



KiwiSaver and the wealth of New Zealanders

NZIER perspective on the joint agency evaluation report

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Authorship

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Executive summary

Since its inception in 2007, KiwiSaver has become by far the most widely-held voluntary private savings vehicle in New Zealand. There are now over 2.5 million individual members in the scheme, and three-quarters of the population aged 18 to 64 are members.

Prior to the introduction of KiwiSaver, coverage of New Zealanders in occupational savings schemes was only around 15% of the workforce and on a declining trend. The introduction of KiwiSaver was motivated by concern that many New Zealanders were not preparing well for their retirement, owing to both an inadequate level of savings, and potentially excessive concentration of wealth in residential property. This is reflected in the legislative goals of the KiwiSaver Act, which are:

1. to encourage a long-term savings habit and asset accumulation by individuals who are not in a position to enjoy standards of living in retirement similar to those in pre-retirement
2. to increase individuals' well-being and financial independence, particularly in retirement, and to provide retirement benefits.

KiwiSaver take-up was encouraged by Government support of the scheme in the form of direct payments to member accounts and subsidies for eligible first home buyers. To date, the direct payments have been over \$5.8 billion, comprising annual "tax credits" and a one-off kick-start payment of \$1,000.

Given the large level of fiscal support for the scheme and the important policy purpose, annual reviews by government officials have been undertaken. In February 2015, a major summary evaluation report was published. While the report found KiwiSaver has enjoyed high take-up and was well-managed, it also found it was only marginally, at best, increasing net asset accumulation for its members.¹

This material was drawn upon by The Treasury to develop a Regulatory Impact Statement (RIS) on KiwiSaver, and the kick-start payment in particular.² The RIS concluded that "KiwiSaver is a very costly voluntary savings scheme which has not substantially increased savings despite encouraging enrolment of a large number of individuals." Given this conclusion, in the 2015 Budget the government reduced some fiscal support for KiwiSaver by cancelling the \$1,000 kick-start payment.

In this paper we review the evidence base used to support this policy change and suggest conditions under which, in contrast, KiwiSaver will likely lift net wealth for its members, particularly members on middle-level or lower lifetime incomes.

Our main concern with the evidence base is that it is too narrow, and applied over too short a time frame, to assess whether KiwiSaver has met its policy objectives. In particular, the main empirical evidence used to support the conclusion that KiwiSaver has not lifted net asset accumulation was based on a survey of self-reported household data of assets and liabilities that only ran to 2010, and hence empirical analysis using the survey may have been significantly tainted by the impact of the

¹ Inland Revenue National Research and Evaluation Unit (2015) [KiwiSaver evaluation: Final summary report: A joint agency evaluation 2007 - 2014](#)

² See: <http://www.treasury.govt.nz/publications/informationreleases/ris/pdfs/ris-tsy-rks-may15.pdf>

Global Financial Crisis (the GFC), which commenced in around 2008. A longer sample is required to more cleanly dis-entangle the impact of financial market volatility from savings behaviour. In addition, the evidence base could also have included an assessment of the extent to which KiwiSaver has, or will, help diversify wealth for its members.

We acknowledge the issue of savings and the role of government policy is a complex area. There has been a huge amount of analysis undertaken to answer the questions of what suite of policies and arrangements are best. While some themes are consistently raised in the literature, no clear consensus has emerged. Rather than “boil the ocean” and try and come-up with a definitive once-and-for-all conclusion about the optimal policy-settings for KiwiSaver, we set out some uncontested facts about savings and savings behaviour, and what set of beliefs would need to be true to support the conclusion that KiwiSaver will likely lift net wealth for, if not all, at least some of its members.

In terms of the facts, we show that the high take-up rates achieved include the young and those on lower incomes. The New Zealand and offshore evidence base suggests these groups typically do not participate in formal savings schemes. We also show that at present there is a large concentration risk in financing retirement given the composition of wealth in New Zealand (which for a significant group of people is highly concentrated in real estate), which KiwiSaver will significantly ameliorate over time given KiwiSaver portfolios typically include well-diversified global exposures to equities and fixed interest.

Another key fact is that risky assets command a premium. As such, KiwiSaver portfolios will likely earn a higher return than both the interest rate cost of Crown contributions, and the growth in New Zealand labour incomes and associated New Zealand tax base. This is the case up to the end of 2014, despite the impact of the GFC.

