

The Impact of a Contribution Holiday on the New Zealand Superannuation (NZS) Fund: Updated for Pre-election Economic & Fiscal Update (PREFU) 2011

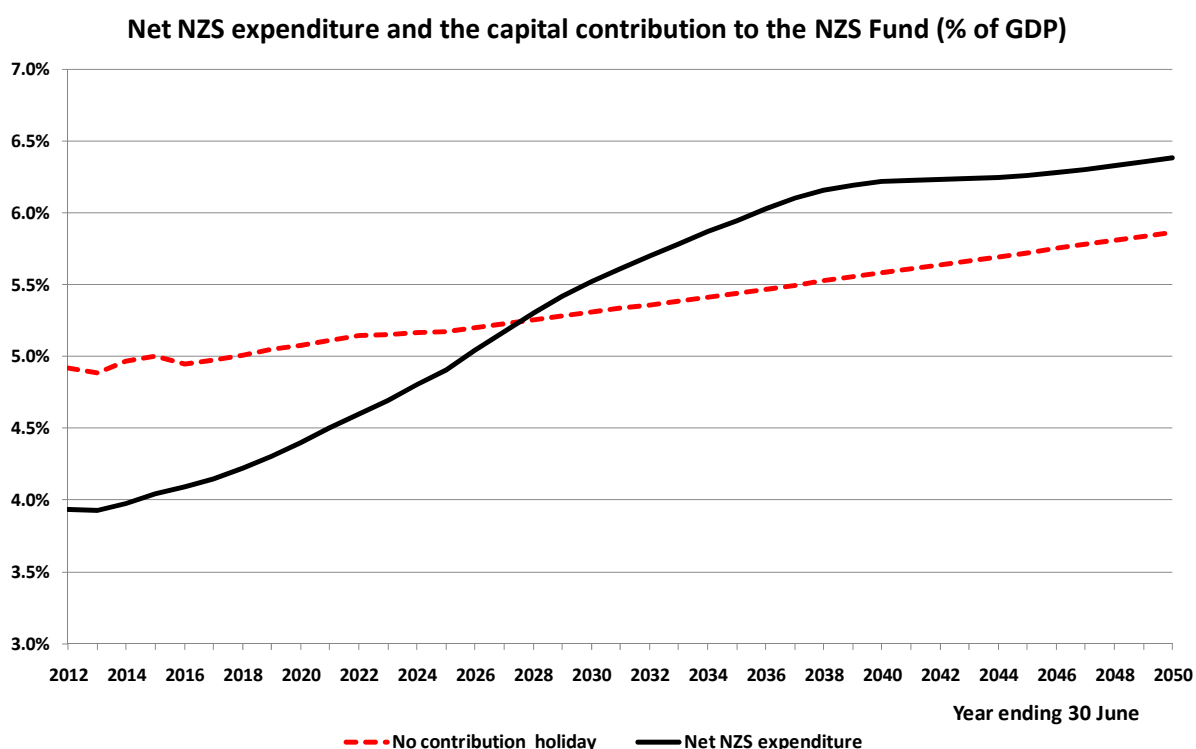
This note provides background on the impact of the contribution holiday on the capital contributions and the size of the NZS Fund, and how this holiday has changed since Budget 2009.

In Budget 2009 the Government decided to suspend contributions to the New Zealand Superannuation (NZS) Fund for the period until the operating balance returned to a sufficient surplus. This was defined as an operating balance sufficient in terms of cash flows to meet contributions and other capital spending, in combination with the debt ratio not increasing. At Budget 2009 that period was determined to be eleven years, including a one-off contribution of \$250 million in the year ending June 2010 (or 2009/10), with contributions projected to resume in 2020/21.

In the 2011 Pre-election Economic and Fiscal Update (PREFU) the projections of the economic and fiscal position have improved. The operating balance is now projected to return to a sufficient surplus three years earlier than projected at Budget 2009. The period of the contribution holiday has subsequently been revised to eight years, with contributions projected to resume in 2017/18 (this period includes the historical fiscal year, 2009/10, where a contribution of \$250 million was made).

