

Funds

How We Select Equity Funds

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Forsyth Barr's open architecture for investment products allows us to consider a wide range of equity funds for client portfolios, alongside stocks, bonds and other investments. The Wealth Management Research team maintains lists of preferred funds that provide diversified ("core") or specialised ("satellite") exposure to equities globally, in specific regions and specific sectors. This note outlines the process the team follows to select such funds.

Fund universe

Active or passive: The preferred funds can be actively managed, or they may passively track an index. Some evidence suggests that active equity fund managers on average outperform benchmark indices before fees; the challenge is identifying which ones fit well into portfolios and are best placed to outperform after fees compared to passive funds or stocks.

Structure: The funds can be structured as exchange traded funds (ETFs), listed closed-end investment vehicles (commonly referred to as "trusts" in the UK or "LICs" in Australia), or unlisted open-ended funds. The principle differences between them relate to liquidity, discounts to net asset value (where ETFs and unlisted open-ended funds hold an advantage), and shareholder representation (the boards of trusts/LICs should be able to advocate for investors' interests).

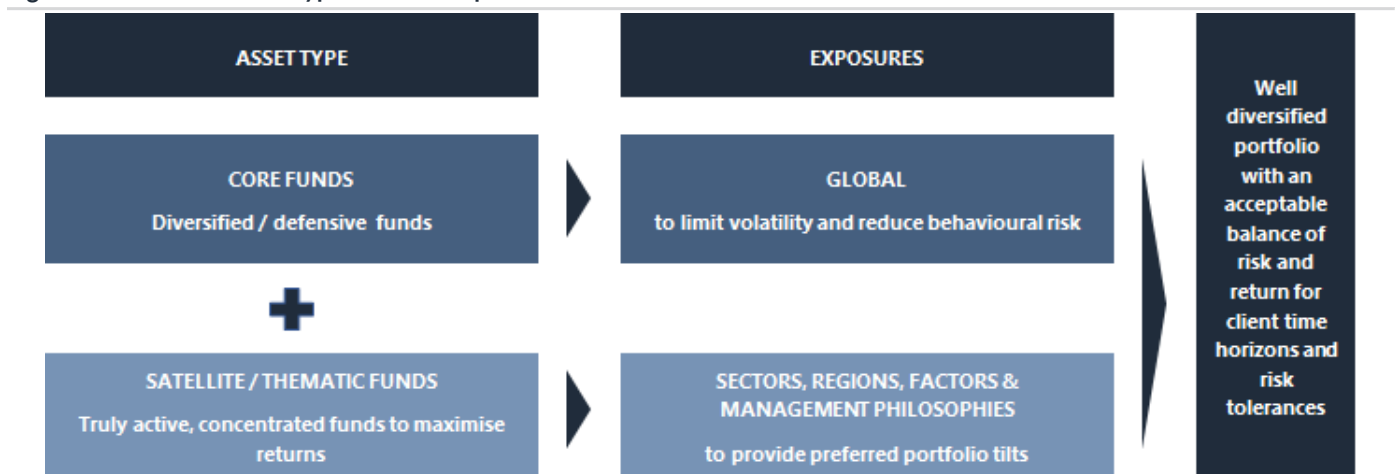
Domicile: Funds may be domiciled or listed in the UK, Ireland, Luxembourg, US, Australia, New Zealand or elsewhere. Domicile can affect tax efficiency, which is likely to be of greatest relevance to funds that invest in high-yielding and/or low-return securities.

Fund roles in portfolios

Funds can be categorised as "core" or "satellite" based on how they are constructed and managed, and how they are typically used:

- **"Core" funds** provide considerable diversification and broad market exposure.
- **"Satellite" (or thematic) funds** can be used to tilt a portfolio's exposure towards sectors, regions, factors, management philosophies or managers that the team believes have an attractive risk/return outlook over the long-term, and/or which are under-represented in portfolios.

Figure 1. Roles of different types of funds in portfolios



Source: Forsyth Barr analysis

Guiding beliefs and principles

The team is guided by the following beliefs and principles when selecting funds. The observations and assumptions that underlie these beliefs are outlined in the appendix.

Core funds

- Core funds are expected to deliver long-run returns and volatility that are broadly in line with the relevant equity market.
- Active managers of core funds may attempt to outperform the market benchmark or may have a style tilt, but they are expected to do so without taking outsized risks through portfolio concentration, high gearing or selection of high-risk securities.
- Given the diversification of these funds, their potential for out-/under-performance is expected to be reasonably modest over the long-term compared to more narrowly focussed funds.

Satellite funds

- Satellite funds have more narrowly focussed portfolios and in many cases are riskier than the core funds, because these funds:
 - Are typically not broadly diversified across numerous sectors, regions, factors or portfolio managers
 - May have large weightings in single securities to reflect the manager's conviction in the upside vs downside return potential
 - May use gearing (usually in modest amounts)
 - May have less tightly managed discount control policies
- The characteristics above may help satellite funds to outperform the broader market over some investment time horizons.
- The same factors will also make the funds' returns more unpredictable and more volatile over all time horizons, and increase the risk of permanent loss of capital compared to more diversified core funds.
- The expected higher volatility of satellite funds increases behavioural risks such as buying into funds after a period of particularly strong performance and selling out after weak performance – a behaviour that has been shown to detract significantly from investors' long-term returns.
- Due to their narrower portfolios and sometimes higher volatility and risk, portfolio weightings of satellite funds are usually expected to be more modest than those of highly diversified funds.