In terms of beliefs, lessons from the behavioural economics and finance literature strongly suggest that many individuals will not adequately save for their retirement, or diversify appropriately or invest appropriately, given information gaps and various behavioural “biases”. KiwiSaver is a mechanism that explicitly overcomes some of these effects, for example, it overcomes the procrastination people display towards getting started with a savings scheme via the automatic enrolment mechanism.

We observe internationally that governments tend to intervene in savings markets. The biases and information gaps provide an evidence base for why public policy can be justified that is aimed at: (i) creating a savings habit, (ii) making it easier for individuals to save, and (iii) ensuring well-diversified financial products are available.

Given the facts and beliefs, we conclude that KiwiSaver is likely to lead to an increase in net worth for members who do not already enjoy a high level of net worth or financial capability. Middle and lower income KiwiSaver participants are the group most likely to benefit and enjoy a standard of living in retirement that is both superior to what they would be able to obtain without KiwiSaver, and closer to what they are able to achieve pre-retirement. For people outside this group, i.e. very low income people such as beneficiaries and people with high incomes and high net worth, KiwiSaver is less likely to increase net savings. KiwiSaver should also lead to more diversified portfolios in New Zealand, reducing downside concentration risks.

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1. KiwiSaver overview

KiwiSaver commenced operation on 1 July 2007, following the passage of the KiwiSaver Act 2006 in September 2006. KiwiSaver is a voluntary, contributory, long-term savings scheme.

Kiwisaver was designed to fit within the context of the New Zealand retirement system that applied at the time of its introduction. That system was based on a near-universal publicly provided pension (New Zealand Superannuation) with no means or asset testing and a voluntary private savings market with few explicit tax concessions. Unusual by OECD standards was the absence of any compulsory or publicly-subsidised employment-based or income-related savings vehicle.³

Some of the key features of KiwiSaver are:

- Everyone who becomes employed by a new employer is automatically enrolled in KiwiSaver, but they can choose to not join (“opt-out”).
- The private sector operates KiwiSaver funds, which are eligible to receive contributions.
- Unless they elect to take a contribution holiday, members must contribute to their scheme.
- Member contributions are matched by employer contributions.
- The government provides tax credits for member contributions. (When first established, the government also provided tax credit for employer contributions and made a \$1,000 kick-start initial contribution. The kick start was abolished in the recent budget.)
- After three years of contributions, individuals can withdraw contributions for deposit on a first home. A first home deposit subsidy may also be granted (subject to eligibility criteria).
- Withdrawal of savings is not permitted until retirement from age 65 unless in the case of financial hardship or permanent emigration. No adjustment to New Zealand Superannuation is made because of the level of KiwiSaver savings.

Major changes to KiwiSaver since 2006 are set out in Table 1.

³ The World Bank classifies savings vehicles into five “pillars”. See Holzmann, Hinz and Dorfman (2008). At the base is a non-contributory pillar directed at alleviating poverty in retirement. Such schemes generally provide a level of support that is not related to pre-retirement incomes. New Zealand Superannuation fits within this classification. Next are two mandatory pillars, which are designed to facilitate income replacement in retirement and both are explicitly or implicitly linked to pre-retirement incomes and are thus directed at allowing people to continue to experience a standard of living in retirement that is commensurate with their income in employment. Because of their link to income, pillars two and three are often employment-based and involve employer contributions. They are compulsory and are often supported by government (tax) subsidies. Before Kiwisaver, New Zealand did not have schemes in this category. The fourth pillar is voluntary savings above the other pillars and usually does not involve government subsidy or compulsion (but may be regulated). This was New Zealand’s system of voluntary savings. The final pillar is a system of non-financial support for those in retirement.

Table 1 Major KiwiSaver changes since inception

Year	Changes to the scheme
2009	\$40 fee subsidy cancelled and mortgage diversion option removed. Minimum contribution rate reduced from 4% to 2%.
2011	Maximum tax credit halved from \$1,043 to \$521 (contribution required to achieve tax credit stayed the same).
2012	Tax credit for children removed (April 2012). All employer contributions made subject to tax applied at the employee's marginal tax rate.
2013	Minimum employee and employer contribution rate increased from 2% to 3% of gross income (April 2013). Standardised Fund Management reporting introduced.
2015	\$1,000 kick-start removed. House price caps increased for first home buyer schemes and member tax credits now eligible for withdrawal.

Source: IRD and various

Since its inception in 2007, KiwiSaver has become by far the most widely-held voluntary private savings vehicle in New Zealand. There are now over 2.5 million individual members in the scheme. Take-up for members between 18 and 64 is around three-quarters of the eligible resident New Zealand population. This is also one of the highest rates of take-up for supplementary (i.e. non-compulsory) retirement savings in the world.

