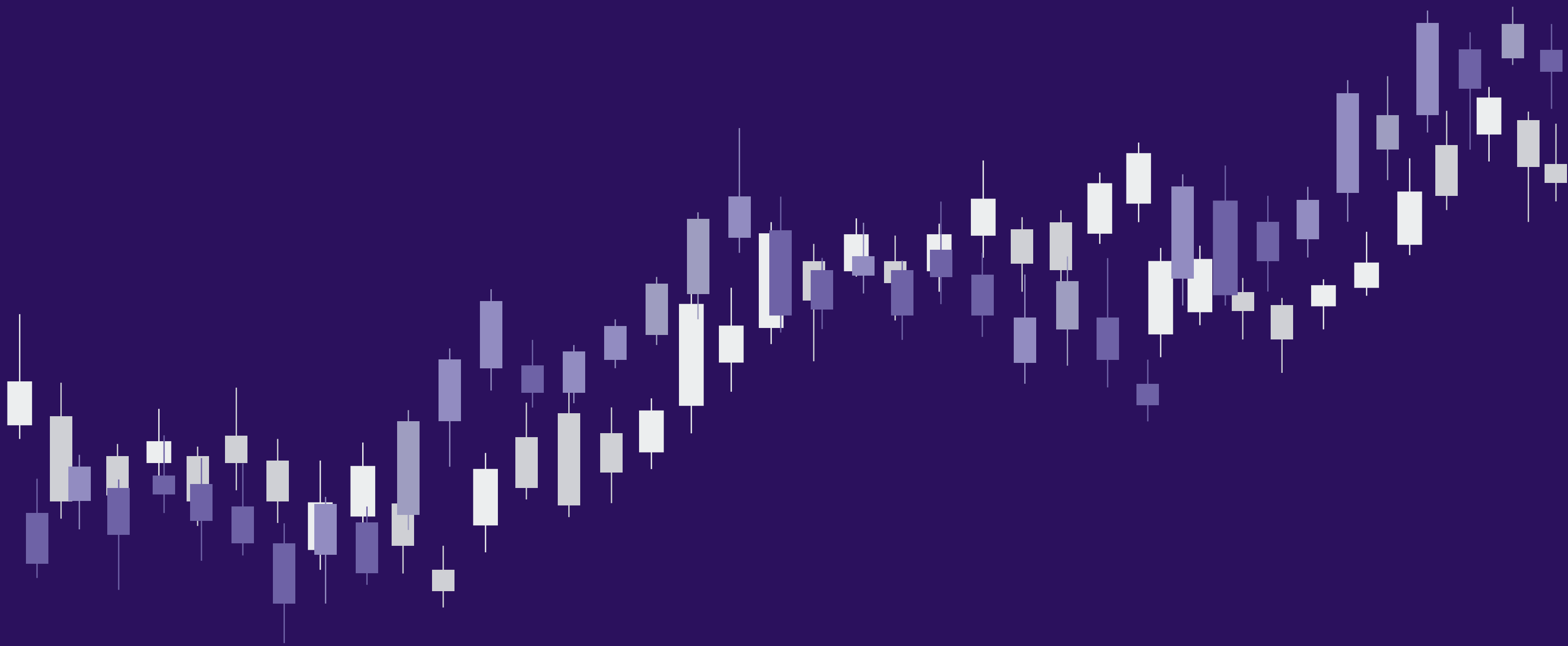
Consilium

Why we allocate to Dimensional funds

by Ben Brinkerhoff and Damon O'Brien

Why we allocate to Dimensional funds



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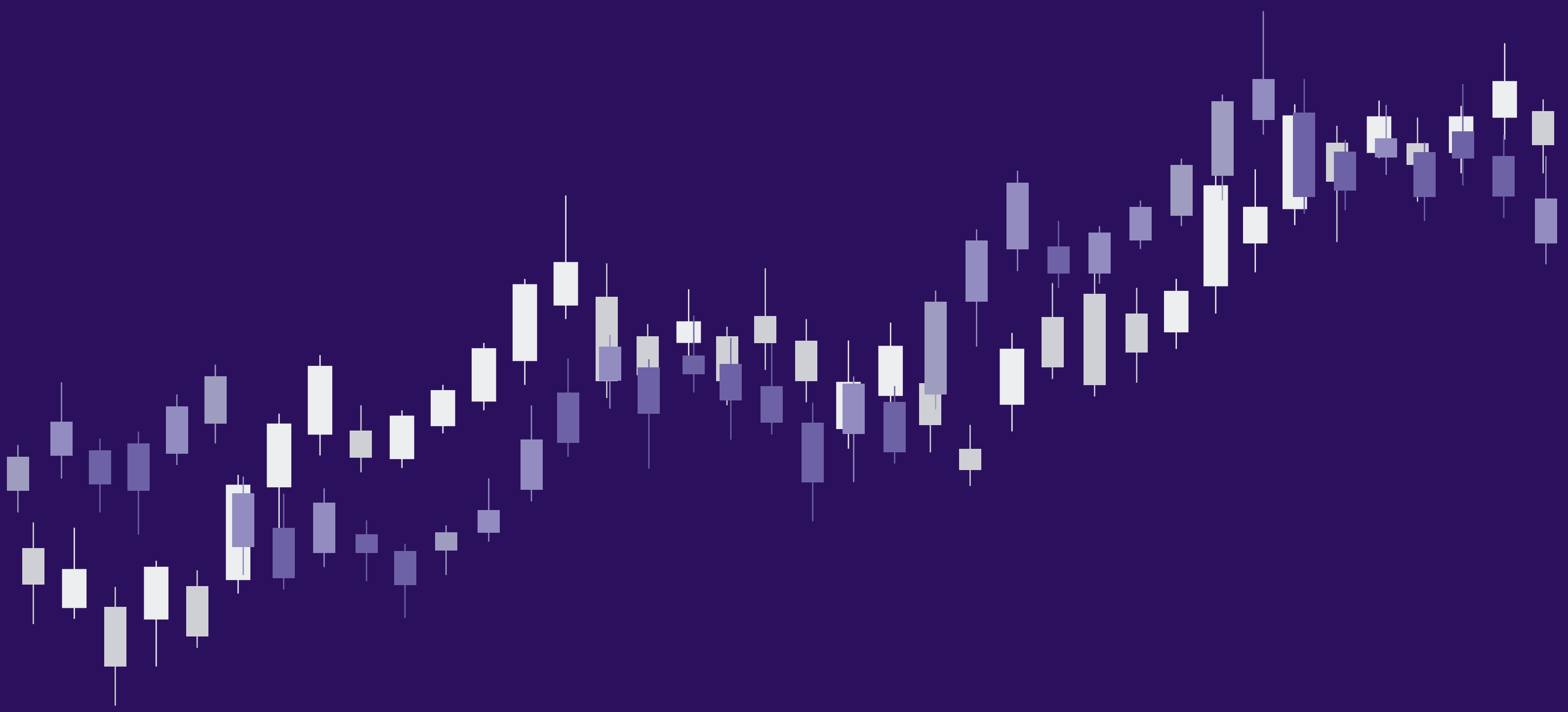


