The NZ Super Fund and the partial pre-funding of universal superannuation

Prepared by the Guardians of New Zealand Superannuation at the request of the Commission for Financial Capability, July 2016

For further information: www.nzsuperfund.co.nz

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1 Introduction

The New Zealand Superannuation Fund (NZ Super Fund) invests money, on behalf of the Government, to help pay for the increased cost of universal superannuation entitlements (New Zealand Superannuation) in the future.

By doing this the NZ Super Fund adds to Crown wealth, improves the ability of future Governments to pay for superannuation, and ultimately reduces the tax burden of the cost of superannuation on future New Zealanders.

The NZ Super Fund is managed by a Crown entity, the Guardians of New Zealand Superannuation.

Since 2003, the Government has contributed $14.9 billion to the NZ Super Fund which, as at 31 May 2016, was worth $30.3 billion. The Guardians has successfully invested the Government's contributions in New Zealand and overseas, returning 9.6% per annum, after costs and before NZ tax, since the inception of the NZ Super Fund. This rate of return has exceeded both market returns over the same period, and the return on Government debt (Treasury Bills).

2 Why the NZ Super Fund exists

New Zealand Superannuation is the retirement benefit currently paid to all eligible New Zealanders aged 65 or over.

New Zealand Superannuation is currently funded on a "Pay As You Go" (PAYGO) basis. This means that the cost of New Zealand Superannuation in any one year is paid from the taxes New Zealand workers and businesses pay in that same year. The ability of the Government to continue meeting future New Zealand Superannuation costs under a PAYGO basis (absent any changes in tax rates or superannuation policy) depends on the growth of the NZ economy. This is because tax revenues grow approximately in line with economic growth (as measured by nominal GDP growth).

Over the next few decades, however, the New Zealand population will age significantly. Statistics New Zealand predicts that the population aged 65 years and over will surpass one million by the late 2020s, compared with 550,000 in 2009. The 65+ age group will also grow as a proportion of New Zealand's total population, increasing from 13% in 2009 to more than 20% by the late 2020s. By the late 2050s, one in every four New Zealanders will be 65 years or older.

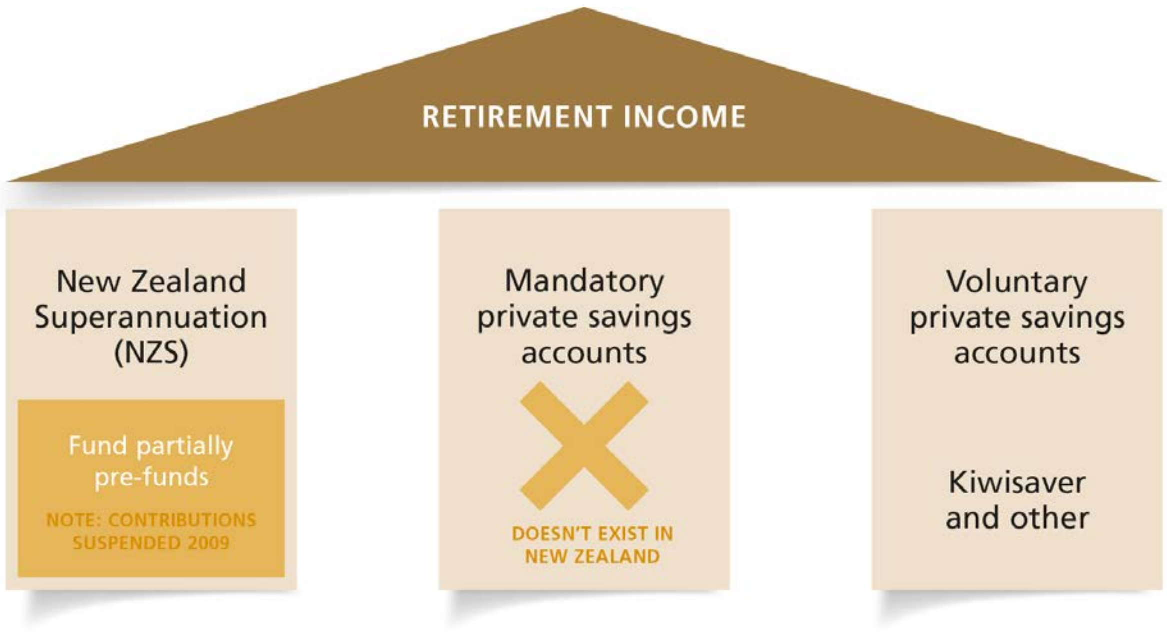
As New Zealand's population gets older, the cost to the Government of providing New Zealand Superannuation at similar levels to today will increase. According to Treasury's most recent modelling, the cost of superannuation will grow at an average of 5.3% per year over the next 35 years, while nominal GDP growth will average only 4% per year.

