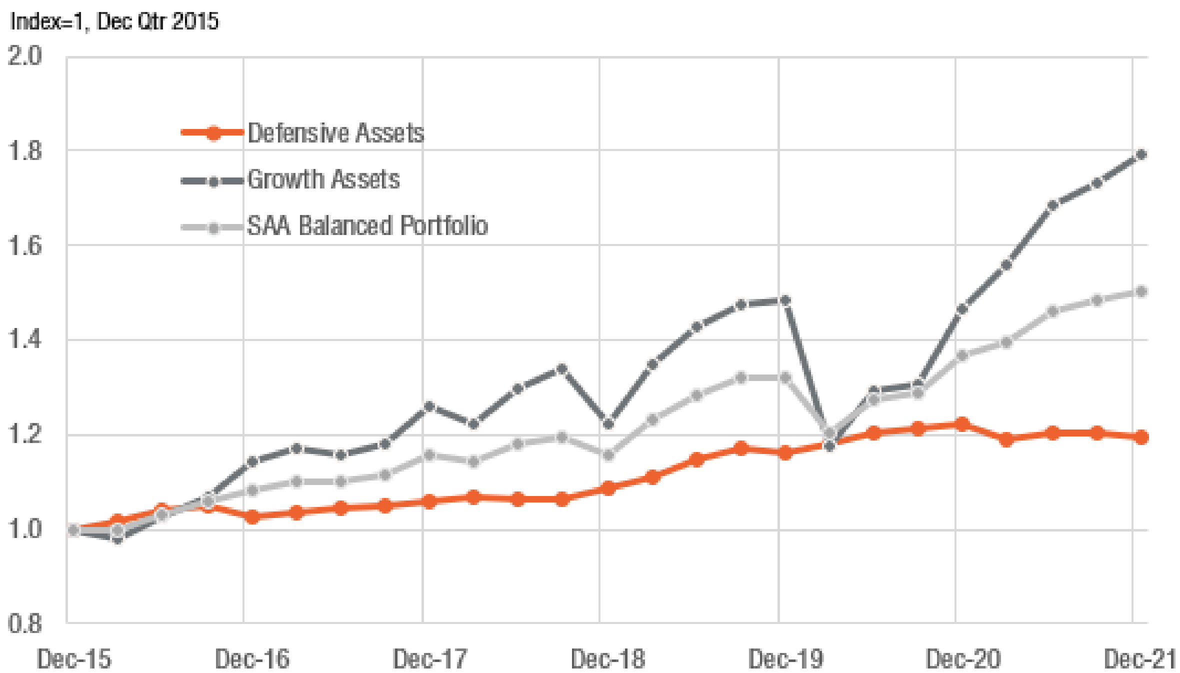
In unhedged Australian dollar terms, the gain in global equities was a little less due to a modest rebound in the Australian dollar. Australian equities also produced modest gains, though again not as strong as global equities, while there was a strong return from listed property despite higher local bond yields.

The quarter ended with confirmation that the U.S. Federal Reserve would accelerate its reduction in bond purchases in the new year and likely raise interest rates several times – which has, initially at least, been well-absorbed by markets.

Growth vs. Defensive Assets[1]

Major Asset Classes	Dec Qtr	Sep Qtr	6-months	12-months
Defensive	**-0.8%**	**0.1%**	**-0.7%**	**-2.1%**
Cash	0.1%	0.1%	0.1%	0.3%
Aust. Bonds	-1.6%	0.2%	-1.4%	-3.1%
Global bonds	0.0%	-0.1%	-0.1%	-2.1%
Gold (hedged)	4.8%	-1.9%	2.8%	-5.2%
Aust. Listed Property	10.0%	4.7%	15.2%	26.8%
Aust Equities	1.5%	1.9%	3.4%	17.9%
Global Equities (unhedged)	4.2%	3.0%	7.4%	25.3%
Growth	**3.6%**	**2.7%**	**6.4%**	**22.8%**

[1] Asset class returns based on the total return after fees for the respective model ETFs, using benchmark strategic weights. Growth and defensive asset returns are calculated using benchmark strategic asset class weights for the balanced portfolio. Past performance is not an indicator of future performance.



Source: Bloomberg, BetaShares. Past performance is not an indicator of future performance. Based on SAA weights.

Among defensive assets, global bond returns were again broadly flat reflecting a further modest gain in bond yields. Australian bond returns were negative, however, due to a stronger rise in local bond yields than that evident globally – markets priced in the risk of monetary policy tightening next year despite continued accommodative rhetoric from the Reserve Bank of Australia. Gold prices also rebounded after falling in the September quarter.

2.2. Balanced Model Portfolio Review

The DAA (Balanced) Model Portfolio returned 1.5% in the quarter, compared with 1.4% for the benchmark strategic portfolio.