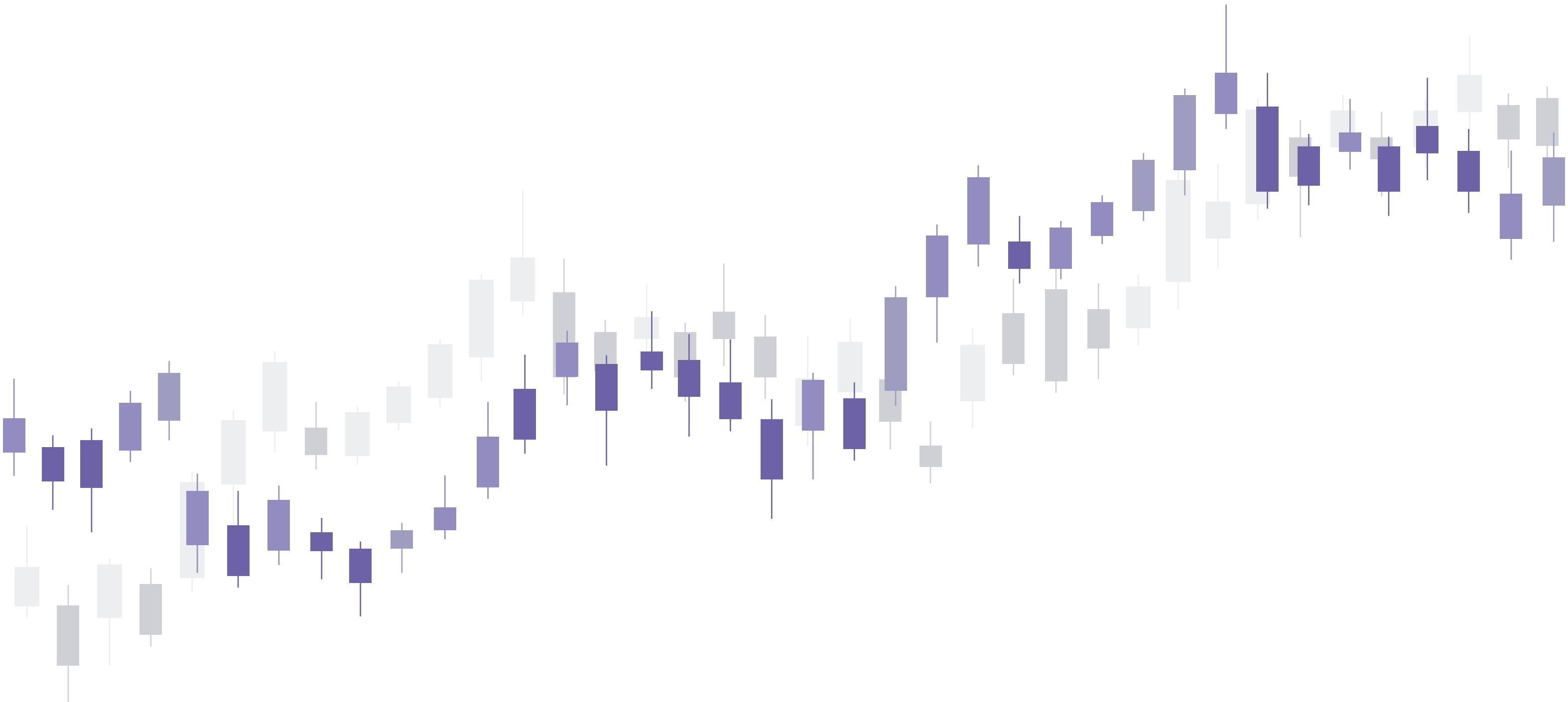
Occasionally Consilium is asked why we allocate a high proportion of investment assets to the range of funds supplied by Dimensional Fund Advisers (Dimensional or DFA). Consilium is completely independent and could allocate to any fund manager that passed our comprehensive due diligence, so why use Dimensional to such an extent?

This is an entirely reasonable question and it's based around a concern that has some intuitive logic.

The concern is that if we are using a number of funds from one fund manager, are we not compromising our principles around prudent diversification? Or worse, have we somehow increased risk in the portfolio?

The aim of this paper is to address both of those questions in some detail.

First, why does Consilium allocate so much to Dimensional?