For every dollar a KiwiSaver member contributes, 50c is matched by the government up to a limit of \$521 per annum (under current policy). The approach of providing some level of matching government contribution into publicly-sponsored private pension scheme has been adopted in a growing number of high-income countries. A recent World Bank report argues these provide incentives that are more tangible for individuals to participate in pension funds than the more traditional approach of mandating participation and providing preferential tax treatment, especially for low income groups and individuals who may not participate in the formal labour force, and therefore receive no advantage from tax-based incentives (Rashbrooke 2012).

The proof is in the pudding. Around half of KiwiSaver members are aged between 18 and 44, and hence have at least 20 years work life yet until being eligible for New Zealand Superannuation. In addition, around half of KiwiSaver members are in incomes at or below average levels (\$20,000-\$60,000). In contrast, in most countries of the world, under half of working-aged adults are in a formal pension scheme and before the implementation of KiwiSaver only around 15% of New Zealand's labour force was in a scheme.

Table 2 KiwiSaver member characteristics

Date	Members (active and provisional)	Members over 18 as percent of population 18-64	Number of members on incomes from \$20,000-\$60,000	% members who opt-out of KiwiSaver
June 2008	716,600	23.7%	293,875	19.2%
June 2009	1,100,500	34.5%	429,381	20.1%
June 2010	1,459,900	44.4%	551,690	16.8%
June 2011	1,755,900	53.6%	634,693	14.2%
June 2012	1,966,400	60.8%	708,821	13.0%
June 2013	2,146,800	66.7%	765,044	11.6%
June 2014	2,350,600	72.3%	825,422	10.3%
May 2015	2,519,814	76.5%	..	9.3%

Source: KiwiSaver annual statistics, Inland Revenue Department and Statistics New Zealand

The high level of take-up no doubt reflects the financial incentives (including housing) that are offered by the government for its members. But other design choices are also likely important. It is seen as a good and easy way to save by members, and employers find it administratively simple and cheap (IRD 2015).

While voluntary, the scheme captures many members through its “soft compulsion”. The percentage of members who choose to opt-out is a modest (around 10 percent) and declining share of the total KiwiSaver member base. The World Bank report mentioned attributes the very large share of membership amongst people aged 24 to 35, who typically have a low probability of contributing to retirement saving schemes internationally, to the impact of the automatic enrolment (rather than, say, the subsidy on first homes).

The total level of member (employee, voluntary and employer) contributions to KiwiSaver has been on a broad uptrend as the membership base has grown. Crown contributions have become a declining share of the total as the impact of the initial “kick-start” payment has worn off, and as the level of Crown tax credits have been reduced. Net Crown contributions would be even lower given tax paid back to the Crown from member accounts.

Since inception, the scheme has had over \$15.5 billion paid into it and as at December 2014 the amount of Funds Under Management (FUM) (net of fees and taxes) was about \$26.5 billion, around \$11 billion ahead of the level of contributions.

To date, KiwiSaver has been a very good deal for members – on average for every dollar put in by an individual over five dollars have been accrued through employer and government contributions, as well as investment returns. Returns have also been healthy since markets have recovered from the GFC, compounding at around 7.9% per annum (net of fees and taxes), or 2.9% ahead of average (gross) government bond yields over the period and across KiwiSaver as a whole. This also implies

KiwiSaver returns have healthily outperformed the interest rate cost of the government financing its contributions.⁴

Table 3 Contributions into KiwiSaver and funds under management

Date	Employee and voluntary contributions (\$M)	Employer contributions (\$M)	Crown contributions (\$M)	Crown share of annual contribution (%)	Funds under management (\$billion as at December)
2008	71	64	572	80.9%	2.2
2009	361	355	839	54.0%	5.1
2010	634	626	962	43.3%	8.3
2011	756	740	999	40.0%	11.3
2012	882	866	1,044	37.4%	15.3
2013	856	833	677	28.6%	20.1
2014	1,308	1,277	737	22.2%	26.4
Total contributions (\$billion)	4.9	4.8	5.8	15.5	
Funds Under Management less contributions received	10.9 billion (4.5% GDP)	Simple average annual compounding net return	7.9%	Excess return to 10 year NZ bonds	2.9%

Source: KiwiSaver annual statistics, IRD, RBNZ and NZIER calculations

Prior to the introduction of KiwiSaver, coverage of New Zealanders in occupational savings schemes (provided by government and the private sector) was low at only around 15% of the workforce and on a declining trend. The introduction of KiwiSaver was motivated by concern that many New Zealanders were not preparing well for their retirement, owing to both an inadequate level of savings, and excessive concentration of wealth in residential property and other New Zealand assets.