Process

When assessing new funds, the team:

- Reviews the manager's literature to identify whether the fund manager's stated approach and investment objective fits:
 - Into the Forsyth Barr Investment Committee's (FBIC) asset allocation
 - With the team's investment style
 - Into an identified gap in the existing funds lineup (or could replace an existing fund)
- Checks that fees and expenses are reasonable and competitive
- Checks for an adequate track record of NAV performance and discount management (where relevant)

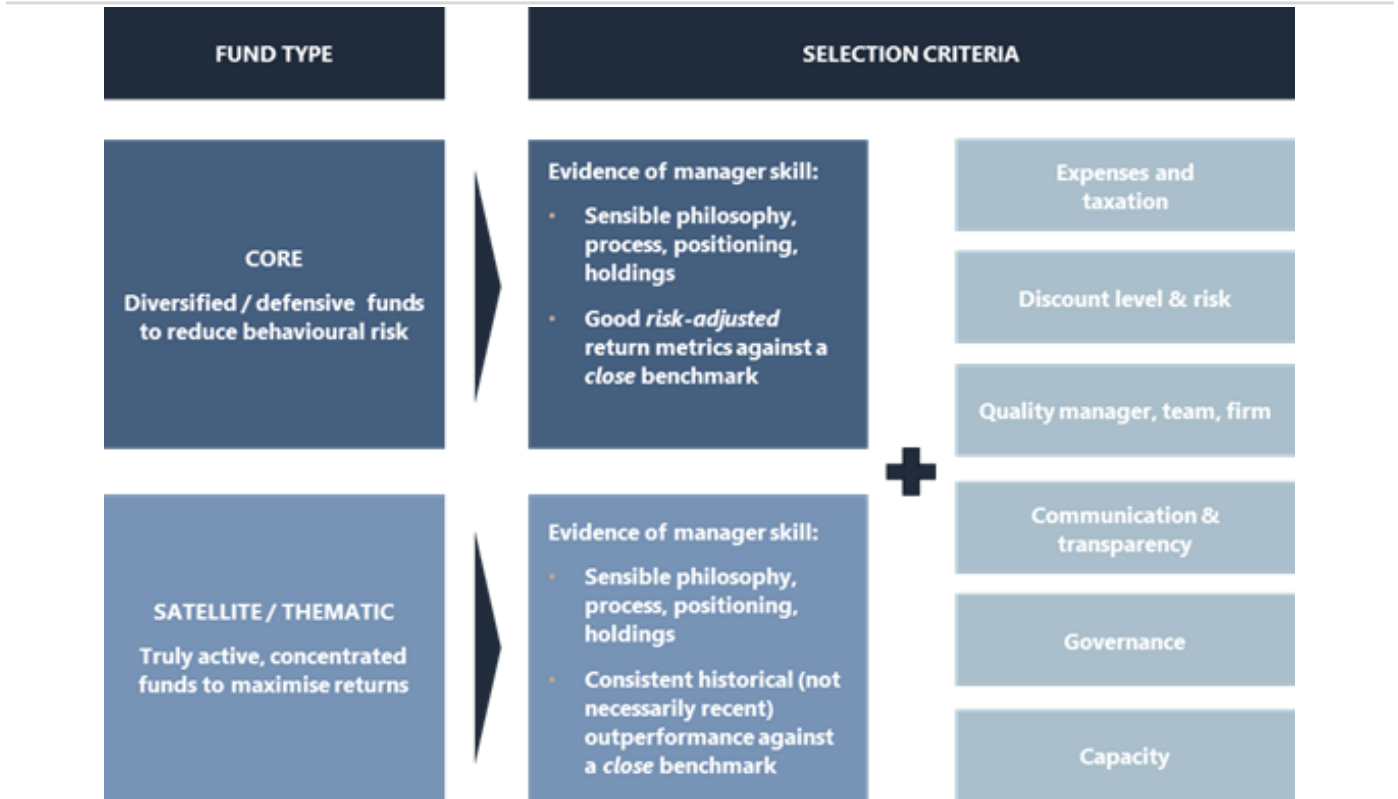
If the above basic requirements are met, the team may:

- Speak with the fund manager to understand their philosophy and process
- Review commentary on the fund from external analysts (e.g. from Investec, Numis, Peel Hunt, Winterflood, Kepler, Lonsec, Zenith or others)
- Undertake more in-depth analysis of past performance, recent portfolio positioning and ESG characteristics
- Compile a due diligence dossier

Fund selection criteria

To evaluate funds, the team analyses both qualitative and quantitative factors (Figure 2). The importance of these criteria can vary between funds, depending on their type and their roles in portfolios.

Figure 2. Key fund selection criteria



Source: Forsyth Barr analysis

All funds

The team seeks the following characteristics in all funds:

- Sound fund governance
- A quality management company, or quality internal management
- An experienced manager with a well-resourced team
- A sensible management philosophy, process, positioning and fund holdings
- Transparent reporting of fund holdings and positioning
- Attractive fundamentals of fund holdings (Figure 3)
- Good communication about the manager's outlook and the rationale for the fund's positioning
- Adequate liquidity and low entry and exit costs
- Fund fees and expenses that provide good value
- A reasonably tax efficient structure for typical investors
- An attractive discount and/or good discount management (for trusts that trade at significant discounts or premiums to NAV)
- Adequate market capacity and underlying liquidity to invest in the way the manager intends
- No significant liquidity mismatches between a fund's redemption conditions and its underlying assets

Figure 3. Fund portfolio holdings fundamentals (example)