Most managers fail to beat their benchmark

Over time, the vast majority of managers fail to outperform their benchmarks. This is not just true in Australasia, but across the globe. One excellent source of data in this regard is Standard and Poors (S&P)[1]. They keep detailed records on how many fund managers beat their benchmarks in almost every region of the globe. In all cases they find that the majority of fund managers fail to beat their benchmarks. Sometimes it's the vast majority.

[1] *Percentage of fund managers that beat (or outperform) their benchmark*

Fund Category	Comparison Index	10-Year (%)
US Large-Cap Equity	S&P 500	15
Australian Equity General	S&P/ASX 200	17
Europe Equity	S&P Europe 350	13
Eurozone Equity	S&P Eurozone BMI	9
Nordic Equity	S&P Nordic BMI	4
France Equity	S&P France BMI	12
Germany Equity	S&P Germany BMI	18
Italy Equity	S&P Italy BMI	35
Spain Equity	S&P Spain BMI	22
Netherlands Equity	S&P Netherlands BMI	7
UK Equity	S&P United Kingdom BMI	27
Denmark Equity	S&P Denmark BMI	15
Poland Equity	S&P Poland BMI	9
Switzerland Equity	S&P Switzerland BMI	27
Sweden Equity	S&P Sweden BMI	21
Indian Equity Large-Cap	S&P BSE 100	36
Japanese Large-Cap Funds	S&P/TOPIX 150	37
All Japanese Equity Funds	S&P Japan 500	36
Brazil Equity Funds	S&P Brazil BMI	15
Chile Equity Funds	S&P Chile BMI	3
Mexico Equity Funds	S&P/BMV IRT	14

This is sobering as it highlights that attempts to pick a winning manager are likely to be unsuccessful.
These findings are consistent with a wealth of academic evidence which suggests that even if you pick a manager with a good record over a recent time period, there is no evidence that the manager will maintain that good record in the next time period[2].

Still more data from S&P tells us that the average manager in the US over the last 15 years underperformed their index by 1.43%[3].

What all of this data strongly suggests is that choosing a manager based on good recent performance is often a very poor selection method. Instead, if you simply choose to allocate to a fund manager that achieves the returns of the index, minus a very small fee, the evidence suggests you can realistically expect to do better than most managers.

Dimensional's performance versus the benchmark

Dimensional has 58 funds that have at least a 20-year track record. A 20 year history gives us significantly more data than the one, three, or five year returns that are typically used to make allocation decisions.

When we compare how these longstanding funds performed (after fees) against their benchmark since their inception, we note the following:

- 49 of the 58 funds have outperformed benchmarks (84%)
- 9 of the 58 funds have underperformed benchmarks (16%)
- When funds outperform, average outperformance is 1.15%
- When funds underperform, average underperformance is 0.24%
- Taken together, average performance is 0.93% above benchmark

So, while only 15% of US managers outperformed their benchmarks over the last 10 years, 84% of Dimensional Funds with a minimum timeframe of 20 years have outperformed their benchmarks since inception. It's a remarkable difference in strike rates.

All 58 funds are listed in Appendix 1.

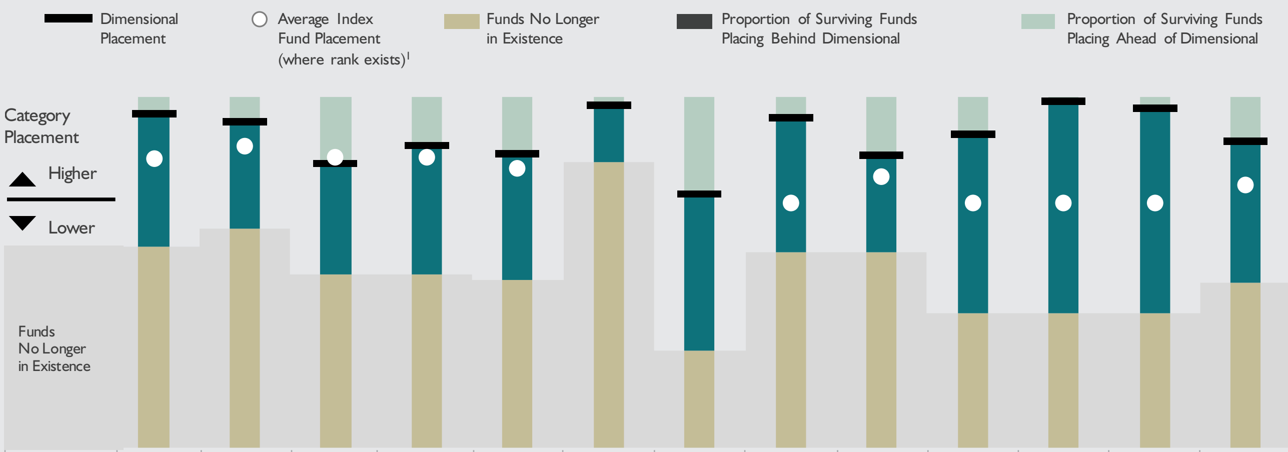
Analysing 58 funds at once can be unwieldy, so we have focused instead on a shorter list of 13 funds that could be considered Dimensional's flagship funds. They are funds that generally represent some of the largest growth asset classes that we can allocate.

Comparing these 13 funds to both peers and indexes over a common 15-year time horizon ending December 31st, 2018, reveals the following:

- **The index was a great investment.** In 11 asset classes, the index did better than the majority of the funds it was benchmarked against (in the other two asset classes a relevant benchmark has not been in existence for 15 years).
- **Dimensional funds generally outperformed the index.** In 10 of 11 asset classes with a benchmark index, Dimensional funds returned higher than the index.
- **Dimensional funds consistently delivered strong returns versus peers.** For example, in the US Large Cap Value universe, Dimensional's performance was ranked 47 out of 1,008 funds over the 15 year period.