Much of the debate leading up to its introduction (and the New Zealand Superannuation Fund) was also concerned with the low level of national savings in New Zealand – lifting the savings of individuals should, all else equal, lead to a higher level of savings and net worth at the national level.

These concerns are reflected in KiwiSaver’s primary legislative goals, and at face value these objectives appear to have been well met. The level of take-up is very high, including for young New Zealand workers and for those on lower incomes.

⁴ This is a necessary but not sufficient condition for assessing the broader question of whether KiwiSaver has been good value for money (offered a high benefit compared to its cost).

The high take-up is despite a fair degree of “tinkering” of the scheme since inception, and a generally weakening of government subsidies into member accounts, with the most recent Budget serving to reduce incentives for joining further (particularly for under-18 year olds not in employment). On the other hand, the incentive for joining to help meet the cost of purchasing a first home has increased (Table 3).

Take-up has coincided with a large level of fiscal support, at around \$5.8 billion (gross) from inception to the end of 2014. As discussed in the following section, a recent inter-governmental department study concludes that the success of KiwiSaver in meeting its primary legislative objectives based on evidence of its early years of operation is marginal, at best, because while savings in the scheme have been increasing, these have largely displaced other forms of savings and debt reduction (IRD 2015). In other terms, value-for-money on the contributions made by government has not been compelling.

In this paper we discuss why we think the policy assessment of KiwiSaver effectiveness is premature, likely tainted by the GFC period, and probably over-reliant on the empirical approaches employed.

We present investment facts and investment and behavioural finance “beliefs” to motivate reasons we should be more confident that the scheme will deliver its primary goals over the longer run.

2. The Joint Agency Report

2.1. Report summary

Over the period from 2007-2014 a joint government agency KiwiSaver research and monitoring program was implemented. The purpose of this activity was to gather a body of information and evidence to evaluate KiwiSaver against its legislative purposes. A final summary report was released in February 2015. Some key findings are:

- The implementation of KiwiSaver has been well managed. Employers reported low compliance costs, and members find it an easy way to save money. A 2010 survey found this was the main reason people joined KiwiSaver, followed by government and employer incentives.
- KiwiSaver is providing an important platform for employees to save and it is becoming less common for members to opt-out.
- Knowledge of KiwiSaver amongst the member base increases with assets under management, and there is evidence of their increasing engagement.
- A large majority of members contribute at the default contribution rate.
- KiwiSaver is providing an ongoing stimulus to New Zealand's financial sector, though the impact is assessed to be small given the small size of accumulated FUM to date and the amount of assets held offshore.
- Using a measure of savings flows, the estimated level of additional savings (i.e. KiwiSaver contributions that were additional savings rather than substituting from other forms of saving) was 36%.
- In contrast, studies using a survey dataset of family income and employment (SoFIE) find that KiwiSaver has not been successful in improving the accumulation of net wealth of its members (Law and Scobie 2014).
- Accumulated wealth has come at a significant cost to the Crown. For each dollar of government contribution to KiwiSaver additional savings for the estimated "target group" (i.e. individuals who are not in a position to enjoy standards of retirement similar to those in pre-retirement) ranged from only \$0.20 to \$0.38. However, the trend has been improving as the level of government contributions have dropped given fewer new enrolments and policy changes that reduce government costs.

While KiwiSaver has been unambiguously popular and evidentially well-managed, the report concludes it has only marginally met its key policy objectives of encouraging net asset accumulation and financial independence for members. The report also cautions, however, that this is based on evidence primarily collected over the first 3.5 years of the scheme.

2.2. Caveats and areas of uncertainty

Along with the short evaluation time frame, the joint agency evaluation report provides the following caveats and limitations to its findings:

- Much of the data collected and analysed about retirement income expectations and living standards in retirement was self-reported, meaning that people were asked to provide details of their current income and savings without reference to independently verifiable records.
- The evaluation of the importance of KiwiSaver for the first-wave of retirees may not be as relevant to future retirees, who will build-up a much more significant pool of assets in the scheme.
- The difficulty of determining causality in a complex environment.
- The possible influence of other factors (e.g. the Global Financial Crisis) on the outcomes (e.g. data and behavioural responses).
- The small sample sizes in some of the qualitative work.