The NZ Super Fund was therefore established as a “Save As You Go” (SAYGO) mechanism that will help prepare for this increase and smooth the cost of New Zealand Superannuation between today’s taxpayers and future generations.

The NZ Super Fund will improve the affordability of universal superannuation as a result of accumulated savings and investment returns at a level above the growth of the New Zealand economy.

Therefore, the NZ Super Fund partially pre-funds one of three tiers of retirement income, as shown below.

Diagram 1: How the NZ Super Fund fits into the retirement income landscape

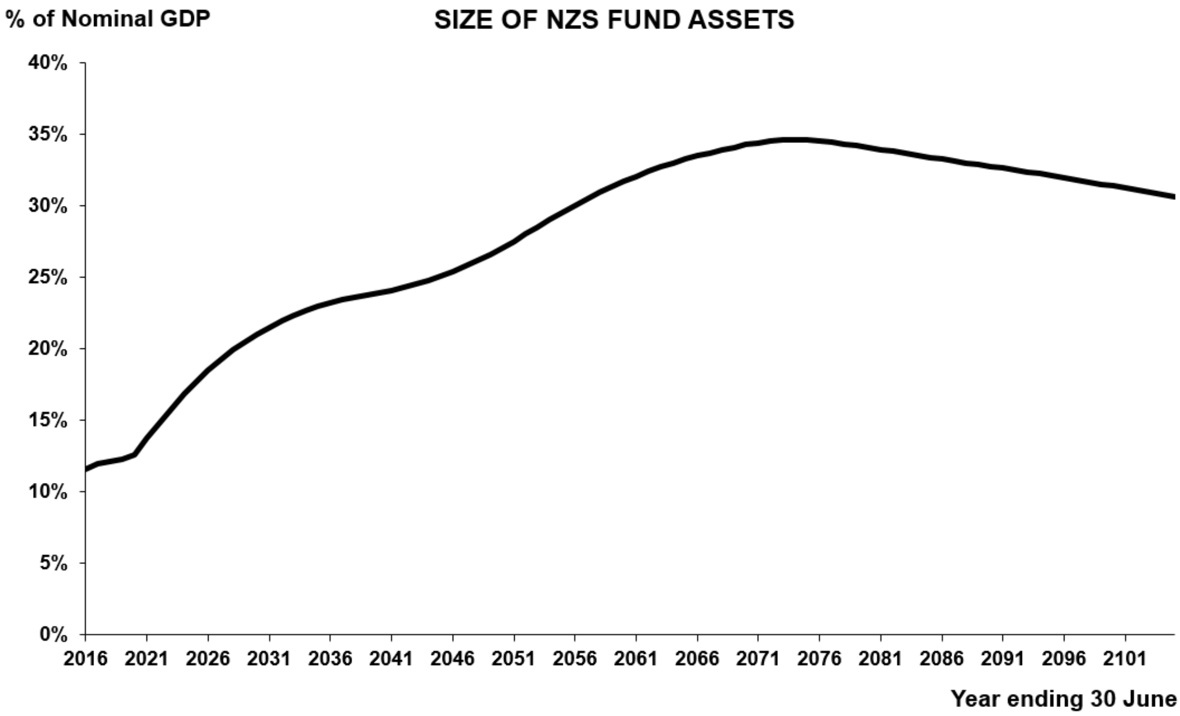


Three Tiers of Retirement Income	**Role served by**	**Purpose**	**Comment**
Tier 1 – Mandatory public offering “Pay as you Go”	New Zealand Superannuation **NZ Super Fund partially pre-funds future payments (Save as you Go)**	Universally available, basic retirement income	• Indexed to median wage • Available to eligible New Zealanders aged 65+
Tier 2 – Mandatory private savings	Compulsory savings accounts (e.g. work-based schemes)	Supplementary individual retirement income	NZ does not have such a scheme
Tier 3 – Voluntary private savings	Kiwisaver Other	Supplementary individual retirement income	Kiwisaver – incentivised by Government Other – not incentivised by Government

Based on New Zealand Treasury forecasts, the NZ Super Fund is projected to provide 4.5% of the cost of National Superannuation in 2040, moving up to 10% by 2075. The NZ Super Fund will continue to help fund National Superannuation for many decades beyond that.