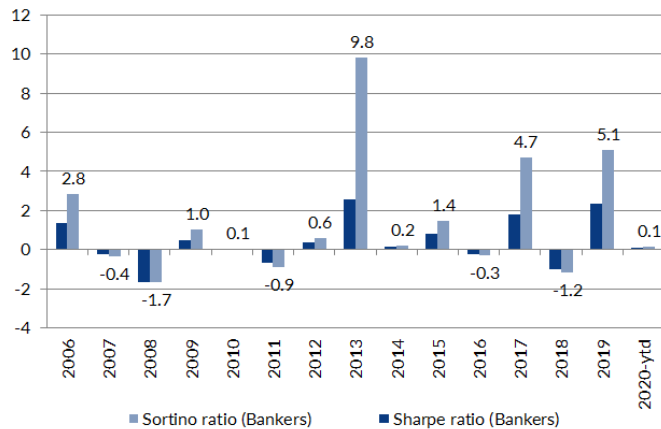
Sector Fund	Global			Regional	Sectoral		World
	Bankers	Monks	Scottish Mortgage	Templeton Emerging Markets	Polar Capital Global Tech UCITS	Worldwide Healthcare	iShares MSCI ACWI
Fund code	BNKR	MNKS	POLGTIU	TEM	POLGTIU	WWH	ACWI
Composition							
Number of holdings reported	176	127	106	88	111	75	2278
Market cap NZ\$bn	358	336	632	374	620	75	424
Average daily value traded NZ\$m	589	658	2,196	838	1,072	146	722
Analyst coverage	99%	95%	81%	98%	94%	95%	99%
Growth							
Revenue growth rate 12m fwd	+8%	+12%	+18%	+13%	+15%	+11%	+8%
EPS growth rate 12m fwd	+12%	+13%	+20%	+16%	+18%	+12%	+13%
Long term growth outlook	+9%	+11%	+17%	+16%	+16%	+12%	+9%
Forecast 5yr EPS growth (StarMine)	+7%	+9%	+13%	+12%	+13%	+10%	+7%
Forecast 10yr EPS growth (StarMine)	+8%	+9%	+12%	+10%	+11%	+10%	+8%
Quality							
Earnings Quality region rank/100	62	60	65	65	69	54	63
Return on equity	12%	11%	14%	15%	13%	6%	12%
Return on assets	9%	7%	6%	9%	10%	7%	8%
EBIT margin	15%	9%	9%	13%	12%	17%	15%
Value							
Value-Momentum global rank/100	47	43	37	63	42	36	52
Price to Intrinsic Value global rank/100	37	31	11	52	19	48	40
Relative Value global rank/100 (Trailing)	43	29	13	51	21	32	45
Price / Book	2.5x	3.3x	8.8x	1.8x	7.6x	2.6x	2.5x
EV to EBIT 12m trailing	21.9x	29.6x	63.5x	16.6x	33.0x	19.2x	22.7x
P/E 5yr trailing	20.5x	23.2x	39.7x	14.9x	29.3x	27.8x	19.8x
P/E 12m trailing	25.1x	32.2x	59.1x	18.2x	41.2x	25.7x	24.9x
(Forward-looking)							
Forward net dividend yield	2.0%	0.9%	0.2%	2.0%	0.5%	0.9%	2.0%
Forward free cashflow yield	3.7%	2.9%	1.3%	5.6%	2.1%	5.0%	3.7%
EV to EBIT 12m fwd	18.9x	26.7x	44.5x	12.9x	28.7x	14.1x	19.0x
P/E:Growth ratio	2.6x	2.6x	1.8x	1.4x	2.3x	1.7x	2.6x
P/E 12m fwd	19.6x	23.9x	51.5x	14.1x	34.7x	15.6x	19.0x
Investor sentiment							
Average analyst rating	BUY	BUY	BUY	BUY	BUY	BUY	BUY
Average analyst rating (score)	2.1	2.1	2.2	1.8	2.0	1.9	2.2
Analyst ratings momentum	0.2	0.2	-0.1	-0.4	0.2	0.0	0.3
Average expected capital return	+9%	+6%	-1%	+14%	+6%	+18%	+7%
Combined Alpha Model (regional rank /100)	53	48	46	71	53	46	58
Fit with fund manager preferences (global rank /100)	62	56	50	72	60	45	60
Momentum							
Last 12-month total return (local FX)	+24%	+56%	+260%	+31%	+77%	+28%	+35%
Last 3-month price change (local FX)	+8%	+15%	+18%	+11%	+13%	+9%	+9%
Price momentum. Global rank /100	63	72	89	63	87	56	65
Analyst revisions. Global rank/100	52	58	64	65	62	45	57
% of analysts revising EPS estimates ↑	16%	19%	28%	24%	27%	16%	23%
% of analysts revising EPS estimates ↓	12%	9%	7%	10%	5%	18%	9%
Risk							
Price volatility, annualised	41%	46%	57%	40%	49%	51%	43%
Beta to index in down months	1.00	1.07	1.03	1.10	1.08	0.64	1.00
Beta to MSCI ACWI in NZD	0.91	1.05	1.14	0.77	1.02	1.00	0.98
Probability of default in next 12m	0.11%	0.12%	0.09%	0.08%	0.06%	0.12%	0.13%
Balance sheet liquidity (Quick Ratio)	1.5x	2.2x	2.0x	1.7x	2.5x	2.9x	1.5x
EBIT/interest coverage ratio	7.5x	4.8x	5.6x	7.1x	4.4x	5.9x	7.7x
Net debt / enterprise value	16%	11%	3%	9%	2%	15%	17%