The data for all 13 funds is summarised graphically below:

Flagship equity funds, relative 15-year performance as of December 31, 2018



Dimensional Fund Name	US Large Cap Value Portfolio I	US Large Company Portfolio	US Micro Cap Portfolio I	US Small Cap Portfolio I	US Small Cap Value Portfolio I	International Small Cap Value Portfolio I	International Small Company Portfolio I	International Value Portfolio I	Large Cap International Portfolio I	Emerging Markets Portfolio I	Emerging Markets Small Cap Portfolio I	Emerging Markets Value Portfolio I	Real Estate Securities Portfolio I
Dimensional Placement/ Number of Funds at Start	47/ 1,008	100/ 1,408	85/ 440	61/ 440	41/ 248	2/ 44	9/ 30	11/ 170	76/ 452	21/ 186	3/ 186	7/ 186	23/ 176

This data gives Consilium confidence regarding Dimensional's ability to outperform commercial benchmarks and peers over the long run, and therefore add demonstrable value to individual investor portfolios.

However, a good track record alone provides no guarantees about the future.

When active managers tout their outperformance, this often tells you very little about likely future outcomes. This is especially true when the source of the outperformance is the purported forecasting and stock picking skills of the managers themselves.

Academic studies reveal that funds that outperform in a given period do not usually exhibit any persistence in that outperformance beyond what we can expect by chance alone. There are many reasons why that might be the case.

Firstly, the successful fund manager could leave to join another firm, in which case any forecasting or stock picking skills that might exist, leaves the firm with them. Secondly, strong fund performance can lead to increased future fund inflows, and it can often be the case that the rate of fund inflows exceeds the rate of profitable new investment ideas. Thirdly, strong performance and strong fund inflows can often encourage a manager to raise their fees. Anyone (or more) of the above would usually only serve to reduce the subsequent performance of the fund.

Importantly, these issues do not affect Dimensional funds because the source of their outperformance is different.

1. Average Index Fund Placement is provided where index fund(s) with a 15-year Morningstar Total Return Absolute Rank exist in the category as of December 31, 2018. Dimensional placement is the Morningstar 15-Year Total Return Absolute Category Rank sourced from Morningstar. Number of funds starting the period is the number of share classes, within the respective Morningstar Category, with return histories as of the start of the 15-year period ending December 31, 2018. The Morningstar category data is provided at the individual fund share class level. Multiple share classes of a fund typically have a common portfolio but impose different expense structures. Proportion of Surviving Funds Placing Ahead (Behind) of Dimensional is the proportion of ranked funds with a higher (lower) Morningstar 15-Year Total Return Absolute Category Rank than the corresponding Dimensional fund. The Average Index Fund Placement is the average, as determined by Dimensional, of the Morningstar 15-Year Total Return Absolute Category Rank for index funds within the respective Morningstar category as of December 31, 2018. All funds are US-domiciled. ***Funds may have experienced negative performance over the time period. Past performance is no guarantee of future results. Visit us.dimensional.com for standardized performance information for Dimensional's funds. See "Relative Performance for Standardized Periods" in the appendix for further information.***

The Source of Dimensional's Outperformance

Dimensional's outperformance does not rely on the forecasting or stock picking skills of their fund managers. It is instead embedded into the structure and mandates of the funds themselves and is therefore much more likely to endure.

Among the many things Dimensional do differently, three of the most prominent are:

- **Consistency of risk exposure.** Compared to the market or a benchmark, Dimensional generally hold increased weights in companies that have higher expected returns. Such companies include smaller businesses, businesses with low prices relative to their assets, and businesses that have higher relative profits.
- **Lower costs.** Dimensional fees are generally amongst the lowest available in every asset class and they have remained low even though Dimensional funds have produced returns above benchmark over many years.
- **Patient trading.** When Dimensional need to make trades within their funds they take a cost-minimisation approach. They will typically generate orders across multiple companies that will each meet their trading criteria. However, they won't necessarily have a requirement to fill any particular order on any particular day. Instead, they will wait patiently for a few motivated counterparties to meet Dimensional's prices. This approach helps Dimensional transact at a lower cost than the average managed fund[4].