This New Zealand Treasury graph shows the projected size of the NZ Super Fund over time.

Graph 1:



The NZ Super Fund also reduces risks around superannuation funding because its investment returns are a function of global economic conditions and asset markets, rather than New Zealand conditions alone, as is the case with a pure PAYGO system.

3 Fund size

The following table provides a breakdown of Fund size as at 31 May 2016.

Table 1

	Last 5 years	Last 10 years	Since inception
Contributions received	$0.00 billion	$6.82 billion	$14.88 billion
Returns (after fees and foreign tax, and before NZ tax)	$13.78 billion	$17.82 billion	$20.07 billion
NZ tax (paid) / received*	$(2.70) billion	$(4.19) billion	$(4.64) billion
Other movements**	$0.00 billion	$0.02 billion	$0.00 billion
Closing Fund balance as at 31 May 2016	$30.31 billion		

* Tax ‘received’ covers any instances of refunds for overpayment of tax

** Other movements relate to transactions other than tax paid or received e.g. tax expense, movements in reserves.

4 Funding

The New Zealand Superannuation and Retirement Income Act 2001 (the Act) sets out requirements for the Government for funding the NZ Super Fund. These requirements are outlined in sections 42, 43 and 44 of the Act.

The nub of the funding arrangements is that an annual capital contribution to the Fund is required from the Crown. The amount of the annual capital contribution is not left to the Crown’s discretion but is instead calculated according to a formula (set out in section 43). The required annual capital contribution is calculated at the rate that, if the same rate of contribution (as a percentage of forecast GDP) was to be provided over the next 40 years, would be enough, along with the accumulating Fund and its investment returns, to meet the expected cost of New Zealand Superannuation entitlements over that forty year period. Each year the required contribution amount is recalculated based on the latest forecasts and a rolling 40-year time horizon.

The Treasury has responsibility for calculating the amount of the capital contribution to the NZ Super Fund required for each financial year (section 42). The calculation of that amount and the assumptions and judgments on which it was based must be included in the Economic and Fiscal Update prepared under the Public Finance Act 1989 (section 260) for that financial year. The obligation to annually publish the required capital contribution amount enables the public to see if the funding requirements for the Fund are being met.

Section 44 of the Act contemplates the Government making annual capital contributions to the Fund that are less than the required capital contribution. Section 44 is, however, only concerned with the disclosures that must be made in such an eventuality. Section 44 does not provide for the required capital contribution to be recalculated nor relieve the Crown from the obligation to make up the shortfall (i.e. the Government is required to make up the shortfall at some point).

5 Contributions suspension

Contributions to the NZ Super Fund were suspended by the Government in July 2009, seven years ago. As at 31 May 2016, capital contributions not made totalled approximately $14.5 billion. Capital contributions are currently forecast to re-start in 2020/21.

If capital contributions had not been suspended, the NZ Super Fund would be worth an estimated $50 billion as at 31 May 2016, compared to the actual Fund size of $30 billion. This estimate assumes that additional contributions to the NZ Super Fund would have earned the same return as the actual Fund did over this period.

The table below summarises the impact of the suspension of contributions on the NZ Super Fund. The table relies on publicly available material for all of the necessary data, including capital contributions, Fund returns, and government debt instrument yields. It assumes that the same investment choices would have been made had contributions not been stopped; and that opportunities to add value would have been perfectly scalable.

Table 2

As at 31 May 2016	Estimated Fund size	Estimated foregone return over Treasury Bills	Estimated foregone return over Reference Portfolio
Non-suspension scenario (A)	$50.8 billion	$20.0 billion	$13.1 billion
Actual Fund performance (B)	Actual $30.3 billion	Actual $13.5 billion	$7.9 billion
(A – B)	**$20.4 billion difference***	**$6.5 billion difference**	**$5.2 billion difference**

* Note: $0.1b discrepancy is due to rounding.