Background on the NZS Fund

The NZS Fund seeks to smooth the amount spent on net (of tax) NZS (as a % of GDP) over a 40-year rolling horizon. This amount is made up of both actual NZS expenditure and the capital contribution to the NZS Fund. The key NZS Fund formula smoothes this amount, as a % of GDP, over the funding horizon. This is most clearly shown in a graph:



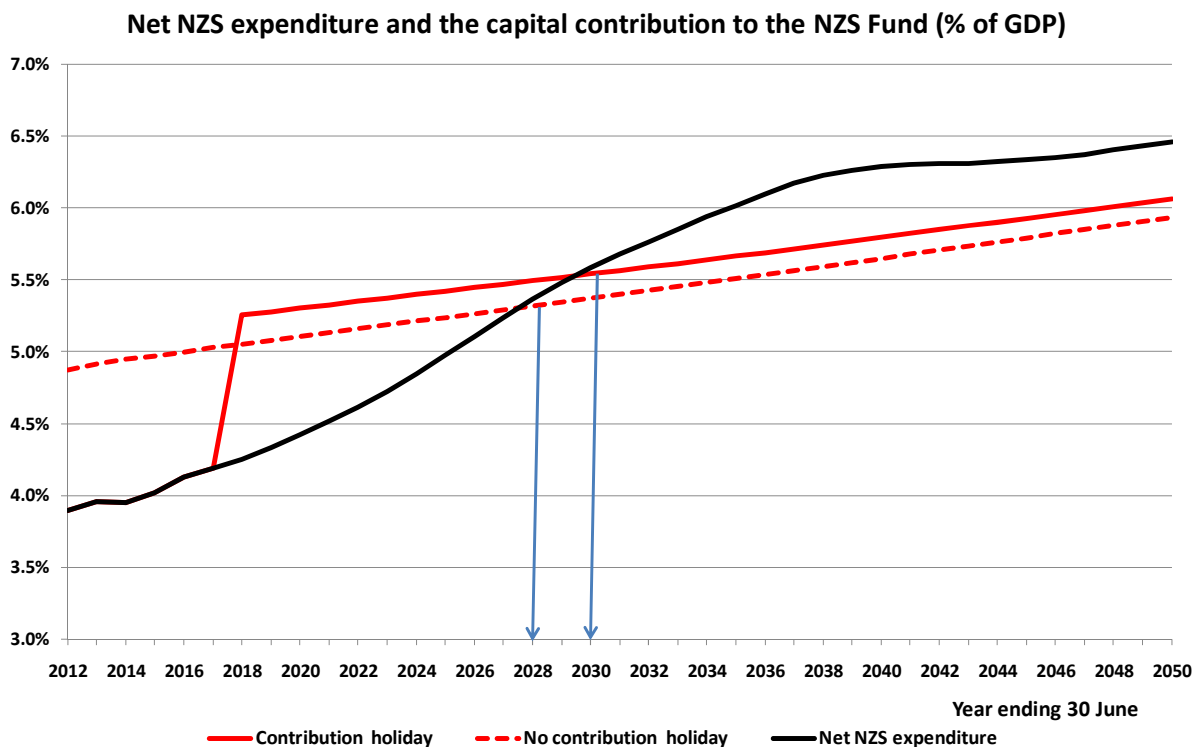
It is important to note that there is no ‘target’ for the size of the Fund. The formula aims to smooth the amount spent on NZS (as a % of GDP).

- The red dashed line is equal to the smoothed amount: net NZS expenditure plus the capital contribution (or withdrawal), as a % of GDP.
- The black solid line is aggregate net (of tax) NZS expenditure, as a % of GDP.
- The difference between the two lines is the capital contribution or withdrawal (as a % of GDP).