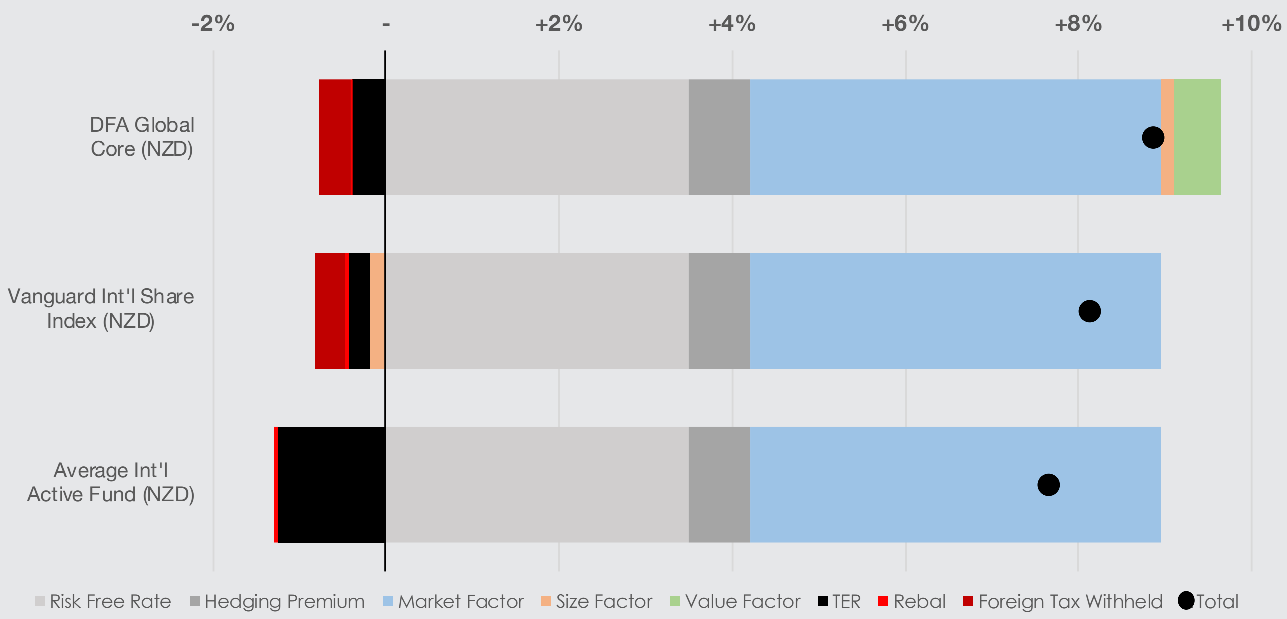
The reality of how funds are selected

When selecting funds for investor portfolios, Consilium looks comprehensively for all the funds that are low cost, highly diversified, have stable investment mandates and can show evidence that they ably capture market returns[5].

Once this list is compiled, we look at the data behind the funds. We consider the precise fund management costs and expense ratio. We look at how diversified the fund holdings are, and we calculate the expected net return of the fund based on the types of companies it seeks to consistently hold.

We then build portfolios by generally selecting the fund or funds in each asset class that offer the best net expected return (after fund costs). The result of this exhaustive analysis is that Dimensional funds often rise to the top of the list in each asset class and are strong candidates for selection.

Consilium repeats this process every year and, to warrant reselection each time, the Dimensional funds must continually reaffirm their merits against all other candidates.



Source: Consilium calculations estimated in the 2019 "Analysis of risk premiums and expected returns" paper, December 2018

To illustrate this exercise, in the graphic above we compare the gross and net expected return of the Dimensional Global Core Trust (NZD hedged) with the equivalent Vanguard fund and an amalgamation of active funds available in New Zealand for the same asset class. After considering risk exposures, taxes and fees, we conclude that the Dimensional Global Core Trust has the highest expected return, net of manager costs (the black dots).

In this particular example, the higher expected return of the Dimensional Global Core Trust is being driven by its systematic exposure to sources of additional expected return (intentional tilts towards small and value companies), and its overall lower fund costs.

Risk of using Dimensional

Now that we have explained how and why we select Dimensional funds in portfolios, we want to address the second question; whether Consilium is compromising our principles around prudent diversification by allocating so much to Dimensional. Or worse, have we somehow increased risk in the portfolio?

We'll answer this in two ways. Firstly, with respect to where the risk really sits, and secondly, we'll look at an unlikely scenario where Dimensional itself might run into difficulties. In either case, we will demonstrate how investors are protected.

Where the risk really sits

Intuitively, when you look at a portfolio and see several funds all from Dimensional, you might question whether you are looking at a well-diversified portfolio. While there is nothing wrong with the question, the reality is just the opposite; the portfolio is likely to be exceptionally well diversified.

It is an important distinction to understand that the risks in a portfolio don't reside in the funds themselves, they reside in what the funds own. By way of an analogy, the benefits of a present aren't found in the packaging, they are found in what the package contains.

A managed fund is simply a mechanism for investors to gain exposure to underlying securities. It is the mix of the underlying securities in the fund that determines the level of investment risk.

Fund managers can take very different approaches to how they recommend populating a fund. In Dimensional's case, they generally seek to utilise as much diversification as possible within the underlying securities they hold. Diversification is the most reliable mechanism by which managers can seek to control risk.

We can demonstrate the additional diversification supplied by Dimensional funds when we compare their fund holdings to some of the other options on our approved products list:

Dimensional fund	Holdings	Peer fund	Holdings
DFA Australian Small	202	Vanguard Australian Small Cap	147
DFA Global Core	5,894	Vanguard Developed Word ETF	2,966
DFA Emerging Markets	1,472	iShares MSCI Emerging Markets (AUD)	845

The argument is sometimes made that in each asset class, investors should hold both the Dimensional fund and the corresponding Vanguard and/or iShares fund, under the assumption that a multi-manager strategy would provide greater diversification. However, logically that can't be true.

As we can infer from the holdings' summary above, it is likely that all of the securities owned by the Vanguard or iShares funds are already owned by the corresponding Dimensional Fund. Although the asset class might contain two fund manager names instead of one, investors cannot be more diversified by holding the exact same securities in greater concentration. And that's often all that would be achieved by adding another fund manager like Vanguard. You would effectively be doubling down on the overlapping securities held by both funds and underweighting the remaining securities held by Dimensional alone.

This strategy would not increase diversification. If anything, it would be more likely to lead to higher trading, implementation and rebalancing costs.

About Dimensional and the ownership structure of its funds

Firstly, we should point out that Dimensional has over US$576 billion in assets under management[6]. To get a sense of that scale, Dimensional alone has enough assets to purchase every business listed on the NZX more than 6 times over[7]. By most ranking websites, Dimensional ranks inside the top 50 largest asset managers in the world[8]. Size doesn't mean everything, but for a firm founded in 1981, it is a clear reflection of significant growth and sustained success over a long period of time.

Dimensional structure their funds as managed investment unit trusts (trusts), meaning investors buy units in a trust when they make an investment. This gives the investor a beneficial ownership in the underlying assets of the trust.