SAA and DAA Balanced Model Performance

		Balanced Model Portfolio Weights *as at end-Sept. 2021*		
	% return Dec Qtr.	**SAA**	**DAA**	**+/-**
Defensive Assets*	**-0.8%**	**50%**	**45%**	**-5.00%**
Cash (AAA)	0.1%	10.00%	11.25%	1.25%
Floating-Rate Bonds (QPON)	-0.2%	6.25%		-6.25%
Aust. Government Bonds (AGVT)	-1.8%	12.50%	12.50%	0.00%
Aust. Corporate Bonds (CRED)	-2.4%	6.25%	13.75%	7.50%
Global Bonds (VBND)	0.0%	15.00%	7.50%	-7.50%
Gold (QAU)	4.8%	0.00%	0.00%	0.00%
Growth Assets*	**3.6%**	**50%**	**55%**	**+5.00%**
Aust. Listed Property (VAP)	10.0%	2.50%	2.50%	0.00%
Aust. Equities (QOZ)	0.6%	8.75%	7.50%	-1.25%
Aust. Equities (A200)	2.3%	8.75%	7.50%	-1.25%
U.S. Equities (QUS**)	8.1%	8.25%	10.25%	2.00%
U.S. Equities (VTS)	6.7%	8.25%	10.00%	1.75%
Non-U.S. Equities (VEU)	0.4%	13.50%	17.25%	3.75%
Quarterly % return		**1.4%**	**1.5%**	

*Using SAA weights. **Prior to 21 December 2020, QUS traded under a different investment strategy and was subject to different management costs. QUS contribution to model portfolio performance prior to such date relates to the previous investment strategy.

In terms of performance attribution, our modest overweight to growth assets again helped DAA relative performance, as did our overweight to international equities over Australian equities. Within defensive assets, however, our overweight to Australian bonds over global bonds detracted from DAA relative performance, reflecting the larger increase in local bond yields.

Balanced Dynamic Portfolio: Performance atttribution

	Return performance			Performance attribution*		
	DAA	**SAA**	**DAA vs SAA**	**growth vs. defensive**	**intra defensive**	**intra growth**
Total Returns						
3-months	1.5%	1.4%	0.1%	0.2%	-0.2%	0.1%
6-months	3.1%	2.8%	0.3%	0.4%	-0.2%	0.1%
12-months	10.4%	9.8%	0.6%	0.6%	-0.2%	0.1%
Since incept. (31/12/15)	6.8%	7.0%	-0.2%	-0.5%	0.1%	0.2%

*Growth vs. defensive refers to broad dynamic tilts between growth and defensive assets. Intra-defensive and intra-growth refer to tilts within each broad asset type. Attribution equals the difference in each ETF's quarterly return vs. overall SAA portfolio return multiplied by the difference between that ETF's DAA and SAA weights.

2.3. Market Outlook and Portfolio Positioning

Following the December 2021 quarterly review, our major tactical themes for the coming quarter are outlined in the table below.

Investment Theme	Investment Strategy	Comment/Analysis
Reduced global monetary accommodation	Neutral growth vs. defensive assets	Although global economic growth and corporate earnings are likely to remain supportive of growth assets in the coming year, tightening financial conditions – and specifically the risk of higher bond yields – pose an increased downside risk to equity price-to-earnings valuations, which remain above pre-COVID average levels. There is also a risk of more persistent global inflation pressure if COVID-related disruptions continue.
Accommodative RBA	Overweight Australian fixed-rate corporate bonds over global bonds. Overweight cash over floating-rate bonds.	Due to more benign local wage and price pressures, the RBA still seems unlikely to follow the Fed in raising interest rates this year. This suggests there remains value in local bonds over global bonds. Tight short-term credit spreads, by contrast, suggest there is better risk-adjusted value in cash over local floating-rate bonds.
Stronger global earnings	Bias to international equities over Australian equities with growth assets	A relatively strong global earnings outlook, and downside risks to the Australian dollar, favours exposure to global over Australian equities.

We have modestly scaled back risk exposure heading into 2022 by returning our growth vs. defensive asset exposure to neutral.

The key new development is a more aggressive policy outlook by the U.S. Federal Reserve, which now seems likely to raise short-term interest rates by around 0.75% over the coming year. In turn, this could put upward pressure on U.S. bond yields and downward pressure on equity valuations, even as growth in the global economy and corporate earnings are likely to remain positive. Indeed, history suggests there is some risk of a mid-cycle correction in equity markets during the first stage of U.S. monetary tightening in a new cycle.

While timing such corrections is very difficult, the shifting balance of risks in our view warrants a more measured exposure to risk assets at this time. There is also a risk that global inflation pressures prove more persistent than hoped, leading to a more aggressive global monetary policy response that not only lifts interest rates but also hurts the corporate earnings outlook.

Within growth assets, we have retained our overweight exposure to global equities over Australian equities, largely due to the former's stronger earnings outlook. We also judge that the Australian dollar may remain under downward pressure, on the basis of an easing back in iron-ore prices and tighter monetary conditions in the United States.