To elaborate further on the caveats, we note that KiwiSaver was barely one-year old when Lehman Brothers declared bankruptcy in September 2008, bringing the GFC to a head and causing asset prices to plummet. Annual returns to risky asset classes such as equities and corporate bonds were the worst seen since the Great Depression in the 1930s, and equity benchmarks such as the US S&P500 and NZ50 did not recover back to pre-GFC levels until over 5 years later in early 2013.

The GFC environment did not just, of course, impact asset prices. Unemployment rates rose as business were forced to lay-off staff. Spending reduced as households reacted to the heightened uncertainty by increasing precautionary savings rates, which often took the form of reducing levels of household debt.

One of the key pieces of evidence used to support the conclusion that KiwiSaver has not increased net worth is the study by Law and Scobie (2014). Their analysis of household survey data (SoFIE) collected between 2002 and 2010 suggests that non-KiwiSaver members accumulated more net worth than KiwiSaver members (after controlling for various other effects).

Given SoFIE data is only available to 2010, analysis using this can only consider the first 3.5 years of KiwiSaver. This is a fundamental problem. KiwiSaver balances were still very small in 2010, yet the impact of the GFC, which was not controlled for, was very large. Changes in net worth due to financial asset price movements need to be clearly distinguished from changes in net worth due to individuals increasing savings (sacrificing consumption). It is unclear, therefore, that we can or should generalise their findings to the future.

In relation, self-reported data can produce unreliable results, as people do not always have up-to-date figures about their assets and income to hand when they are asked to complete surveys. Experience with the New Zealand SoFIE survey was that some participants reported large changes in their financial position between surveys that were not consistent with other data sources, leading to concerns over data reliability. This also effect interpretation of the empirical modelling and the reliability of the estimated coefficients, as discussed in Annex A.

As discussed in Guest et al. (2014), another potentially serious problem with the inference that can be drawn from the Law and Scobie analyses is the choice of non-KiwiSavers as a benchmark to compare KiwiSaver performance.

One of key objectives of the Act is to encourage asset accumulation by individuals who are not in a position to enjoy standards of retirement similar to those in pre-retirement. That is, individuals who presumably would not contribute, or not contribute soon enough, to a regular savings scheme. As we noted above, this group is mostly comprised of people in employment on middle to moderate incomes, with lower levels of financial capability. Scobie and Law did find weak evidence of net worth accumulation by 25-34 year olds, a group that traditionally does not regularly save for retirement (see Section 3). As such, it could be argued there is some evidence that even after the very short 3.5 year period of their analysis that KiwiSaver is working where it should.

Regardless of the source of potential problems, the key point is that evaluation of a long-term savings vehicle like KiwiSaver ideally requires a long-period of time in which the impact of market dynamics versus savings behaviour can be cleanly disentangled.

An alternative approach, that overcomes some of the issues of examining KiwiSaver over a short period that could have been taken is to examine KiwiSaver adequacy (for cohorts and overall) through the lens of forward-looking Monte Carlo analysis. This is the industry standard approach for analysing pension systems, and its omission from the evidence base used by the joint agency is striking. The method was employed by MacDonald (2010) to analyse KiwiSaver, and it is the approach taken, for example, by the New Zealand Superannuation Fund in both deciding upon its benchmark, and evaluating long-run performance (Drew 2010).

In brief, Monte Carlo analysis enables the projection of the distribution of potential outcomes under differing assumptions on returns, asset allocations, and fiscal parameters such as the kick-start. It would likely show that as balances grow the net Crown contribution into the scheme would fall and at some stage turn negative under present policy settings – the Crown will eventually take more out through taxes than it puts in through the member tax credits (and the kick-start). It would also likely show that KiwiSaver may help reduce the concentration risks inherent in the way retirement is financed in New Zealand.

Finally, as discussed in the following section, the evidence base used to evaluate the kick-start and KiwiSaver might also have made more reference to (i) the behavioural finance and economics literature, given this provides a further basis for believing policy intervention and support of savings vehicles can be justified, and (ii) research on the composition of wealth in New Zealand, and the extent to which KiwiSaver may reduce concentration risks.

3. Investment facts and beliefs

In this section we frame the debate on whether KiwiSaver is likely to meet its policy objectives in term of the *facts* around wealth, savings and investment in New Zealand and the *beliefs* one would need to hold to support the view that KiwiSaver is likely – over a longer time period – to lead to substantive wealth accumulation and better prepare New Zealanders for their retirement.