Source: Forsyth Barr analysis, Refinitiv

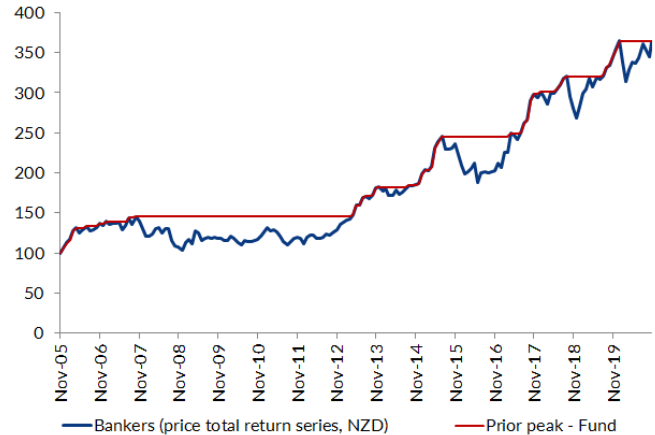
Core funds

For core funds, the team looks for:

- Signs of manager skill, for example in the form of good historical risk-adjusted return metrics against a close benchmark (which may be different than the benchmark the manager uses to evaluate their own performance) (Figures 4 & 6)
- A tolerable profile of fund return drawdowns (Figure 5)
- Low fees and expenses

Figure 4. Risk-adjusted return metrics (example: Bankers)


Source: Forsyth Barr analysis, Bloomberg

Figure 5. Drawdowns from prior fund peak (ulcer ratio)


Source: Forsyth Barr analysis, Bloomberg

Figure 6. Risk & return metrics (example)

Fund	Funds						Portfolios			World
	Bankers	Monks / BGGGA	Scottish Mortgage	Templeton Emerging Markets	Polar Capital Global Tech UCITS	Worldwide Healthcare	Conservative	Balanced	Growth	MSCI ACWI
Fund code	BNKR	MNKS	SMT	TEM	POLGTIU	WWH	Con	Bal	Gro	ACWI
NAV returns & outperformance										
Compound return, 3 years annualised	7.9% p.a.	10.9% p.a.	16.0% p.a.	7.6% p.a.	15.9% p.a.	13.0% p.a.	10.6% p.a.	11.5% p.a.	16.2% p.a.	7.4% p.a.
Alpha vs MSCI ACWI	+0.5% p.a.	+3.4% p.a.	+8.6% p.a.	+0.2% p.a.	+8.5% p.a.	+5.6% p.a.	+3.2% p.a.	+4.0% p.a.	+8.7% p.a.	0.0% p.a.
Highest 12-month rolling return	+35.7%	+41.8%	+87.7%	+78.5%	+52.5%	+80.1%	+41.0%	+40.5%	+72.2%	+32.5%
Lowest 12-month rolling return	-28.4%	-36.9%	-45.7%	-46.7%	-27.3%	-18.0%	-26.3%	-29.1%	-38.0%	-24.9%
Frequency of rolling "up" quarters	70%	73%	71%	62%	74%	65%	71%	72%	73%	70%
Frequency of rolling quarterly outperf.	53%	71%	67%	49%	67%	56%	66%	66%	70%	0%
Risk										
Maximum drawdown from prior high	-31.1%	-38.6%	-47.7%	-48.5%	-38.9%	-26.0%	-27.1%	-30.4%	-41.3%	-27.9%
Average recovery from max drawdown	4.3 years	3.8 years	3.1 years	6.1 years	2.4 years	1.8 years	2.7 years	2.8 years	2.6 years	4.1 years
Calmar ratio	0.25	0.28	0.34	0.16	0.41	0.50	0.39	0.38	0.39	0.27
Ulcer index	12.2%	14.0%	13.7%	16.0%	12.8%	10.8%	8.5%	8.8%	11.1%	10.9%
Sortino ratio	0.11	0.17	0.28	0.09	0.30	0.23	0.19	0.22	0.30	0.10
Sharpe ratio	0.27	0.43	0.62	0.22	0.65	0.50	0.45	0.50	0.66	0.24
Downside deviation, monthly, annual.	9.2%	10.9%	12.3%	12.8%	11.1%	10.8%	8.9%	9.2%	11.2%	8.8%
Total volatility, monthly, annualised	13.2%	15.2%	19.0%	18.2%	17.5%	17.4%	13.3%	13.8%	17.5%	12.6%
Relationship between fund and index										
Correlation of returns to MSCI ACWI	0.95	0.89	0.83	0.70	0.83	0.63	0.96	0.95	0.87	1.00
Beta to MSCI ACWI in NZD	1.02	1.01	1.18	1.06	1.08	0.93	0.00	0.00	0.00	0.00
Tracking error, annualised	4.0%	6.9%	11.0%	13.0%	9.9%	13.7%	3.9%	4.5%	9.0%	0.0%
Information ratio, annualised	0.13	0.49	0.78	0.01	0.86	0.41	0.81	0.90	0.96	-

Source: Forsyth Barr analysis, Bloomberg

Return metrics:

- Frequency of rolling "up" quarters: Proportion of 3-month periods where the total return was positive. Higher is better.
- Frequency of rolling quarterly outperformance: Proportion of 3-month periods where the fund outperformed the MSCI ACWI index. Higher is better.
- Maximum drawdown from prior high: Difference between peak price and subsequent lowest price. Smaller loss is better
- Average time to recover from maximum drawdown: Maximum drawdown / average 12-month rolling return. Lower is better.

Risk metrics:

- Calmar ratio: Compound annualised growth rate / maximum drawdown. Higher is better.
- Ulcer ratio: Depth of drawdowns x time required to recover. Lower is better.
- Sortino ratio: Average return less minimum acceptable return (5% pa) / downside volatility. Higher is better.
- Sharpe ratio: Average return less minimum acceptable return (5% pa) / total volatility. Higher is better.
- Downside deviation: Standard deviation of returns below the minimum acceptable return (5% pa). Measures undesirable volatility. Lower is better
- Total volatility: Standard deviation. Measures both downward and upward price moves as "risk".