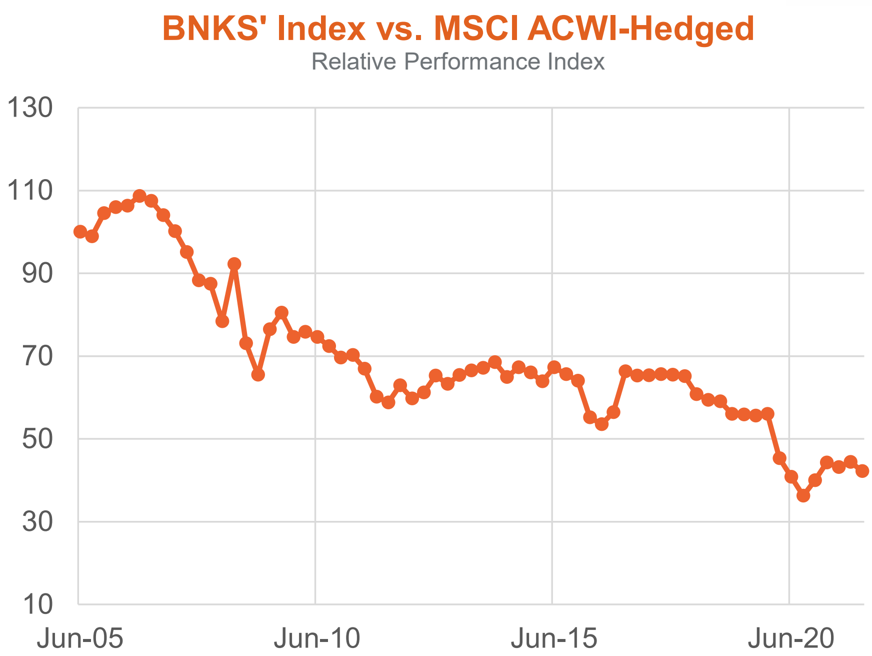
Within defensive assets, very tight credit spreads and a low short-term yield offering have led us to retain an underweight exposure to floating-rate bonds in preference for cash. We have also retained an overweight to Australian fixed-rate corporate bonds relative to global bonds due to what we consider to be an attractive yield pick-up, and the possibility of spread compression given a tightening in U.S. monetary conditions. Indeed, the widening in Australian versus global interest rate spreads last quarter we consider unwarranted, leaving local fixed-rate corporate bonds even better relative value.

2.4. Thematic Tilts – Global Banks and Japan

While not explicitly included in our Dynamic ETF model portfolios, we set out below our current suggested ETF-based ‘thematic tilts’ that some may find of interest.

Theme 1: Global Banks (via the BNKS ETF)

Although it underperformed last quarter, we retain our suggested tilt towards global banks (BNKS ETF) on the view that upward risks to global bond yields and steeper yield curves may support margin expansion and hence bank earnings. Global banks have tended to do relatively well in a rising yield environment, as most recently seen from mid-2020 to earlier this year.



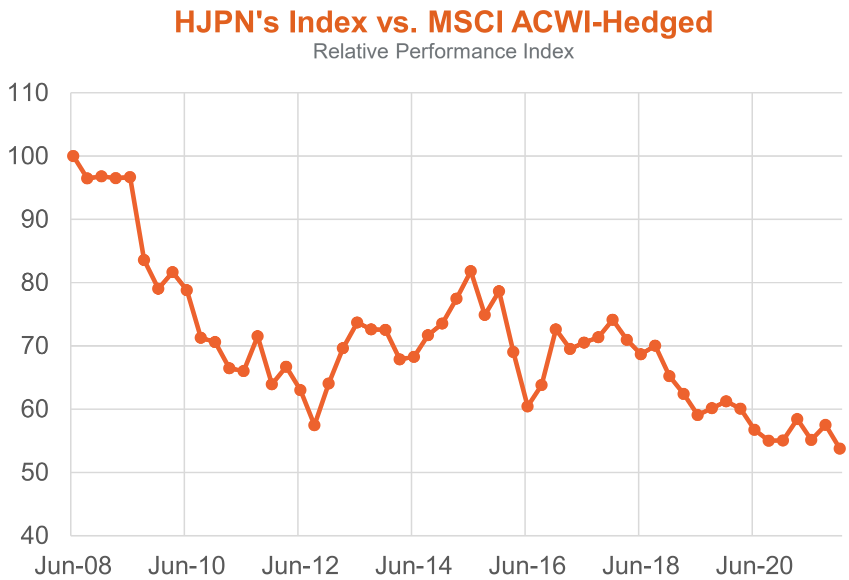
Source: Bloomberg, BetaShares. Quarterly data ending at 31 December 2021. Index=100, 30-June-2005. Past performance is not an indicator of future performance. Performance is compared against the $A-hedged MSCI World Index when ETF is currency-hedged, and against the unhedged MSCI World Index otherwise. You cannot invest directly in an Index.

Theme 2: Japanese Equities (via the HJPN ETF)

We have removed our longstanding thematic tilt to global quality stocks as this now forms part of our suite of ‘smart beta’ global equities exposures within the model portfolios themselves (see section 2.5 below).

In its place, we suggest Japanese equities which have so far failed to benefit from the progressive weakening in the Yen over the past year. This likely reflects both continued investor attraction to U.S. growth stocks (helped by broadly sideways movement in bond yields in recent quarters) and Japanese political and COVID-related concerns.

Despite this, growth in Japanese forward earnings was even stronger than in the U.S. last year and Japanese stocks have traded at a relatively deep 20% discount to U.S. stocks on a forward price-to-earnings basis. With U.S. monetary tightening this year, the Yen may well remain soft which, together with a possible rotation away from growth/technology stocks, could favour the Japanese market. As Japanese stocks tend to perform best when the Yen is soft, the HJPN ETF may be a favoured way to gain exposure to the Japanese market as it is currency hedged and has a bias to Japanese exporters.