The facts we look at include information around the structure of savings in New Zealand. By beliefs we mean propositions that are informed by empirical evidence and theory. They are not mere opinions, but unlike a fact there is still uncertainty and hence room for disagreement among informed parties.

3.1. KiwiSaver and savings facts

New Zealand effectively operates on a 2-tiered retirement income system. New Zealand Superannuation is designed to meet basic retirement needs, whilst KiwiSaver and other forms of private savings provide an asset base that can be drawn upon to supplement income from New Zealand Superannuation (NZ Super).

Table 4 Tiers of retirement income

Tier	Role served by	Purpose
(1) Mandatory public financing	New Zealand Superannuation. Funded by taxes currently, i.e. pay-as-you-go or PAYGO system. In the future the NZ Superfund will partially meet NZ Super costs.	Universal basic retirement income. Helps insure that New Zealanders who do not build-up adequate private savings are still able to enjoy a retirement where basic needs can be met.
(2) Mandatory private savings	Compulsory savings accounts.	Provides supplementary income for retirees over any public support. New Zealand does not have such a scheme.
(3) Voluntary private savings	KiwiSaver. Other private savings (housing, business equity, other financial assets, etc.).	Provides supplementary income for retirees over any public support.

Source: NZIER

Historically and today it is a fact that New Zealanders rely heavily on a relatively narrow pool of assets and income sources to meet their retirement needs. In contrast, best-practice portfolio management and theory stresses that diversification is essential to: (i) improve returns per unit of risk, and (ii) limit the risk that a portfolio suffers a long-lasting or permanent negative “shock”.

The level of income from New Zealand superannuation depends entirely upon wages and salaries in New Zealand given it is indexed to the average wage. In turn, the

financing of this payment and the ability of this Crown to meet the present level of support depends entirely on its taxation revenues (and spending choices). The risk is that New Zealand suffers a relatively poor period of economic performance in the future (for whatever reason), which at the very least leads to a lower level of New Zealand income growth, taxation revenues and hence superannuation payments than would otherwise have been enjoyed.⁵

The historical record shows this is at least a possibility – New Zealand is still yet to recover back to upper OECD income levels following the initial “shock” of losing preferential trade access to the UK in 1973. New Zealand had one of the highest per-capita incomes in the OECD, it now ranks 24th and this position has not materially changed over the past two decades. If we were back at upper-income OECD levels, New Zealand Superannuation would be 30% higher, all else equal.

A poor period of performance or a large “shock” (e.g. another natural disaster or international financial crisis) could also be large enough that a government chooses to change entitlement to NZ Super to meet its fiscal constraints.

Even absent any such “shock”, or period of poor performance, there is nothing preventing a government from changing NZ Super’s parameters. As New Zealand’s population ages the cost of NZ Super will rise (as a percentage of GDP), which all else equal implies that taxes will need to rise. A future government may decide it is preferable to change, for example, the age of entitlement higher, or the level of entitlement lower, or means-test, rather than increase taxes to meet increasing NZ Super costs. We note this has not happened yet – there is a high historic resistance to changing NZ Super parameters – but this does not mean the parameters will never be changed.

Along with the New Zealand concentration risk that the New Zealand Government faces paying for NZ Super, there is a similar concentration risk many New Zealanders face in the asset base they used to finance retirement over the level of support received from NZ Super.

Compared with many OECD countries, private wealth in New Zealand tends to be highly concentrated in New Zealand assets, in particular residential property. RBNZ household balance sheet data presented in Table 5 suggests that only around 5% of assets in New Zealand are held offshore. As a consequence, retiring New Zealanders wanting to boost incomes over the level they receive from NZ Super rely more heavily on releasing equity from their properties and other New Zealand assets. Note that in the table KiwiSaver asset will be part of the equity and investment funds categories.

⁵ The New Zealand Superfund reduces some of this risk because its asset base (and the derived income flow) is from its investments in global markets, but the level of risk mitigation is modest because the Fund will be only a small part of financing future NZ Super payments under present policy settings. There is an established literature that argues save-as-you-go (SAYGO) systems are much better value-for-money ultimately than pay-as-you-go (PAYGO) systems owing to their higher returns and lower concentration risks. Coleman (2014) also argues that the transitional costs of establishing a SAYGO system in New Zealand are outweighed by the benefits.