Relationship metrics:

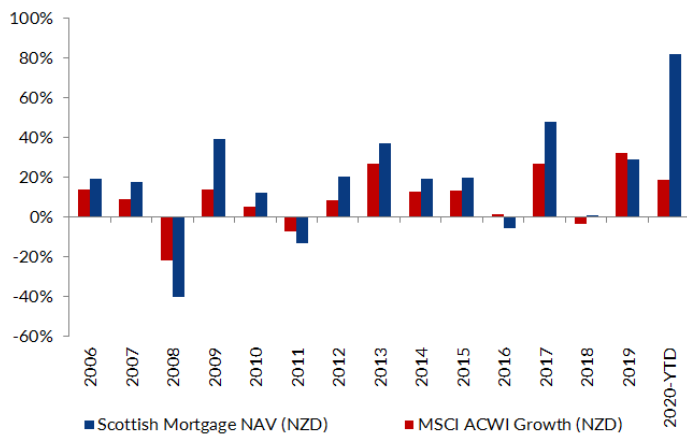
- Correlation of monthly returns: Degree of similarity in direction of monthly price moves between fund and MSCI ACWI index. Lower means more different.
- Beta to MSCI ACWI in NZD: Sensitivity of the fund (in NZD) to a change in the MSCI ACWI index (in NZD).
- Tracking error: Indicator of how closely portfolio tracks benchmark. Higher means more different.
- Information ratio: Fund outperformance / tracking error. Higher is better.

Satellite funds

For satellite funds:

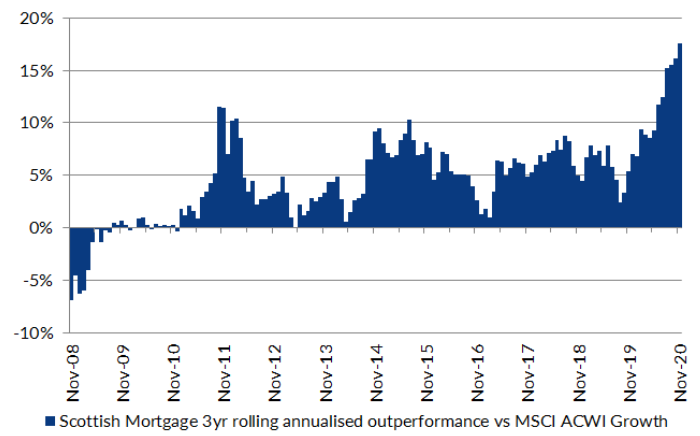
- Evidence of manager skill will be evaluated based on a history of outperformance against a relevant close benchmark. The outperformance need not be recent, as even skilled managers will underperform at times (Figures 7, 8, 9, 10).
- Less emphasis will be placed on the volatility and risk-adjusted returns of individual satellite funds, as higher volatility is an expected outcome of how such funds are managed (often with narrow market universes, pronounced style biases, concentrated portfolios, higher gearing, etc).
- More focus will be placed on qualitative assessment of drivers of risk and returns, and of how risk when combined in a portfolio with other funds (e.g. Figure 6 above shows risk/returns of Conservative, Balanced and Growth-style portfolios of funds).
- Fees for satellite funds must be reasonable but in some cases may be higher than for core funds.

Figure 7. Calendar year total return vs benchmark (example)



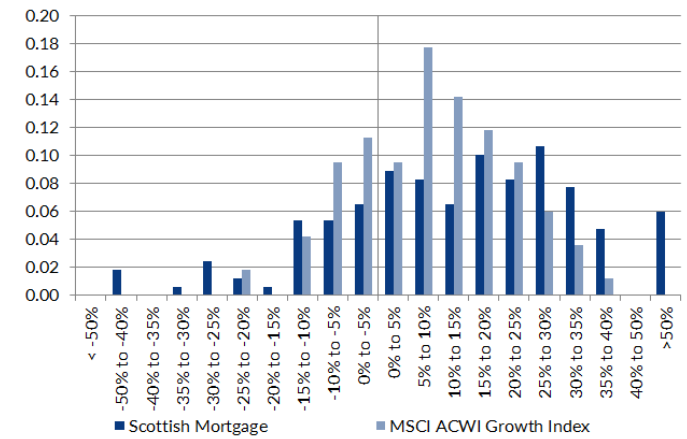
Source: Forsyth Barr analysis

Figure 8. 3-yr rolling outperformance vs benchmark (example)



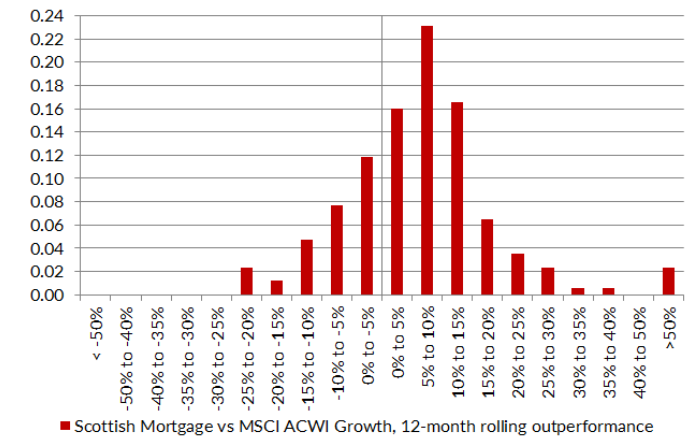
Source: Forsyth Barr analysis

Figure 9. Frequency distribution of fund and index total returns, 12-month rolling, Nov-2005 to Nov-2020 (NAV, NZD)



Source: Forsyth Barr analysis, Bloomberg

Figure 10. Frequency distribution of fund outperformance, 12-month rolling, Nov-2005 to Nov-2020 (NAV, NZD)