Source: Bloomberg, BetaShares. Quarterly data ending at 31 December 2021. Index=100, 30-June-2005. Past performance is not an indicator of future performance. Performance is compared against the $A-hedged MSCI World Index when ETF is currency-hedged, and against the unhedged MSCI World Index otherwise. You cannot invest directly in an Index.

2.5. Annual Strategic Review: Reduce Cash and Introduce Quality

The December Investment Committee meeting also conducted the annual strategic benchmark asset allocation review. Long-run risk and return expectations for key asset classes remained unchanged, with the Committee agreeing that key underlying assumptions regarding the long-run 'neutral' cash rate, corporate earnings growth and equity and bond return risk premiums remained appropriate.

The range of asset classes considered also remained unchanged, with the Committee agreeing a finer disaggregation of asset classes at the strategic level would not materially improve the long-run risk-adjusted return outlook for the models.

One change that was accepted, however, was to modestly reduce the strategic cash allocation relative to bonds, after modelling suggested this would remain consistent with the current risk profiles (standard risk measure, or SRM) of each model's asset allocation. Although the long-run return expected for bonds (3% p.a.) was not significantly greater than for cash (2.75% p.a.), it was nonetheless judged appropriate not to hold more cash than was necessary if modelling suggested this would remain consistent with the risk profiles of each model's strategic asset allocation.

Another change that was accepted was to introduce global quality as another 'smart beta' allocation among the choice of ETFs used to provide exposure to each of the asset classes. This followed modelling which suggested that the quality factor offered the potential to provide enhanced global equity returns over the long run, while also helping to diversify the range of smart beta exposures within the models.

In particular, modelling suggested that while both quality and the more value-orientated smart beta exposures already in the models (QUS and QOZ) offered the potential for returns above market-cap exposures over time, their relative performance has tended to be negatively correlated. As such, the inclusion of quality alongside existing smart beta exposures offers the potential for enhanced diversification benefits. Due to its relatively low management expense ratio (MER), and attractive quality screens that have produced relatively good historical return performance, the QLTY ETF was determined as the appropriate way to gain exposure to the quality factor among global equities compared to other ETFs on the market.

3. MODEL PORTFOLIO PERFORMANCE REVIEW

The table below summarises return performance for a 'Balanced' risk profile across our suite of model portfolios.

Betashares Model Portfolios: Performance Summary

Asset Class	Investment Exposure	Model ETFs/ETPs	Dec Qtr (%)	6-months (%)	NAV Return 12-months (%)	Balanced Model Weightings *As at start of the Quarter* Strategic	Dynamic	Income	Pension
Cash	Bank deposits	AAA	0.1%	0.1%	0.3%	10.0%	11.3%	3.0%	5.0%
Aust. Bonds	Aust. FRNs	QPON	-0.2%	-0.3%	-0.2%	6.3%			20.0%
	Aust. Government	AGVT	-1.8%	-1.5%	-4.4%	12.5%	12.5%	9.8%	5.0%
	Aust. Corporates	CRED	-2.4%	-2.1%	-3.2%	6.3%	13.75%	9.8%	5.0%
Int. Bonds	Int. Bonds	VBND	0.0%	-0.1%	-2.1%	15.0%	7.5%	7.5%	
Aust. Property	Aust. Listed property	VAP	10.0%	15.2%	26.8%	2.5%	2.5%		
	Real Assets	RINC	4.4%	12.8%	20.0%			2.5%	
Aust. Equity	Aust. Equities	A200	2.3%	4.1%	18.0%	8.8%	7.5%		
	Aust. Equities	QOZ	0.6%	2.7%	17.8%	8.8%	7.5%		
	Aust. Equities	AUST	1.0%	2.2%	11.8%				13.0%
	Aust. Equities	HVST	0.8%	0.9%	8.7%				7.0%
	Aust. Equities	EINC	-1.1%	2.1%	14.2%			7.5%	
	Aust. Equities	VHY	2.6%	0.7%	17.1%			7.5%	
Int. Equity	Int. Equities (US)	QUS	8.1%	12.0%	36.7%	8.3%	10.3%		
	Int. Equities (US)	VTS	6.7%	13.0%	33.6%	8.3%	10.0%		
	Int. Equities	VEU	0.4%	1.2%	13.3%	13.5%	17.25%		
	Int. Equities (non-US)	WRLD	6.8%	10.5%	24.7%				30.0%
	Int. Equities	INCM	5.0%	7.6%	25.6%			37.5%	
Commodities	Gold	QAU	4.8%	2.8%	-5.2%				
Hybrids	Aust. Hybrids	HBRD	1.2%	1.5%	3.8%			15.0%	15.0%
Aust. Equity	*S&P/ASX 200*		*2.1%*	*3.8%*	*17.2%*				
Int. Equity	*US S&P 500 ($A)*		*10.3%*	*15.3%*	*36.6%*				
	Total					100%	100%	100%	100%
	Defensive[2]					50%	45%	45%	50%
	Growth[2]					50%	55%	55%	50%
	Net Performance [1]								
	Dec Qtr					1.4%	1.5%	1.9%	2.2%
	6-months					2.8%	3.1%	3.2%	3.5%
	12-months					9.8%	10.4%	11.0%	9.3%
	3-year					9.1%	14.0%	10.5%	9.9%
	Since incept. (31/12/15)					7.0%	6.8%	5.1%	4.8%
	Price Return					3.3%	3.1%	0.7%	0.7%
	Net Income Return					3.8%	3.7%	4.4%	4.1%
	Volatility[3]					5.8%	5.8%	6.4%	4.6%
	Maximum Drawdown[3]					-16.9%	-18.8%	-23.0%	-11.2%
	Net Distribution Yield[4]					2.9%	2.5%	3.1%	1.8%
	Gross Distribution Yield[4]					3.1%	2.6%	3.5%	2.2%