Dimensional holds an Australian Financial Services Licence (AFSL 238093). The duties of Dimensional under the Corporations Act 2001 include:

- Acting in the best interests of investors and, if there is a conflict between investors' interests and Dimensional's interests, giving priority to investors' interests.
- Ensuring that trust property is clearly identified as trust property and held separately from property of Dimensional and the property of any other trust. Trust property is also valued at regular intervals.

There is a fundamental separation which exists between Dimensional's (the company) assets and the investor's assets.

Dimensional alone has enough assets to purchase every business listed on the NZX more than 6 times over

The assets in each Dimensional trust are held in custody by Dimensional's custodian, Citibank. Citibank is one of the world's largest custodians with over US$21.3 trillion of assets under custody and administration[9]. They are regulated in Australia by both the Australian Securities and Investment Commission (ASIC) and the Australian Prudential Regulation Authority (APRA). The money clients invest into a Dimensional trust, and the securities subsequently acquired by the trust using that money, are held by Citibank.

What happens if Dimensional ceases to exist as a business entity?

Dimensional is a US based business with strong cash inflows and profitability. In the unlikely event that it became insolvent, Citibank as custodian would continue to hold each trust's assets. Its role then would be to liaise with ASIC, and whoever was appointed the responsible entity, to ensure the best interests of investors were served.

At no time could client assets be used to meet the corporate liabilities of Dimensional. Dimensional has no ability, per se, to freeze funds.

Summary

We have tried to write this article in as approachable language as possible, given the complexities of securities management and the nuances of both Consilium's and Dimensional's investment approaches.

Consilium designs investment portfolios in an evidence-based environment and one of the most compelling pieces of evidence we have is that most managers fail to beat their benchmarks. In this regard, Dimensional has demonstrated it is not like most managers. A significant majority of Dimensional funds have been able to beat their benchmarks over long periods of time.

The drivers of this strong relative performance are observable. Dimensional funds tend to take consistent exposure to sources of higher expected return, they generally charge low fund fees and they intentionally engage in trading and portfolio management practices designed to minimise costs. All of these actions are beneficial to investors in Dimensional funds.

Dimensional funds are also extremely well diversified, allowing market wide investment exposures to be gained very effectively by, in many cases, utilising a selection of Dimensional funds alone.

Whilst the appearance of a high exposure to Dimensional funds might, on the surface, seem unusual, this is simply a result of Dimensional funds delivering the best overall solution across multiple asset classes. Adding more fund managers into the mix does nothing to improve investor diversification. It is more likely to lead to higher concentration risks in some securities and also more likely to lead to higher trading, implementation and rebalancing costs.

A more legitimate concern could perhaps be raised if Dimensional were also the recipient of client funds, but this function is externally managed by Citibank. All of the money that clients invest into Dimensional funds, and all of the securities subsequently purchased by those funds, are all held by Citibank, one of the world's largest custodians, for the benefit of the individual underlying investors. Dimensional, as the provider of investment strategy and trading expertise, never receive or handle a single cent of client funds.

Consilium is not aligned to Dimensional, or any other fund provider. Each year we re-evaluate each asset class to determine the best investment options available. Where Dimensional continue to demonstrate fund attributes clearly superior to their peers, we are very likely to continue to recommend their inclusion in client portfolios. If and when that ever ceases to be the case, we will recommend an allocation to the best alternative funds we have access to at that time.

All such changes will always be motivated by careful research and contingent upon our assessment of a demonstrable benefit accruing to investors.

1. *To see S&P Index vs Active (SPIVA) reports for multiple countries go to: https://us.spindices.com/search/?ContentType=SPIVA&_ga=2.152715708.406507956.1557286231-1191414971.1553549797*
2. *As an example of this evidence in New Zealand, see Bauer, Rob, Otten, Rogér and Tourani Rad, Alireza, "New Zealand Mutual Funds: Measuring Performance and Persistence in Performance," Accounting and Finance, Vol. 46, No. 3 (2006) pp. 347-363*
3. *Source: S&P Dow Jones Indices LLC. https://us.spindices.com/documents/spiva/spiva-us-year-end-2018.pdf?force_download=true Report 3" Average U.S. Equity Fund Performance (Equal Weighted), Category "All Domestic Funds" in comparison with the S&P Composite 1500.*
4. *Source: ITG*
5. *Source: This is not a comprehensive list or methodology for how Consilium selects funds. This can be found in the Consilium Investment Committee Policy and Procedure document under "Approved Products List" and is contained in the Investment Policy Statements used by many adviser firms.*
6. *Source: https://us.dimensional.com/ May 2019*
7. *June 21, 2019 NZX Total market cap is $144b NZD excluding ETFs and due listings. Exchange rate is 0.66*
8. *Source: https://www.advratings.com/top-asset-management-firms, April 2019*
9. *Source: https://www.citigroup.com/citi/news/2018/181218a.htm*

Appendix 1:

Comparison of all Dimensional Funds with a 20-year track record compared to its benchmark index