When the red line is above the black line, contributions to the Fund are positive, as net NZS as a % of GDP is at lower levels than will be the case in the future, when recipient numbers are much larger. Net NZS expenditure increases as a % of GDP over time, due to the ageing population (from 3.9% of GDP in 2011/12 to 6.5% of GDP in 2049/50).

Eventually the lines cross, as net NZS expenditure exceeds this ‘smoothed’ amount, and the contributions become withdrawals from the Fund.

Contribution Holiday



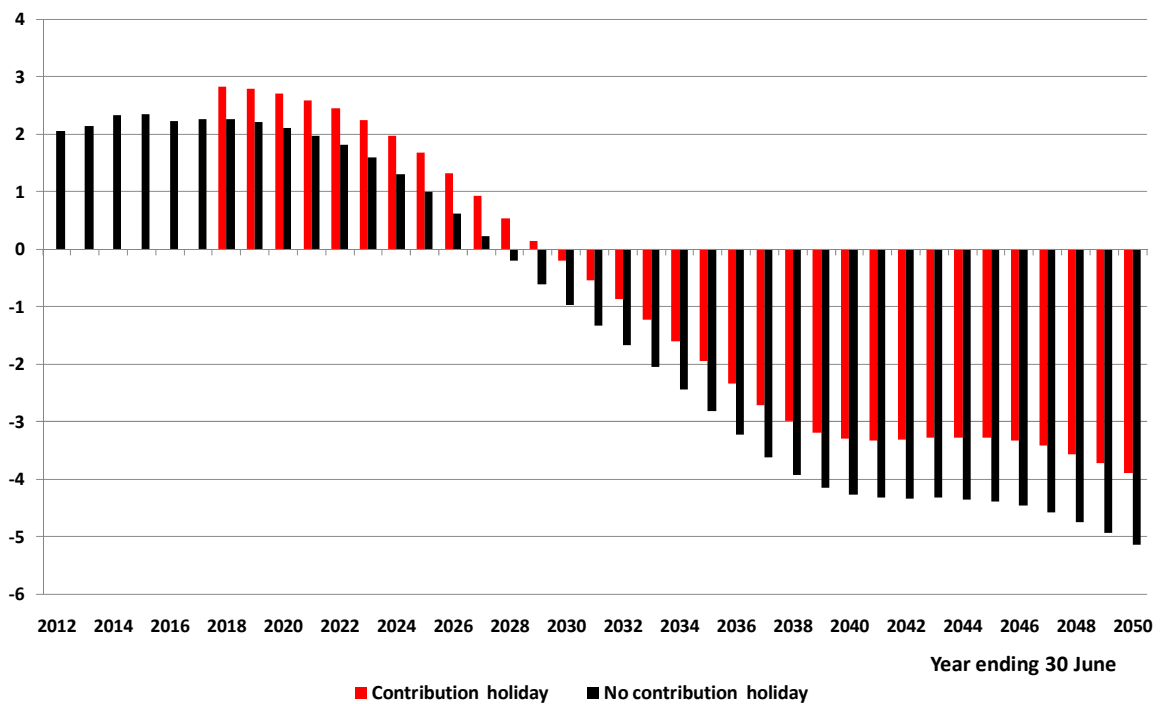
The solid black and dashed red lines are as per the previous chart.

The solid red line shows the ‘smoothed’ amount - net NZS plus the capital contribution, **with an eight year contribution holiday, including a one-off contribution of \$250m in 2009/10.**

- The gap between the solid red line and the solid black line is the capital contribution in this scenario.
- When the capital contribution is set to zero for the six years 2011/12 to 2016/17 inclusive the solid red line is simply equal to net NZS expenditure (the solid black line). [Note: The historical contribution holiday years of 2009/10 and 2010/11 are not shown on the graph].