1.Portfolios are rebalanced on a quarterly basis. 2. Defensive assets are Cash, Australian Bonds, International Bonds, Gold and Hybrids. Grow th assets are Australian Property, Australian Equities and International Equities. 3. Since inception. 4. Trailing 12-months, as at 31 December 2021
Prior to 21 December 2020, QUS traded under a different investment strategy and w as subject to different management costs. QUS's contribution to model performance prior to that date relates to the previous investment strategy.

As noted above, the DAA (Balanced) Portfolio returned 1.5% during the quarter, reflecting modest gains in growth assets.

Compared to the DAA (Balanced) Portfolio, the Dynamic Income (Balanced) Portfolio returned 1.9%, reflecting lower exposure to fixed-rate bond ETFs relative to the floating-rate HBRD ETF.

The Pension Risk-Managed (Balanced) Portfolio returned 2.2% in the quarter, also reflecting lower exposure to fixed-rate bonds relative to hybrids.

Performance of all portfolios since inception is summarised in the table below.

BetaShares Model Portfolios: Performance Summary	Conservative	Moderate	Balanced	Growth	High Growth
Strategic (Benchmark) ETF Model Portfolio					
Total Return Performance [1]					
3-months	0.1%	0.6%	1.4%	2.2%	3.1%
6-months	0.7%	1.5%	2.8%	4.2%	5.6%
12-months	2.7%	6.0%	9.8%	14.7%	19.9%
3-year	5.1%	7.2%	9.1%	11.3%	13.8%
Since incept.[2]	4.4%	5.7%	7.0%	8.4%	10.2%
Volatility[2]	2.7%	4.1%	5.8%	8.0%	10.7%
Net Yield[3]	2.8%	2.9%	2.9%	2.6%	2.3%
Gross Yield[3]	2.9%	3.0%	3.1%	2.9%	2.6%
Dynamic ETF Model Portfolio					
Total Return Performance [1]					
3-months	0.1%	0.6%	1.5%	2.3%	3.4%
6-months	0.8%	1.7%	3.1%	4.4%	6.1%
12-months	3.0%	6.5%	10.4%	15.4%	20.8%
3-year	4.8%	6.8%	8.9%	11.2%	13.6%
Since incept[2]	4.3%	5.6%	6.8%	8.2%	9.9%
Volatility[2]	2.8%	4.2%	5.8%	7.9%	10.6%
Net Yield[3]	2.3%	2.3%	2.5%	2.4%	2.2%
Gross Yield[3]	2.3%	2.4%	2.6%	2.6%	2.5%
Dynamic Income Model Portfolio					
Total Return Performance [1]					
3-months	0.4%	1.1%	1.9%	2.6%	3.6%
6-months	1.0%	1.9%	3.2%	4.3%	5.7%
12-months	3.8%	7.2%	11.0%	15.7%	20.9%
3-year	3.4%	4.5%	5.5%	6.4%	7.6%
Since incept.[2]	3.8%	4.6%	5.1%	5.8%	6.3%
Price Return	0.3%	0.6%	0.7%	1.2%	1.3%
Net Income Return	3.5%	3.9%	4.4%	4.6%	5.1%
Volatility[2]	3.2%	4.7%	6.4%	8.8%	11.5%
Net Yield[3]	2.6%	2.9%	3.1%	3.2%	3.3%
Gross Yield[3]	2.8%	3.1%	3.5%	3.6%	3.8%
Pension Risk-Managed Model Portfolio					
Total Return Performance [1]					
3-months	0.4%	1.5%	2.2%		
6-months	0.8%	2.4%	3.5%		
12-months	3.2%	6.5%	9.3%		
3-year	4.1%	5.4%	6.8%		
Since incept. (31/12/15)	3.4%	4.1%	4.8%		
Volatility[2]	2.4%	3.3%	4.6%		
Net Yield[3]	2.2%	1.7%	1.8%		
Gross Yield[3]	2.6%	2.0%	2.2%		

1.Portfolios are rebalanced on a quarterly baisis.