Table 5 Structure of household balance sheets in New Zealand

Asset	Asset value (\$M) As at Dec 2014	% of total assets
Equity and investment funds	396,546	33%
NZ listed shares	28,438	
NZ unlisted shares	142,398	
Equity in unincorporated NZ businesses	170,335	
Overseas listed shares	6,736	
Cash management trusts	8,220	
Other investment fund shares	37,419	
NZ registered bank and other deposits	137,017	12%
Other financial assets (insurance reserves etc)	84,756	7%
Housing and land values	580,821	49%
% total assets held offshore		5.1%*
% financial assets held offshore		9.9%

Source: RBNZ and NZIER calculations

* Assuming half of other investment shares and other financial assets are offshore exposures. Note the calculation of NZ assets only accounts for where an asset is domiciled. The true NZ economic exposure will likely be lower because offshore conditions will impact on NZ businesses and funding conditions. The point remains, however, that offshore assets remain a small fraction of NZ household wealth.

A shock that negatively affects the Government's ability to finance NZ Super would also likely negatively affect property values and NZ businesses. In addition, while residential property and land price gains in New Zealand have been solid over the past few decades we cannot be assured that future gains will be as large. Two headwinds include:

- I. The fact that New Zealand's population is ageing and many regions of New Zealand will face flat or declining population levels over the next few decades according to Statistics New Zealand projections, reducing the demand for housing (particularly traditional family-sized homes).
- II. The widely-held view that house prices in New Zealand are over-valued, particularly in Auckland given the decline in rental yields to very low levels (under 3% gross) and the large increase in house price-to-income ratios (from around 4 a decade ago to over 8).

Note we are not predicting that residential property will necessarily suffer a poor long-term return; rather we stress the fact that reliance on a single risky asset or country carries concentration risk and higher potential for poor outcomes compared

to a more diversified portfolio. The pain that the finance company collapses caused for retirees with a large exposure to their issued debt is but one recent example of this.

These facts at a national level imply that there is potentially a large vulnerability in financing retirement. This would suggest that it is not the level of savings that is the only issue, but the form is also important.

Most KiwiSaver accounts are broadly diversified portfolios of domestic and foreign assets, with the level of foreign assets (and expected long run returns) increasing as a portfolio's risk profile is increased given the greater exposure to international equities. As such, KiwiSaver is a mechanism to reduce the financing risk and achieve the benefits of portfolio diversification (a higher return per unit of risk). As KiwiSaver portfolio balances grow with time, this benefit will also rise.

To some extent the "home bias" observed in NZ wealth is a function of the fact that people's investment decisions are affected by tax rules. Since tax rules distort New Zealander's investment decisions towards housing and land, one effect of the KiwiSaver subsidies is to redirect asset allocations back to financial assets, particularly international assets. By this metric, the KiwiSaver subsidy is likely a small fraction of the other investment tax distortions in the economy, and KiwiSaver can be interpreted as a means of offsetting the other investment distortions.⁶

In short, given the facts around the current structure of balance sheets and retirement income financing, KiwiSaver arguably increases the likelihood of financial independence of individuals, in line with one of its two key legislative purposes.

The facts do not, however, explain why KiwiSaver is needed as a policy instrument in the first place. Why do we see concentrated portfolios that potentially do not compensate holders for this risk? And why is it that individuals potentially do not save enough to meet their retirement income aspirations? To answer these questions we turn to beliefs around investing and savings behaviours.

3.2. KiwiSaver and savings beliefs

People save for their retirement because they foresee that unless they build up an asset base they will probably not be able to enjoy as high a standard of living when they retire. At a bare-bones level this description is consistent with the standard theoretical life-cycle model of savings behaviour. In this model, people form rational expectations of income over their entire lifetime, and make optimal consumption and savings decisions based on that long term expectation.

One implication of this model is that (on average) individuals will save at a level that maximises their expected lifetime consumption streams. They will not suffer regret from under-saving through their working years. Another is that individuals will likely

⁶ The tax system favours owner-occupied residential property by virtue of the fact that imputed rent of owner-occupied property is not taxed (this is likely to be much higher than the often cited non-taxation of capital gains). The tax system also allows owners of income-earning property (landlords) to deduct their interest expenses against other income ("negative gearing"). While this is not a direct tax subsidy – income is taxed net of business expenses in New Zealand, it does mean that those with significant other income can more easily participate in the housing market. It can also be argued that the tax relief from negative gearing would be lower (and the tax imposed on saving would also be lower) if tax was applied on a real rather than nominal basis (abstracting from any implication to the overall tax take).

hold broadly diversified portfolios, whose risk characteristics match their risk tolerances and related investment time horizons. They will not be anchored in their investments by what is familiar, or by what has provided a good past return.