6 Payment of NZ tax

Since inception, the NZ Super Fund has paid $4.6 billion in tax to the New Zealand Government. We include New Zealand tax paid in measurements of the NZ Super Fund's performance because we consider it to be a return to the Crown.

Since annual capital contributions to the NZ Super Fund were suspended in July 2009, the NZ Super Fund has paid $3.3 billion in NZ tax. Given the suspension, these payments represent a net outflow, from funds ring-fenced to help pre-fund universal New Zealand Superannuation, to other Government purposes.

7 Investment Horizon, Endowments and Beliefs

7.1 Investment Horizon

The Government will begin to withdraw money from the NZ Super Fund to help pay for New Zealand Superannuation around 2032/33. Even then, the NZ Super Fund is not projected to peak in size until the 2080s.

This long timeframe is reflected in the NZ Super Fund's Mission Statement: "Maximise the NZ Super Fund's returns over the long term, without undue risk, so as to reduce future New Zealanders' tax burden."

7.2 Endowments

NZSF Endowments:

- Long Fund horizon
- Certain liquidity profile
- Operational independence
- Sovereign status

The Guardians take advantage of the NZ Super Fund's long-term horizon, certain cash flow (thanks to the NZ Super Fund's public funding formula) and limited need for liquidity, to invest in growth assets such as listed company equities in New Zealand and globally. In the short term, growth assets can be volatile, moving up and down in price. Because of its long investing horizon, however, the NZ Super Fund has the ability to ride out and potentially benefit from these short term movements.

Having a long investing horizon also allows the NZ Super Fund to invest in illiquid assets – for example, forests, infrastructure and private (unlisted) companies. These assets can be difficult to sell quickly. This means that they are not suitable for all investors, but are expected to deliver a premium over time.

The Guardians, as the manager of the NZ Super Fund, has operational independence from the Government. Under its enabling legislation, NZ Super Fund investments are made on a purely commercial basis. The Government may only direct the Guardians about its expectations of the NZ Super Fund's overall risk and return. This investment independence gives the Guardians confidence to enter into investment arrangements that best suit the NZ Super Fund's long-term purpose.

The NZ Super Fund's sovereign status is also beneficial, enabling the NZ Super Fund to pay lower tax in some foreign jurisdictions than private investors. Sovereign status is also often regarded favourably by business partners and can position the NZ Super Fund well as a potential co-investor.

In combination, these "endowments", which stem from the way the NZ Super Fund has been set up, optimise the Guardians' ability to generate superior investment returns from the NZ Super Fund.

Due to the long-term growth-oriented risk-return profile of the NZ Super Fund, the Guardians are confident of adding many billions of dollars (in present day terms) to Government (and national) savings over coming decades. These are investment returns over and above the alternative Government saving option of reducing Government debt.

This expectation is based on economic logic, long-term historical investment performances, and our modelling of likely future outcomes. This research is supported by global expert opinion and the global investment practice of the vast majority of long-term endowment, sovereign wealth and pension funds.

7.3 Investment Beliefs

The Guardians have developed a series of investment beliefs based on the endowments outlined above. All NZ Super Fund investment decisions are driven by these beliefs, which are available on our website at: https://www.nzsuperfund.co.nz/how-we-invest/beliefs.

8 Investing vs. reducing debt

A question that is often asked is whether it is sensible for the Government to invest in growth assets such as equities, via the NZ Super Fund, instead of reducing debt. There is strong evidence that over time the returns on the NZ Super Fund will be higher than the interest saved on Government debt.

For example, **Table 3** below shows the performance of the US equities market against US Treasury Bills (T-Bills) from 1926 until June 2016.[1] Over this period equities in the US (and globally) went through numerous periods of short-term annual fluctuations exceeding 30% or more, including during the recent Global Financial Crisis.

Despite this, on average US equities outperformed T-Bills by 6.4% per annum on a compounding return basis. We also see a similar average performance post-WWII and in the last twenty years.