2. Since inception 31 December 2015

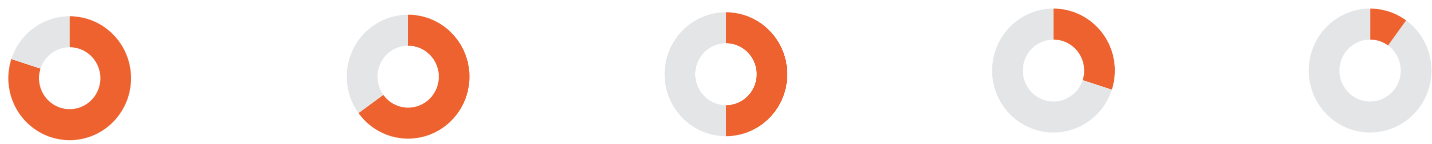
3. Trailing 12-months, as at 31 December 2021

4. MODEL PORTFOLIOS: AS AT 31 DECEMBER 2021

4.1. Strategic and Dynamic Model Portfolios

The SAA and DAA Model Portfolios are detailed in the table below.

Defensive
Growth



Asset Class	ETF	Conservative SAA	Conservative DAA	Conservative +/-	Conservative qtrly change	Moderate SAA	Moderate DAA	Moderate +/-	Moderate qtrly change	Balanced SAA	Balanced DAA	Balanced +/-	Balanced qtrly change	Growth SAA	Growth DAA	Growth +/-	Growth qtrly change	High Growth SAA	High Growth DAA	High Growth +/-	High Growth qtrly change
Defensive		80.0%	80.0%		5.0%	65.0%	65.0%		5.0%	50.0%	50.0%		5.0%	30.0%	30.0%		5.0%	10.0%	10.0%		5.0%
Cash	AAA	15.00%	24.50%	9.50%	-4.25%	10.00%	18.00%	8.00%	-0.25%	5.00%	11.50%	6.50%	0.25%		4.50%	4.50%					-2.50%
Aust.Bonds - Floating	QPON	9.50%		-9.50%		8.00%		-8.00%		6.50%		-6.50%		4.50%		-4.50%					
Aust.Bonds - Fixed Govt	AGVT	19.50%	19.50%		2.00%	17.00%	17.00%		1.0%	13.50%	13.50%		1.00%	9.00%	9.00%		0.50%	10.00%	10.00%		7.50%
Aust.Bonds - Fixed Corp	CRED	10.00%	20.00%	10.00%	1.25%	8.00%	18.00%	10.00%	-0.25%	7.00%	14.50%	7.50%	0.75%	4.50%	10.00%	5.50%	-2.00%				
Int. bonds	VBND	26.00%	16.00%	-10.00%	6.00%	22.00%	12.00%	-10.00%	4.5%	18.00%	10.50%	-7.50%	3.00%	12.00%	6.50%	-5.50%	6.50%				
Gold ($US)	QAU																				
Growth		20.0%	20.0%		-5.0%	35.0%	35.0%		-5.0%	50.0%	50.0%		-5.0%	70.0%	70.0%		-5.0%	90.0%	90.0%		-5.0%
Aust. A-REITs	VAP									2.50%	2.50%			3.50%	3.50%			4.50%	4.50%		
Aust. Equities	QOZ	4.00%	3.50%	-0.50%	-0.75%	7.00%	6.00%	-1.00%	-0.25%	8.75%	7.25%	-1.50%	-0.25%	12.25%	10.00%	-2.25%	-1.00%	15.50%	13.00%	-2.50%	-1.25%
Aust. Equities	A200	4.00%	3.50%	-0.50%	-0.75%	7.00%	6.00%	-1.00%	-0.25%	8.75%	7.25%	-1.50%	-0.25%	12.25%	10.00%	-2.25%	-1.00%	15.50%	13.00%	-2.50%	-1.25%
Int. Equities	QLTY	2.50%	2.50%		2.50%	4.25%	4.50%	0.25%	4.50%	6.00%	6.50%	0.50%	6.50%	8.50%	10.00%	1.50%	10.00%	11.00%	12.00%	1.00%	12.00%
US Equities	QUS	3.00%	3.25%	0.25%	-1.25%	5.00%	5.50%	0.50%	-2.00%	7.25%	8.00%	0.75%	-2.25%	10.00%	11.00%	1.00%	-2.50%	13.00%	14.25%	1.25%	-2.75%
US Equities	VTS	3.00%	3.25%	0.25%	-1.00%	5.00%	5.50%	0.50%	-1.75%	7.25%	8.00%	0.75%	-2.00%	10.00%	11.00%	1.00%	-2.25%	13.00%	14.25%	1.25%	-2.50%
Non-US Equities	VEU	3.50%	4.00%	0.50%	-3.75%	6.75%	7.50%	0.75%	-5.25%	9.50%	10.50%	1.00%	-6.75%	13.50%	14.50%	1.00%	-8.25%	17.50%	19.00%	1.50%	-9.25%
Total		100.0%	100.0%			100.0%	100.0%			100.0%	100.0%			100.0%	100.0%			100.0%	100.0%		
MER [1]		0.21%	0.21%			0.21%	0.21%			0.21%	0.21%			0.20%	0.20%			0.20%	0.20%		

[1] These are the weighted average management costs of the underlying funds in the model portfolio and can be expected to change over time as asset allocations and underlying investment vehicles change. These costs do not include certain other costs, such as any transaction costs (e.g. brokerage and bid-offer spreads) that might be incurred when implementing model portfolios.

