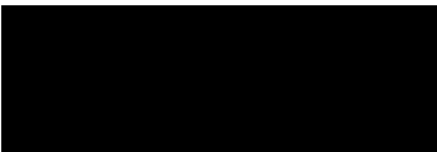




13 March 2017



Dear [REDACTED]

REQUEST UNDER THE OFFICIAL INFORMATION ACT 1982

Thank you for your request dated **23 February 2017** made pursuant to the Official Information Act 1982 ("OIA").

Your Request

You have requested the following information:

- official information on the Sharpe Ratios of the New Zealand Superannuation Fund and its Reference Portfolio.

You said your objective was to find out is whether the Sharpe Ratio of the Fund is better than its Reference Portfolio. You stated that you prefer this information to go back to the inception of the Fund, including the Sharpe Ratios of the Fund's portfolio and its Reference Portfolio for each of the years it has been in operation.

You also said: "To give you an idea of a benchmark, the long term Sharpe Ratio for the US Market is 0.40625 (based on a long term return of 10% for the market, a 16% Standard Deviation and a 3.5% rate of risk less return). Therefore, if a fund manager has a rating any lower than that, you may be better off just buying the S&P Index. This morning, Michael Reddell calculated your Sharpe Ratio to be just over 0.4 per cent. This calculation did not include the fact that some of your portfolio such as KiwiBank is highly illiquid."

Our response

As discussed in your telephone conversation with our Head of Communications on 7 March, annual figures for the Sharpe Ratio are not informative as these would need to be calculated using monthly returns in a given year which might not fairly reflect revaluations of illiquid assets. In addition, single year Sharpe Ratios can be highly volatile and contain more noise than information. Instead, as agreed with you, we provide figures since the Fund's inception (Dec 2003) below:

	Sharpe Ratio (ex-ante)	Sharpe Ratio (actual)
Reference Portfolio inception: Dec 2003 to Dec 2016	0.20	0.35
Actual Portfolio from inception: Dec 2003 to Dec 2016	0.26	0.44

The Fund's realised Sharpe Ratio of 0.44 since inception is better than we expected and also better than the Reference Portfolio.¹ The Reference Portfolio expectations are largely based on industry standard assumptions of expected returns of global equities and bonds and therefore do

¹ This is based on a realised volatility of 12.8% p.a. calculated using annual returns. The realised volatility would be lower at 9.5% if it is calculated using monthly returns, leading to a higher Sharpe Ratio of 0.60. We use the former in this calculation which yields a more conservative Sharpe Ratio.

not materially differ from many other institutional funds (see, for example, a survey of industry participants "Horizon Actuarial Services' Survey of Capital Market Assumptions" <http://www.horizonactuarial.com/blog/2016-survey-of-capital-market-assumptions>).

Given that the Fund had operated under the Strategic Asset Allocation framework between 2003 and 2009 with more limited active investments, we also provide Sharpe Ratio figures since 2009 after the Fund adopted the Reference Portfolio and a more active investment approach.

	Sharpe Ratio (actual)
Reference Portfolio: Jan 2009 to Dec 2016	1.06
Actual Portfolio: Jan 2009 to Dec 2016	1.40

The actual Sharpe Ratios during this sub-period are significantly higher than the full period due to the higher returns and lower volatilities realised in financial markets. At the same time, the realised Sharpe Ratio for the actual portfolio is also substantially higher than the Reference Portfolio, which highlights the much higher contribution from the Fund's active investments.

We would also like to point out that the US equity market is not the correct benchmark for the NZ Super Fund. Firstly, the NZ Super Fund is invested in bonds as well as equities rather than 100% equities. Secondly, we invest in global markets with a more diversified exposure than just the US market. Lastly, the time period you have chosen does not match the period over which the Fund has been invested – there were many periods when global markets would have outperformed the US market and vice versa.

We note from your email that your request was stimulated by a blog post of 23 February 2017. For your information, there are some inaccuracies in that post. Without trying to be exhaustive, these include:

- the actual standard deviation of monthly returns is about 2.8% rather than 3.3% as stated in the blog;
- it is not practical to use monthly data to calculate the volatility of returns in the Sharpe Ratio calculation because of the illiquid, infrequently valued nature of the Fund's unlisted assets (such as timber). For this reason annual returns are preferable when calculating the volatility over time;
- publicly funded projects have very different risk and return characteristics to those of a superannuation fund. Employees of a corporate pension plan would not necessarily have their pension assets invested in their employer's projects instead of a diversified portfolio of equities and bonds, for good reason. And the use of hurdle rates of return without reference to the underlying risk of the projects ignores a key part of the investment decision. The NZ Super Fund's returns should be compared to similar institutional funds, on a risk-adjusted basis, rather than Treasury's absolute discount rate. We do this using global data and CEM benchmarking.

Active vs passive management

We noted your 1 March 2017 comments in the NZ Herald on active vs passive management. For your information, we do not pursue the kinds of active management you refer to (i.e. stock picking using "special insights") in our global equities and fixed income portfolios. The majority of the Fund assets are invested passively in line with the Reference Portfolio.

When we invest outside the passive portfolio in order to add value and improve the Sharpe Ratio of the Fund, we seek investments that align with the NZ Super Fund's endowments as an investor – being its long-term horizon, known liquidity profile, operational independence and sovereign status. We focus on investments where we have a comparative advantage relative to the average investor. We target investments that are naturally aligned to these endowments, rather than purported manager skill. Strategies that do rely on skill in stock picking represent a

negligible portion of our active risk budget. For further information, I refer you to our website which contains details in how we invest and what we invest in. You will also find our value add and costs compare well to similar funds that we are benchmarked against (CEM Benchmarking survey).

Finally, we note that active investment has added \$5.4 billion dollars to the NZ Super Fund since inception, compared to what an entirely passive Reference Portfolio would have done (net of all costs). This is the reason why the realised Sharpe Ratio of the Fund's actual portfolio is higher than the Reference Portfolio, and represents the benefit to the New Zealand taxpayers of the active risk that we have taken.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D Iverson', written in a cursive style.

David Iverson
Head of Asset Allocation