Data Series	Performance since Common Inception on Fund and Index	Benchmark	Benchmark Return	Over / Under performance relative to index	Inception Date
DFA US Micro Cap Portfolio Class I	11.76%	Russell 2000 Index	10.34%	1.42%	Jan-82
DFA US Micro Cap Subtrust	12.88%	Russell 2000 Index	10.68%	2.20%	Jun-82
DFA One-Year Fixed Income Portfolio Class I	4.53%	ICE BofAML 1-Year US Treasury Note Index	4.44%	0.09%	Aug-83
DFA Japanese Small Company Portfolio Class I	6.87%	MSCI Japan Small Cap Index (net div.)	6.02%	0.86%	Feb-86
DFA UK Small Company Portfolio Class I	9.20%	MSCI United Kingdom Small Cap Index (net div.)	9.07%	0.14%	Apr-86
DFA UK Small Company Portfolio Class I	9.20%	MSCI United Kingdom Small Cap Index (net div.)	9.07%	0.14%	Apr-86
DFA US Small Cap Subtrust	10.95%	Russell 2000 Index	8.94%	2.01%	Jun-86
DFA Short-Term Government Portfolio	4.65%	ICE BofAML 1-5 Year US Treasury & Agency Index	4.76%	-0.11%	Jul-87
DFA Continental Small Company Portfolio Class I	9.10%	MSCI Europe ex UK Small Cap Index (net div.)	8.51%	0.59%	May-88
DFA Intermediate Government Fixed Income Portfolio Class I	5.93%	Bloomberg Barclays U.S. Government Bond Index	5.49%	0.44%	Nov-90
DFA Five-Year Global Fixed Income Portfolio Class I	5.13%	FTSE World Government Bond Index 1-5 Years (hedged to USD)	4.51%	0.62%	Dec-90
DFA Large Cap International Portfolio Class I	5.49%	MSCI World ex USA Index (net div.)	5.50%	-0.01%	Aug-91
DFA US Small Cap Value Subtrust	12.92%	Russell 2000 Value Index	10.41%	2.51%	Mar-92
DFA US Large Cap Value Subtrust	10.63%	Russell 1000 Value Index	9.97%	0.66%	Apr-92
DFA US Small Cap Portfolio Class I	10.45%	Russell 2000 Index	9.38%	1.07%	Apr-92
DFA Asia Pacific Small Company Portfolio Class I	10.95%	MSCI Pacific ex Japan Small Cap Index (net div.)	8.77%	2.18%	Feb-93
DFA Real Estate Securities Portfolio Class I	9.93%	Dow Jones U.S. Select REIT Index	10.18%	-0.25%	Feb-93
DFA Emerging Markets Value Fund Inc.	11.45%	MSCI Emerging Markets Index (net div.)	8.99%	2.46%	Mar-93
DFA US Large Cap Value Portfolio Class I	10.00%	Russell 1000 Value Index	9.58%	0.43%	Mar-93
DFA US Large Cap Value Series	10.19%	Russell 1000 Value Index	9.58%	0.61%	Mar-93
DFA US Small Cap Value Portfolio Class I	11.29%	Russell 2000 Value Index	9.93%	1.37%	Apr-93
LWAS/DFA International High Book to Market Portfolio	7.51%	MSCI World ex USA Index (net div.)	6.00%	1.51%	Jul-93
DFA International Value Portfolio Class I	6.04%	MSCI World ex USA Index (net div.)	4.94%	1.09%	Mar-94
DFA International Value Series	6.26%	MSCI World ex USA Index (net div.)	4.94%	1.31%	Mar-94
DFA Emerging Markets Portfolio Class I	9.16%	MSCI Emerging Markets Index (net div.)	8.99%	0.17%	May-94
DFA Emerging Markets Series	9.58%	MSCI Emerging Markets Index (net div.)	8.99%	0.59%	May-94