4.2. Dynamic Income Model Portfolios

The suite of Dynamic Income Model Portfolios is provided in the table below.

Defensive
Growth

Asset Class	ETF	Conservative Weight	Conservative qtrly change	Moderate Weight	Moderate qtrly change	Balanced Weight	Balanced qtrly change	Growth Weight	Growth qtrly change	High Growth Weight	High Growth qtrly change
Defensive		**80.0%**	**5.0%**	**65.0%**	**5.0%**	**50.0%**	**5.0%**	**30.0%**	**5.0%**	**10.0%**	**5.0%**
Cash	AAA	15.50%	-4.25%	9.00%	-0.25%	3.25%	0.25%				
Aust.Bonds - Floating	QPON										
Aust.Bonds - Fixed Govt	AGVT	17.50%	2.00%	15.00%	1.00%	10.75%	1.00%	6.50%	0.50%	5.00%	5.00%
Aust.Bonds - Fixed Corp	CRED	16.00%	1.25%	14.00%	-0.25%	10.50%	0.75%	7.00%	-2.00%		
Int. bonds	VBND	16.00%	6.00%	12.00%	4.50%	10.50%	3.00%	6.50%	6.50%		
Hybrids	HBRD	15.00%		15.00%		15.00%		10.00%		5.00%	
Growth		**20.0%**	**-5.0%**	**35.0%**	**-5.0%**	**50.0%**	**-5.0%**	**70.0%**	**-5.0%**	**90.0%**	**-5.0%**
Aust. A-REITs	RINC					2.50%		3.50%		4.50%	
Aust. Equities	EINC	3.50%	-0.75%	6.00%	-0.25%	7.25%	-0.25%	10.00%	-1.00%	13.00%	-1.25%
Aust. Equities	VHY	3.50%	-0.75%	6.00%	-0.25%	7.25%	-0.25%	10.00%	-1.00%	13.00%	-1.25%
Global Equities	INCM	13.00%	-3.50%	23.00%	-4.50%	33.00%	-4.50%	46.50%	-3.00%	59.50%	-2.50%
Total		**100%**		**100%**		**100%**		**100%**		**100%**	
MER[1]		**0.32%**		**0.36%**		**0.41%**		**0.45%**		**0.49%**	

[1] These are the weighted average management costs of the underlying funds in the model portfolio and can be expected to change over time as asset allocations and underlying investment vehicles change. These costs do not include certain other costs, such as any transaction costs (e.g. brokerage and bid-offer spreads) that might be incurred when implementing model portfolios.

4.3. Pension Risk-Managed Model Portfolios

The suite of Pension Risk-Managed Model Portfolios is provided in the table below. These models are rebalanced quarterly and subject to annual strategic review.

Asset Class	ETF	Moderate Weight	Moderate qtrly change	Balanced Weight	Balanced qtrly change
Defensive		**65%**		**50%**	
Cash	AAA	10.0%		5.0%	
Aust.Bonds - Floating	QPON	10.0%	-20.00%	7.5%	-12.50%
Aust.Bonds - Fixed Govt	AGVT	20.0%	15.00%	15.0%	10.00%
Aust.Bonds - Fixed Corp	CRED	10.0%	5.00%	7.5%	2.50%
Hybrids	HBRD	15.0%		15.0%	
Growth		**35%**		**50%**	
Aust. Equities	AUST	8.5%		13.0%	
Aust. Equities	HVST	5.5%		7.0%	
Global Equities	WRLD	21.0%		30.0%	
Total		**100%**		**100%**	
MER [1]		**0.40%**		**0.45%**	

5. TECHNICAL APPENDIX: ASSET CLASS ASSUMPTIONS - AS AT DECEMBER 2021

Our suite of SAA Model Portfolios are based on the following long-term asset class assumptions. These assumptions are reviewed on an annual basis.

Projected Long-term Benchmark Asset Class Returns (p.a.)

Investment Exposure	Benchmark	Yield	Capital	Total Return	Comment
Cash	Bloomberg Bank Bill Index	2.75%	-	2.75%	Assumed 0.25% above the RBA's long-run 'neutral' cash rate of 2.5%. This assumes a neutral real rate of zero.
Aust. Fixed-Rate Bonds	Bloomberg Australian Composite Bond Index	3.00%	-	3.00%	Based on an assumed long-run risk premium for bonds of 0.5% over the neutral cash rate.
Int. Fixed-Rate Bonds	Bloomberg Global Aggregate Bond Index	3.00%	-	3.00%	Based on an assumed long-run global bond risk premium of 1% above the neutral U.S. Federal Funds rate of 2%.
Aust. Property	S&P/ASX 200 Listed Property Index	5.00%	2.50%	7.50%	Income yield assumed at 1% margin above the S&P/ASX 200 plus capital growth in line with inflation.
Aust. Equities	S&P/ASX 200 Index	4.00%	4.00%	8.00%	Grossed-up dividend yield of 4%, plus capital returns just under nominal GDP growth of 5.25% reflecting higher dividends than global peers.
Int. Equities	MSCI All World Equity Index	2.50%	5.50%	8.00%	Yield return of 2.5% plus capital returns around nominal growth in global GDP.
Gold	Gold bullion spot price in $US	-	3.00%	3.00%	Gold is projected to grow 1% in real terms above 2% price inflation.