Source: Forsyth Barr analysis, Bloomberg

Responsible investing ("ESG") funds

In selecting **responsible investing ("ESG") funds**, the team will look for:

- Clear ESG screening criteria
- Signs that the fund's holdings are likely to meet a typical client's ESG investing criteria, such as a smaller proportion of holdings with controversial product involvement than a comparable benchmark, or higher average ESG ratings, or lower average carbon intensity (Figures 9 & 10)

Figure 11. Portfolio involvement in controversial products (weighted %)

Sector Fund	Global ESG screened funds					Global impact funds				Aus ESG	Non-ESG comparisons	
	iShares MSCI ACWI Low Carbon Target	Xtrackers MSCI World ESG UCITS ETF	iShares MSCI World SRI UCITS ETF	VanEck Vectors MSCI International Sust Eq ETF	Beta-Shares Global Sustainability Leaders ETF	iShares MSCI Global Impact ETF	FP WHEB Sustainability A Acc	Janus Henderson Global Sustainable Equity	Impax Environmental Markets	Beta-Shares Australian Sustainability Leaders ETF	Beta-Shares Australia 200 ETF	iShares MSCI ACWI ETF
Fund code	CRBN.K	XZWO.L	SUWS.L	ESGI.AX	ETHI.AX	SDG.N	LP68013728	LP68563464	IEM.L	FAIR.AX	A200.AX	ACWI.O
Weapons												
Anti-Personnel Landmines	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cluster Bombs	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Armaments / Military Services	4%	3%	4%	4%	1%	0%	7%	3%	6%	0%	0.1%	4%
Civilian Firearms Production or Retail	0.4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%
Environmental controversies												
Nuclear Energy	4%	2%	1%	2%	0.1%	2%	6%	0%	0%	0%	9%	5%
Agrochemical Products	2%	1%	1%	0.1%	0%	0%	2%	0%	0%	0%	4%	2%
GMO Products	4%	3%	5%	6%	2%	3%	0%	1%	0%	0%	0.05%	4%
Social controversies												
Animal Testing for Cosmetics	3%	5%	7%	6%	0.2%	6%	0%	2%	0%	0%	0%	2%
Animal Testing (incl. Pharma)	14%	18%	22%	23%	10%	28%	12%	2%	3%	13%	9%	14%
Tobacco Production	1%	1%	1%	3%	1%	0%	0%	0%	0%	0%	1%	1%
Tobacco Retailing	1%	0.2%	0.05%	0%	0%	0%	0%	0%	0%	0%	0%	0.3%
Alcohol Production & Distribution	2%	1%	0.5%	0.3%	0.1%	0%	0%	0%	0%	0%	6%	2%
Alcohol Retailing	4%	1%	0.5%	0.5%	0.5%	1%	0%	0%	0%	0%	3%	4%
Gambling	1%	0.1%	0.2%	0%	0%	0%	0%	0%	0%	0%	6%	1%
Pornography or AO-Rated Games	5%	2%	0.5%	2%	4%	0%	0%	0%	0%	0%	0%	5%
Religious controversies												
Abortifacients	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%
Contraceptives	2%	3%	0.1%	0%	0%	0%	2%	0%	0%	0%	0%	2%
Embryonic Stem Cell Research	4%	7%	5%	7%	5%	2%	3%	0%	0%	0%	0%	4%
Pork Production or Retail	5%	1%	1%	2%	0.5%	4%	0%	0%	4%	3%	3%	5%
Total % of portfolio	56%	47%	51%	55%	25%	45%	32%	8%	13%	16%	41%	56%

Note: Full company weight shown, even if controversial activity is only a small revenue contributor. Armaments & Military Services includes any equipment or services provided for military use.

Source: Forsyth Barr analysis, Refinitiv

Figure 12. Portfolio exposure to companies with certain positive ESG policies/activities (weighted % of portfolio)

Sector Fund	Global ESG screened funds					Global impact funds				Aus ESG	Non-ESG benchmarks	
	iShares MSCI ACWI Low Carbon Target	Xtrackers MSCI World ESG UCITS ETF	iShares MSCI World SRI UCITS ETF	VanEck Vectors MSCI International Sust Eq ETF	Beta-Shares Global Sustainability Leaders ETF	iShares MSCI Global Impact ETF	FP WHEB Sustainability A Acc	Janus Henderson Global Sustainable Equity	Impax Environmental Markets	Beta-Shares Australian Sustainability Leaders ETF	Beta-Shares Australia 200 ETF	iShares MSCI ACWI ETF
Fund code	CRBN.K	XZWO.L	SUWS.L	ESGI.AX	ETHI.AX	SDG.N	LP68013728	LP68563464	IEM.L	FAIR.AX	A200.AX	ACWI.O
Health												
Healthy Products	18%	21%	26%	22%	19%	22%	10%	11%	13%	9%	8%	18%
Organic Products Initiatives	10%	9%	13%	15%	6%	5%	0%	4%	4%	1%	7%	10%
Obesity Risk Reduction	3%	6%	5%	3%	3%	0%	0%	0%	0%	0%	0%	3%
Environment												
Environmental Products	68%	73%	76%	78%	63%	78%	69%	74%	74%	43%	51%	68%
Renewable / Clean Energy Products	22%	20%	20%	24%	14%	33%	23%	23%	39%	7%	28%	22%
Water Technologies	9%	10%	14%	17%	5%	16%	28%	4%	27%	2%	1%	9%
Hybrid Vehicles	6%	5%	7%	2%	9%	25%	5%	10%	6%	0%	0%	6%
Sustainable Building Products	6%	8%	8%	15%	6%	11%	9%	12%	15%	5%	4%	6%
Real Estate Sustainability Certifications	5%	3%	4%	6%	7%	11%	1%	4%	3%	18%	6%	5%
Fossil Fuel Divestment Policy	1%	2%	2%	5%	2%	0%	0%	0%	0%	2%	0%	1%
Social												
Animal Testing Reduction	12%	16%	20%	20%	8%	19%	7%	2%	3%	13%	9%	12%
Religious												
Shariah Compliant	19%	25%	28%	25%	21%	30%	55%	31%	41%	47%	42%	20%
Total % of portfolio	181%	200%	222%	232%	162%	252%	206%	176%	225%	146%	156%	181%