Table 4: Historical Period	US equity returns	Excess US equity return over T-Bills
1926-2016 (whole sample)	**9.9%**	**6.4%**
1946-2016 (post-WW2)	**10.7%**	**6.5%**
1996-2016 (last twenty years)	**7.9%**	**5.6%**

Note: US equity returns are total returns on the S&P500 index, i.e. returns include dividends. Returns are expressed on an annualised geometric basis. Data source: Global Financial Data.

The probability of equity returns outperforming public debt yields over any randomly chosen medium-term period is also relevant. The withdrawals to be made from the NZ Super Fund are not scheduled until 2032/33, so we use a 20 and 30 year horizon in our assessments.

Using the same long-term data, and undertaking a simple consecutive 20-year performance test, Table 5 highlights that a growth-orientated fund like the NZ Super Fund would have produced financial returns in excess of Treasury Bills 100% of the time when measured over 20 years. That is, in any randomly chosen 20-year period since 1926, returns on US equities were ahead of returns on US Treasury Bills when measured over the 20 year period.

Moreover, equity returns exceed Treasury bills by at least 2.7% around 85% of the time. The underlying economic rationale for this 'outperformance', and the historical performance, gives us confidence that a well-managed, diversified, growth portfolio is our best means of maximising returns without undue risk.

Table 4: Comparative performance of US equity returns – rolling 20-year periods since 1926		
Equity returns compared to:	T-Bills	2.7% per annum or more
Portion of time in excess:	100%	85.3%

[1] We use US data to look at historical performances because it is consistently available over long periods and, at least post-WW2, represents the dominant fraction of world equity markets. Over the period for which the world MSCI benchmark index is available, returns have been comparable to US markets.

9 Measuring Fund performance

9.1 Treasury Bill return benchmark

It is the Guardians' expectation, given our mandate and hence portfolio construction, that the NZ Super Fund will return at least the Treasury Bill rate + 2.7% p.a. over any 20-year moving average period.

It is important to understand that the Treasury Bill rate + 2.7% is not a target to be hit precisely - rather, it is a long-term performance expectation that we aim to beat by as much as possible. Working to an expectation rather than a target avoids any short-term incentive to simply add risk to the NZ Super Fund if expected returns are low, and vice versa.

For more information see: https://www.nzsuperfund.co.nz/performance-investment/returns-vs-t-bills.

9.2 Reference Portfolio benchmark

We also compare the performance of the NZ Super Fund to a passive, low-cost Reference Portfolio. The Reference Portfolio is a way for the Guardians to:

- estimate the NZ Super Fund's expected returns;
- benchmark active (value-add) investment returns and costs; and
- be clear on the 'hurdles' for active investments.

The Reference Portfolio is a shadow or notional portfolio of passive, low-cost, listed investments in keeping with the NZ Super Fund's long-term investment horizon and risk profile. The Reference Portfolio is capable of meeting the NZ Super Fund's objectives over time. It has an 80:20 split between growth and fixed income investments and its foreign currency exposures are 100% hedged to the New Zealand dollar.

Most of the NZ Super Fund is invested in line with the Reference Portfolio. The Guardians only invest outside the Reference Portfolio where we have a strong level of confidence that doing so will deliver superior long-term risk-adjusted returns, and/or offer diversification benefits. These "active" investment activities bring a higher expected return and/or offer diversification benefits for the NZ Super Fund, albeit with more complexity and cost.

Further information about our Reference Portfolio approach is available at:
https://www.nzsuperfund.co.nz/how-we-invest/reference-portfolio