Optimisation Constraint: APRA/FSC/ASFA Standard Risk Measure

Optimisation Constraint: APRA/FSC/ASFA Standard Risk Measure

Risk Band	**Portfolio Risk Profile**	Risk Label	Est # of negative returns years every 20 years
2	Conservative	Low	0.5 to 1
3	Moderate	Low to medium	1 to 2
4	Balanced	Medium	2 to 3
5	Growth	Medium to high	3 to 4
6	High Growth	High	4 to 6

The Standard Risk Measure (SRM) is calculated by BetaShares. The SRM is based on industry guidance to allow investors to compare investment options that are expected to deliver a similar number of negative annual returns over any 20-year period. The SRM is not a complete assessment of all forms of investment risk, for instance it does not detail what the size of a negative return could be or the potential for a positive return to be less than an investor may require to meet their objectives. Further, it does not take into account the impact of administration fees and tax on the likelihood of a negative return. Investors should ensure they are comfortable with the risks and potential losses associated with their chosen investment option.

5.1. Benchmark Strategic Asset Allocation Weights

Based on the above asset class assumptions, outlined below are our five SAA models. As above, these allocations are reviewed annually.

Benchmark Strategic Asset Allocation

			Model Weights		
Asset Class	Conservative	Moderate	Balanced	Growth	High Growth
Defensive	**80%**	**65%**	**50%**	**30%**	**10%**
Cash	15.0%	10.0%	5.0%	0.0%	0.0%
Aust bonds	39.0%	33.0%	27.0%	18.0%	10.0%
Int. bonds	26.0%	22.0%	18.0%	12.0%	0.0%
Gold ($US)	0.0%	0.0%	0.0%	0.0%	0.0%
Growth	**20%**	**35%**	**50%**	**70%**	**90%**
Aust. A-REITs	0.0%	0.0%	2.5%	3.5%	4.5%
Aust. Equities	8.0%	14.0%	17.5%	24.5%	31.0%
Int. Equities ($A)	12.0%	21.0%	30.0%	42.0%	54.5%
Total	100%	100%	100%	100%	100%
Total Return[2] (p.a.)	4.00%	4.75%	5.50%	6.50%	7.50%
Std. dev	2.5%	4.0%	6.0%	8.5%	11.5%
# neg yrs in 20 years	1.0	2.0	3.0	4.0	5.0
Prob. of neg. return yr	5.0%	10.0%	15.0%	20.0%	25.0%

1. Defensive assets include cash, bonds and gold

2. Estimated income and total returns are on a gross (pre-tax) basis and are based on BetaShares long-term asset class return assumptions

5.2. Dynamic Asset Allocation Ranges

The table below indicates the maximum and minimum allowable ranges for dynamic asset allocation tilts - relative to the strategic asset allocation – that may be set for each model portfolio by the BetaShares Model Portfolio Investment Committee on an end-of-quarter basis. Models are generally only rebalanced to desired DAA weights on a quarterly basis.

	Conservative			Moderate			Balanced			Growth			High Growth		
	Min.	Bench.	Max.	Min.	Bench.	Max.	Min.	Bench.	Max.	Min.	Bench.	Max.	Min.	Bench.	Max.
Defensive	**65.0%**	**80.0%**	**95.0%**	**50.0%**	**65.0%**	**80.0%**	**25.0%**	**50.0%**	**75.0%**	**5.0%**	**30.0%**	**55.0%**	**0.0%**	**10.0%**	**35.0%**
Cash	5.0%	15.0%	45.0%	5.0%	10.0%	35.0%	0.0%	5.0%	30.0%	0.0%	0.0%	15.0%	0.0%	0.0%	15.0%
Aust. Bonds	10.0%	39.0%	60.0%	15.0%	33.0%	55.0%	10.0%	27.0%	45.0%	2.5%	18.0%	35.0%	0.0%	10.0%	20.0%
Int. Bonds	5.0%	26.0%	35.0%	5.0%	22.0%	30.0%	5.0%	18.0%	30.0%	0.0%	12.0%	20.0%	0.0%	0.0%	15.0%
Gold	0.0%	0.0%	15.0%	0.0%	0.0%	15.0%	0.0%	0.0%	20.0%	0.0%	0.0%	20.0%	0.0%	0.0%	20.0%
Growth	**5.0%**	**20.0%**	**35.0%**	**20.0%**	**35.0%**	**50.0%**	**25.0%**	**50.0%**	**75.0%**	**45.0%**	**70.0%**	**95.0%**	**65.0%**	**90.0%**	**100.0%**
A-REITs	0.0%	0.0%	15.0%	0.0%	0.0%	15.0%	0.0%	2.5%	15.0%	0.0%	3.5%	20.0%	0.0%	4.5%	25.0%
Aust. Equities	2.5%	8.0%	20.0%	5.0%	14.0%	35.0%	7.5%	17.5%	40.0%	15.0%	24.5%	50.0%	20.0%	31.0%	60.0%
Int. Equities	2.5%	12.0%	20.0%	5.0%	21.0%	35.0%	7.5%	30.0%	40.0%	15.0%	42.0%	50.0%	25.0%	54.5%	65.0%

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