Source: Forsyth Barr analysis, Refinitiv

Figure 13. Portfolio ESG scores (weighted average percentile ranks within portfolio companies' sectors)

Sector Fund	Global ESG screened funds					Global impact funds				Aus ESG	Non-ESG benchmarks	
	iShares MSCI ACWI Low Carbon Target	Xtrackers MSCI World ESG UCITS ETF	iShares MSCI World SRI UCITS ETF	VanEck Vectors MSCI Interna- tional Sust Eq ETF	Beta- Shares Global Sustaina- bility Leaders ETF	iShares MSCI Global Impact ETF	FP WHEB Sustaina- bility A Acc	Janus Henderson Global Sustainable Equity	Impax Environ- mental Markets	Beta- Shares Australian Sustaina- bility Leaders ETF	Beta- Shares Australia 200 ETF	iShares MSCI ACWI ETF
Fund code	CRBN.K	XZWO.L	SUWS.L	ESGI.AX	ETHI.AX	SDG.N	P6801372.P6856346.	IEM.L	FAIR.AX	A200.AX	ACWI.O	
Portfolio ESG coverage	* 99%	100%	100%	100%	100%	100%	97%	98%	92%	100%	99%	99%
Overall ESG scores												
ESG Combined Score	** 54	56	62	62	54	59	59	57	53	61	56	53
ESG Controversies Score	^ 59	56	69	64	60	80	94	76	96	89	61	57
ESG Score	*^ 67	71	72	75	65	65	60	63	54	63	70	66
1-year change in ESG Score	^^ +1.8	+0.6	+1.8	+1.1	+1.3	+2.3	+4.6	+1.7	+3.3	+3.4	+2.1	+1.7
Environment factors												
<u>Environment Pillar Score</u>	63	68	70	73	58	69	51	57	50	48	60	63
Resource Use Score	74	81	81	85	73	73	62	67	53	58	69	74
Emissions Score	70	76	78	83	71	69	52	63	46	59	65	70
Environmental Innovation Score	44	46	49	52	35	54	37	44	48	28	36	44
Social factors												
<u>Social Pillar Score</u>	70	75	75	79	68	66	66	66	56	68	74	70
Workforce Score	76	82	80	86	76	73	68	70	56	81	84	75
Human Rights Score	61	68	66	73	56	58	61	54	51	52	65	60
Community Score	76	81	82	80	79	66	74	77	61	72	78	76
Product Responsibility Score	64	67	69	73	58	65	61	56	52	59	63	64
Governance factors												
<u>Governance Pillar Score</u>	64	66	68	70	65	60	59	61	53	65	74	64
Management Score	66	68	70	72	68	60	65	65	56	70	79	67
Shareholders Score	55	55	57	59	57	52	50	52	49	52	58	55
CSR Strategy Score	64	73	74	75	63	68	45	54	45	58	75	64
Diversity inclusion in workplace	59	60	61	62	59	58	56	55	48	57	61	58
CO2 emitted (t) per US\$1m revenue	106	75	61	20	14	162	236	62	158	418	293	194

* No ESG data is included for unlisted investments, funds, derivatives and cash; small caps and recent listings are often excluded from coverage

** ESG Combined Score is the ESG Score adjusted for the ESG Controversies Score

^ ESG Controversies Score: Higher score = fewer controversies

*^ ESG Score: Combination of the Environmental Pillar Score, Social Pillar Score and Governance Pillar Score

^^ Average change in the ESG Score of recent portfolio stocks compared to a year ago

Source: Forsyth Barr analysis, Refinitiv

Appendix

Observations & assumptions

The guiding principles and beliefs and the fund selection criteria outlined above are based on the following observations and assumptions about how funds have historically performed and how fund managers have behaved. For each observation/assumption, we also outline the implication for fund selection.

Portfolio structure and volatility

- Concentrated funds are probably more volatile than diversified ones. Significant short-term volatility (e.g. large drawdowns) could cause clients to lose faith in the investment case for a fund, which raises the behavioural risk of return chasing (selling recent underperforming funds and buying recent outperformers), which has been found to reduce investors' long-term returns.
 - Combine diversified, defensive "core" funds that have low discount risk (and lower probability of outperformance or significant volatility) with higher conviction funds (with higher probability of outperformance over long time periods but with higher volatility).

Performance

- Observation: Evidence of persistence of fund outperformance is mixed: Returns mean-revert over very short periods (~1 month), but momentum effects can lead to return persistence over short/medium periods (~1 quarter to 1 year), and returns tend to mean-revert over long periods once fund survivorship bias is accounted for.
 - Implication: Fishing in the pond of historical very short- or long-term outperformers (while ignoring other quantitative factors like fees and qualitative assessment of management) raises the odds of picking a future underperformer.
- Timing fund purchases is difficult, especially based on past performance.
 - Avoid return-chasing in both active and passive funds.
- Active, large-cap, long-only, global equity fund managers on average can outperform broad global benchmarks before fees.
 - Prefer active global funds over similarly priced passive ones.
- Funds whose stock selections and/or portfolio weights differ significantly from the benchmark (high "active share") are more likely to outperform.
 - Avoid active funds that have similar stock composition and weightings as their benchmark; use low-cost passive products if a high level of diversification is more important than the opportunity to outperform.
- Security selection (rather than asset allocation, geographic and sector allocation or currency management) is the key source of outperformance within active, global, large-cap, long-only equity funds.
 - Select managers that focus on stock selection, and that have showed skill in stock selection.
- Mutual fund managers' highest conviction stocks performed better than the benchmark and than the lower conviction stocks in the same portfolios. (The same does not seem to apply to hedge fund managers).
 - Combining several concentrated, high conviction satellite, long-only equity funds should provide higher returns than a single manager's diversified fund.