10 Performance results

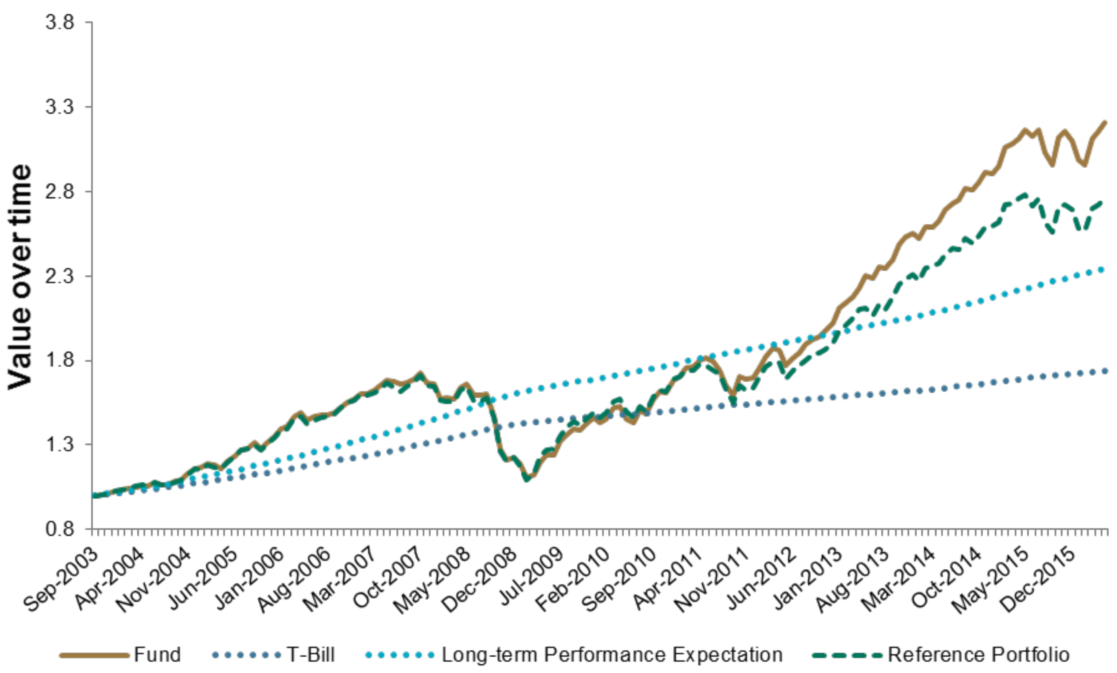
As at 31 May 2016, the NZ Super Fund was worth $30.3 billion. Since inception the Guardians has, on a before NZ tax/after costs basis:

- added $13.5 billion to the NZ Super Fund, compared to the Treasury Bill return
- added an estimated $4.4 billion in value to the NZ Super Fund, compared to a market "Reference Portfolio" return.

Performance as at 31 May 2016	Last 5 years p.a.	Last 10 years p.a.	Since inception p.a.
Actual Returns	12.08%	8.30%	9.57%
Reference Portfolio Return	9.32%	6.84%	8.29%
Treasury Bill return	2.69%	3.99%	4.43%
Long-term performance expectation[2]	5.22%	6.50%	6.90%

This graph shows what has happened to the first dollar invested in the NZ Super Fund over time.

Graph 2



[2] Long-term performance expectation: exceed the New Zealand Treasury Bill return by at least 2.7% p.a. (prior to 1 July 2015, 2.5% p.a.) over the long-term (rolling 20 year periods).

Since inception the Guardians have added $13.5 billion to the Fund, compared to the Treasury Bill return.

Over the same period, as illustrated by the gap between the brown and green lines, the Guardians' active investment strategies have added an estimated $4.4 billion in value to the Fund, compared to the passive Reference Portfolio benchmark.

11 Further Benefits

As well as reducing uncertainty over the future affordability of New Zealand Superannuation and generating a long-term financial benefit for the Crown, the NZ Super Fund brings a range of other benefits.

As one of New Zealand's few large and genuinely long-term investment funds, it is able to:

- invest in long-dated, productive assets such as timberland;
- add liquidity to local debt and equity markets;
- use its influence to promote best practice corporate governance;
- offer significant economies of scale in funds management;
- access international investment expertise through collaboration and co-investment; and
- bring financial diversification to the Government's balance sheet. New Zealand tax revenue is wholly exposed to macroeconomic conditions in New Zealand. By investing globally, the NZ Super Fund makes future Government revenue and the ability to pay for New Zealand Superannuation less dependent on the New Zealand economy.

With around $4 billion of the NZ Super Fund invested in New Zealand, including more than $1 billion in listed New Zealand equities, the NZ Super Fund makes a significant contribution to the health of New Zealand's capital markets.

A February 2013 Treasury working paper found that over the period 2002-2011, the NZ Super Fund had the effect of raising the estimate of household saving in New Zealand by an annual average of 2.1 percentage points of household disposable income.

For further information:

- www.nzsuperfund.co.nz