- After the contribution holiday the contributions are required to be higher than in the no contribution holiday scenario (the solid red line is higher than the dashed red line).
 - This is because the balance of the Fund is now smaller than it would have been.
- Withdrawals from the Fund start two years later with a contribution holiday (2029/30 instead of 2027/28), as shown by the arrows in the graph above.
- The amount withdrawn is less in each year than would have been the case without a contribution holiday, as shown by the solid red line being above the dashed red line in the graph above.
 - This is partly because withdrawals begin later (effectively lagging the withdrawals).
 - But the smaller Fund in the contribution holiday scenario means that withdrawals are also smaller than they would have otherwise been.

NZS Fund contributions, in \$ billions, with and without a contribution holiday

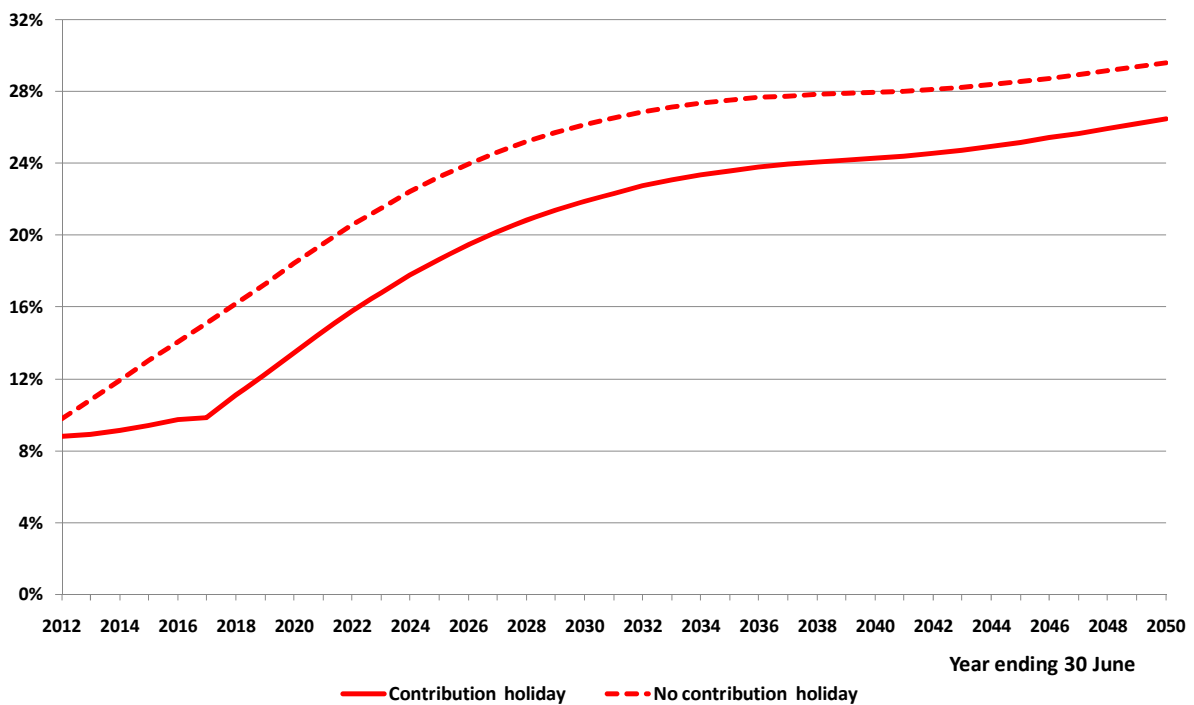


- The average contribution for the three years before the holiday was \$2.1 billion.
- The average contribution for the three years after the holiday is \$2.8 billion.
- In the year ending June 2050 (2049/50), without a contribution holiday, the withdrawal from the Fund would have paid for 8% of nominal net NZS expenditure in that year.
- In 2049/50, with an eight-year contribution holiday, the withdrawal from the Fund would pay for 6% of nominal net NZS expenditure in that year.