Analysing performance

- Fund returns comprise both skill and luck. Cumulative past performance by itself doesn't confirm manager skill. Some analytical tweaks may help sort skill from luck.
 - Managers' batting averages (the ratio of profits earned from successful investments vs the losses made in unsuccessful ones) mean-revert over time and so are of limited use as a signal of skill.
- Identifying whether a manager is skilled at picking stocks within their opportunity set helps predict future performance.
 - Comparing fund performance to a close benchmark (e.g. a relevant factor or sector index) helps isolate skill by reducing some of the systematic components of returns that could be obtained from a passive index-tracking fund.
- Low Sharpe ratios are more predictive of future underperformance than nominal returns, but they are not particularly reliable either.
 - Adjusting past returns for risk (e.g. Sharpe or Sortino ratios) reduces the luck component and may thereby help rule out the least skilled managers.
- Many fund managers are incentivised based on risk/return relative to a benchmark, which in turn prompts padding out of portfolios with lower conviction stocks to reduce volatility and boost Sharpe ratios. This dilutes return potential.
 - Avoid focussing on volatility metrics for individual funds, because they penalise for the idiosyncratic risk that results from high manager conviction. Instead, apply volatility metrics at the portfolio level of fund combinations.

Investment capacity

- Few fund managers can resist growing their funds under management. Doing so forces them to move up the market cap scale and/or to "diworsify" across more stocks than they otherwise would, diluting their skill and conviction.
 - Avoid funds and managers that have grown to a very large size and that have not passed the economies of scale through to their investors through lower fees and expenses.

Liquidity

- Large ETFs are usually very liquid and their prices rarely deviate much from their net asset values.
- The liquidity of trusts/LICs varies depending on their size. Most of them regularly trade at differing discounts to NAV, which can accentuate volatility.
 - All other things being equal, prefer larger ETFs and trusts funds over smaller ones (assuming fund size is well below investment capacity).
- Open-ended funds are usually bought and sold at or near end-of-day NAV, reducing day-to-day volatility. Most open-ended equity funds provide daily liquidity.
 - Size is of lesser importance than redemption conditions in unlisted open-ended funds.
- The open-ended nature of ETFs and unlisted open-ended funds means their managers have to contend with inflows and outflows.
- In open-ended structures, inflows and outflows can mean that liquidity mismatches emerge if the funds invest in illiquid assets. Market stress can prompt "runs" on such funds, requiring redemption freezes or firesales of assets to fund redemptions, but these are rare in the case of funds that invest in quoted equities.
 - Be cautious of open-ended funds with illiquid assets, where in/outflows could overwhelm the manager's ability to liquidate underlying holdings during market stress.
- The closed-end nature of trusts and LICs means they have a (semi)-permanent capital base. They sometimes use share buybacks to help manage the level of discounts to NAV, which means the level of capital can vary, but this is within the control of a trust's board.
 - Use closed-ended structures to invest in illiquid assets such as private equity, unlisted property, infrastructure, small-cap equities, and frontier market equities, but be prepared to hold on when discounts widen during market turbulence.

Costs

- The average manager's margin of outperformance would be narrowed to almost nothing by high costs.
 - Avoid funds with high fees & expenses. Where there is little to differentiate two funds, select the cheaper of the two.

Tax

- Tax is as much a cost to investors as fund fees, but the level and impact of tax is more opaque and less predictable than fees because it can depend on the type and level of returns.
 - Tax needs to be considered alongside all other factors that may drive net fund returns for investors.

- Some tax considerations for NZ resident investors in equity funds include (in no particular order):
 - Stamp duties
 - Non-resident withholding taxes levied on dividends/distributions between some jurisdictions (e.g. on dividends paid by European companies into US-domiciled funds, or on distributions from US funds into Australian funds or directly to NZ investors)
 - Taxes paid by funds themselves (e.g. tax on dividend income and realised capital gains paid by Australian LICs)
 - FIF status of funds (e.g. many Australian LICs are FIF-exempt)
 - The ability of funds or investors to offset one set of taxes against another
 - Estate taxes in some jurisdictions (e.g. the US and UK, although in practice enforcement of these appears to be limited)
- It is our understanding that NZ unlisted PIEs that directly hold underlying securities may be the most tax-efficient fund structure for some NZ investors. In general we expect that funds which invest through multiple layers of fund vehicles and jurisdictions are likely to be less tax efficient than vehicles which have fewer layers and which are domiciled in the countries where they predominantly invest, or in low-tax jurisdictions (e.g. Ireland, Luxembourg).

Governance

- Trusts have boards of directors, which – if genuinely independent and not hamstrung by onerous management contracts – can advocate for the interests of shareholders, manage share buybacks, negotiate fees, change the manager, etc. These factors may help mitigate some of the disadvantages of trusts, such as the varying discounts/premiums to NAV.

Communications

- A fund's philosophy, process and positioning, and the manager's rationale for it are important for understanding how a fund fits into a portfolio and how it may perform in future.
- Transparency into a fund's holdings is essential for evaluating the ESG properties of a fund.
 - Avoid funds whose managers are not forthcoming about their current investment thinking or transparent about their portfolios.

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