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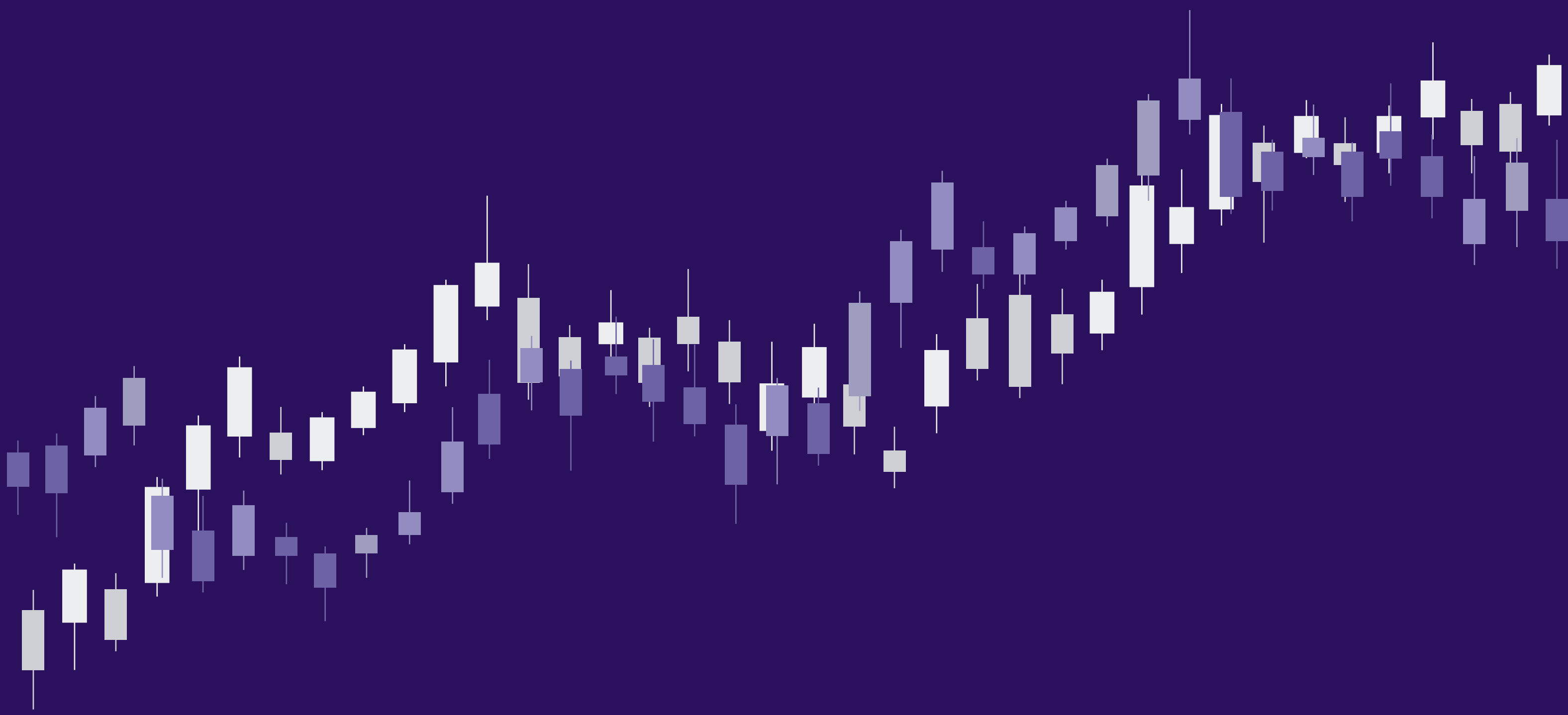
Data Series	Performance since Common Inception on Fund and Index	Benchmark	Benchmark Return	Over / Under performance relative to index	Inception Date
DFA International Value Portfolio II	6.93%	MSCI World ex USA Index (net div.)	5.47%	1.46%	Sep-94
DFA US Large Cap Value Portfolio II	10.26%	Russell 1000 Value Index	9.60%	0.67%	Sep-94
DFA International Small Cap Value Portfolio Class I	9.58%	MSCI World ex USA Small Cap Index (net div.)	7.80%	1.78%	Jan-95
DFA VA Global Bond Portfolio	4.77%	FTSE World Government Bond Index 1-5 Years (hedged to USD)	4.15%	0.61%	Feb-95
DFA VA US Large Value Portfolio	9.45%	Russell 1000 Value Index	9.86%	-0.41%	Feb-95
DFA International Value Portfolio III	6.60%	MSCI World ex USA Index (net div.)	5.35%	1.25%	Mar-95
DFA US Large Cap Value Portfolio III	10.49%	Russell 1000 Value Index	9.72%	0.77%	Mar-95
DFA VA US Targeted Value Portfolio	10.68%	Russell 2000 Value Index	9.83%	0.84%	Nov-95
DFA VA International Small Portfolio	8.83%	MSCI World ex USA Small Cap Index (net div.)	7.80%	1.03%	Nov-95
DFA VA International Value Portfolio	6.24%	MSCI World ex USA Index (net div.)	5.14%	1.10%	Nov-95
DFA VA Short-Term Fixed Portfolio	2.73%	ICE BofAML 1-Year US Treasury Note Index	2.84%	-0.11%	Nov-95
DFA Two-Year Global Fixed Income Portfolio Class I	2.02%	FTSE World Government Bond Index 1-2 Years (hedged to USD)	2.13%	-0.11%	Mar-96
DFA Two-Year Government Portfolio	2.86%	ICE BofAML 1-3 Year US Treasury & Agency Index	3.33%	-0.47%	Jul-96
DFA Two-Year Fixed Income Portfolio	2.89%	ICE BofAML 1-3 Year US Corporate & Government Index	3.56%	-0.68%	Jul-96
LWAS/DFA US High Book to Market Portfolio	10.11%	Russell 1000 Value Index	9.15%	0.96%	Jul-96
DFA Enhanced US Large Company Portfolio Class I	8.97%	S&P 500 Index	8.98%	-0.01%	Aug-96
DFA United Kingdom Small Company Series	9.72%	MSCI United Kingdom Small Cap Index (net div.)	9.07%	0.65%	Sep-96
DFA Japanese Small Company Series	7.40%	MSCI Japan Small Cap Index (net div.)	6.02%	1.38%	Sep-96
DFA Continental Small Company Series	9.59%	MSCI Europe ex UK Small Cap Index (net div.)	8.51%	1.08%	Sep-96
DFA Asia Pacific Small Company Series	11.45%	MSCI Pacific ex Japan Small Cap Index (net div.)	8.77%	2.68%	Sep-96
DFA International Small Company Portfolio Class I	8.82%	MSCI World ex USA Small Cap Index (net div.)	7.80%	1.02%	Oct-96
DFA Emerging Markets Small Cap Series	12.15%	MSCI Emerging Markets Index (net div.)	8.99%	3.16%	Jan-97
DFA International Value Portfolio IV	6.15%	MSCI World ex USA Index (net div.)	4.54%	1.61%	Sep-97
DFA Emerging Markets Portfolio II	9.50%	MSCI Emerging Markets Index (net div.)	8.99%	0.51%	Sep-97
DFA Emerging Markets Small Cap Portfolio Class I	11.62%	MSCI Emerging Markets Index (net div.)	8.99%	2.63%	Apr-98
DFA Emerging Markets Value Portfolio Class I	10.99%	MSCI Emerging Markets Index (net div.)	8.99%	2.00%	May-98
DFA Tax-Managed US Targeted Value Portfolio	9.60%	Russell 2000 Value Index	8.89%	0.71%	Jan-99
DFA Tax-Managed US Small Cap Portfolio	9.08%	Russell 2000 Index	8.18%	0.91%	Jan-99
DFA Tax-Managed US Marketwide Value Series	7.74%	Russell 3000 Value Index	6.97%	0.77%	Jan-99
DFA Tax-Managed US Marketwide Value Portfolio II	7.66%	Russell 3000 Value Index	6.97%	0.69%	Jan-99
DFA Tax-Managed US Marketwide Value Portfolio	7.54%	Russell 3000 Value Index	6.97%	0.57%	Jan-99
Dimensional Australian Value Trust (net of fees)	9.68%	S&P/ASX 300 Index (Total Return)	8.46%	1.22%	Jul-99

Source: Dimensional Funds Advisers, performance of DFA Trusts is after management fees. Range is inception through March 2019.



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