CONTRIBUTIONS	2011/12 to 2016/17	2017/18 to 2028/29
Contribution holiday	\$0 billion	\$22.2 billion
No contribution holiday	\$13.4 billion	\$14.3 billion
Difference	- \$13.4 billion	+ \$7.9 billion

- The amount of forgone contributions is \$13.4 billion (in nominal terms) over the six years remaining, under current projections, for the contribution holiday.
- Until withdrawals start in 2029/30, contributions are \$7.9 billion higher than they would have been without a holiday (in nominal terms).
- These calculations exclude any returns earned on these contributions, and are not adjusted to reflect the time value of money. They are simply nominal calculations.
- These values can be found in [Pre-election Economic and Fiscal Update \(PREFU\) 2011 New Zealand Superannuation \(NZS\) Fund Track - With and Without Holiday](#).

NZS Fund closing balance with and without a contribution holiday (% of GDP)



The closing balance of the NZS Fund does not fully recover to the level it would have reached without a contribution holiday.

- The closing balance dips to 65% of what it would have been in 2016/17 (the final year of the contribution holiday), and then recovers to around 90% by the middle of the century.
- At the end of the medium-term projection period (2025/26), shown in the PREFU publication, the closing balance is 81% of what it would have been without the contribution holiday.
- In nominal terms:
 - In 2025/26 the NZS Fund balance is \$17.6 billion smaller under the contribution holiday.
 - By 2050, the NZS Fund balance is \$30.5 billion smaller than it would have been without the contribution holiday.
- These values can be found in [Pre-election Economic and Fiscal Update \(PREFU\) 2011 New Zealand Superannuation \(NZS\) Fund Track - With and Without Holiday](#).

These projections of the NZS Fund are based on the 2011 Pre-election Economic and Fiscal Update (PREFU) forecasts and assumptions. These forecasts and assumptions will be updated again at the 2012 Budget Economic and Fiscal Update (BEFU), and the projections will consequently change.

Technical Annex:

There is one formula at the heart of the NZS Fund model, and all other calculations in the model derive from this. The formula is a smoothing algorithm that calculates the annual capital contribution, in any given year *j*, as a percentage of nominal GDP. It is:

$$\text{CC \& NZS (\% GDP) year } j = \frac{\text{NPV}_{r,\text{FH}}\{\text{net NZS expenditure}\} - (\text{NZSF balance in year } j-1) \div (1+v)}{\text{NPV}_{r,\text{FH}}\{\text{nominal GDP}\}}$$

Where:

CC & NZS (% GDP) year *j* = capital contribution plus net NZS expenditure as a % of GDP in year *j*;

NPV = net present value;

FH = funding horizon (normally set to 40 years);

r = the after-tax nominal annual rate of return (the discount rate); and

v = after-tax in-year compound return using fortnightly payments

This key formula sets an annual amount (made up of the annual required capital contribution plus the annual net NZS expenditure) for a year at a level such that, if that same % of nominal GDP was contributed to the Fund each year over the funding horizon, the Fund balance (plus accumulated returns) would be expected to be sufficient to cover net NZS expenditure over the funding horizon.

- When this smoothed amount, CC & NZS (% GDP), is greater than net NZS expenditure-to-GDP, the capital contributions are positive.
- When this smoothed amount, CC & NZS (% GDP), becomes less than net NZS expenditure (% GDP), as net NZS expenditure (%GDP) grows through time due to an ageing population, the capital contributions become negative (withdrawals from the NZS Fund).

Contribution holiday:

- The eight-year contribution holiday from the NZS Fund only changes one component in the formula above, the closing Fund balance in the previous year.
- As the Fund balance is lower with a contribution holiday, this means that the smoothed amount, CC & NZS (% GDP), is higher.
 - As the net NZS expenditure (% GDP) component of this is unchanged, this implies bigger positive capital contributions and conversely, smaller (negative) withdrawals from the Fund.
 - As the smoothed amount is higher, and net NZS expenditure (% GDP) is unchanged, it takes longer for net NZS expenditure (%GDP) to overtake the smoothed amount. This means that withdrawals from the Fund start later with a contribution holiday than without.