If we believe this model approximates how savings decisions are made by different groups in society (e.g. different age or income cohorts), and across society as a whole, then there is no obvious public policy rationale for a government sponsored vehicle like KiwiSaver.

There is a large literature that suggests, in contrast, that individual savings and asset allocation behaviours rarely conform to this model due to various “biases” (compared to the rational formation of expectations) and informational gaps.

Behavioural finance and economics is based on the alternative notion that savers and investors, or at least a significant minority of them, are subject to biases that imply savings and investment decisions can be less than fully rational. Evidence of these biases has typically come from cognitive psychology literature, and has then been applied in a financial context. A review of what the literature suggests is the implication for savings in the New Zealand context is provided in Coleman (2011).

Table 6 over the page provides some of the key findings of this literature and their implications. Overall, the thrust of the research and evidence suggests that many individuals may both not save enough, and diversify appropriately.

We observe internationally that governments tend to intervene in savings markets. The biases and information gaps provide an evidence base for why public policy can be justified that is aimed at: (i) creating a savings habit, (ii) making it easier for individuals to save, and (iii) ensuring well-diversified financial products are available.

The key belief that follows is that a scheme such as KiwiSaver should – in time – meaningfully lift net wealth for its members, in particular for members who would not otherwise have set aside funds in a long-term savings vehicle, or would have procrastinated in starting savings to their later regret.

Table 6 Departures from optimal savings and investment behaviour and implications

Departure	Biases shown and evidence	Impact and implications
<p>The information required to save “optimally” is daunting. Knowledge of taxes, relative risks and returns, and strategies to prepare for unforeseen costs and disasters are all specialist fields.</p> <p>Life expectancy is highly uncertain at both an individual and society level. It is not known how long any particular cohort will live with certainty given continual advances in medical technologies.</p>	<p>People tend to use “rules of thumb” and rely on what is familiar given the informational gaps and difficulty in forming long-term expectations.</p> <p>Evidence points to a large home bias,⁷ over-estimation of future returns, and under-estimation of life expectancy and adverse shocks to incomes and wealth.⁸</p> <p>People prefer less rather than more options when making choices.⁹</p>	<p>Lack of diversification and poor investment choices.</p> <p>Savings level inadequate for life expectancy.</p> <p>Public policy intervention may be required to encourage savings and portfolio diversification.</p> <p>Take-up may be higher with a limited range of choices, as recognised in the design of KiwiSaver.</p>
<p>Savings and consumption preferences are not stable – the consumption sacrifice an individual is prepared to make may change with age, level of income, financial education, or family formation. In general, evidence suggests preferences are not “time consistent”.</p>	<p>Procrastination.</p> <p>Survey evidence suggests people experience regret from not having saved enough earlier in life (see ASB 2012, Law et al. 2011 and Financial Services Council 2012).</p>	<p>Compulsory or soft-compulsion saving schemes such as KiwiSaver will raise the welfare of people who otherwise haven’t figured out how to overcome time-inconsistency issues.</p>
<p>Consumption “habits” are not consistent with the life cycle model. People do not like cutting back consumption and tend to tie consumption patterns to others – a “keeping up with the Joneses” effect.</p>	<p>When a bad “shock” to incomes occur people will tend to run-down savings to maintain their lifestyle, even if over the longer-term this leaves them much worse off.</p>	<p>People will have less exposure to risky asset classes because they are over concerned that they may lose money they once had.</p> <p>KiwiSaver may lead to better diversification of wealth.</p>
<p>People will form mental and actual savings accounts for funding different purposes (e.g. an annual holiday account, an account for long-term savings, an account for large one-off costs, etc.).</p>	<p>Spending and saving depends on whether income is placed into one account or another – funds are not perfectly substitutable.¹⁰</p>	<p>People will tend to not offset funds put into a long-term savings account by running down savings elsewhere.</p> <p>KiwiSaver may lead to an increase in net worth because it will be treated as a separate mental account.</p>
<p>The investment choices people make are often inconsistent with maximising long run returns given risk preferences.</p>	<p>Along with home bias, people have portfolios that are concentrated in a small number of assets (e.g. rental housing in New Zealand).</p>	<p>Savers take portfolio risks that both may not be compensated for and are not justified by their risk appetites.</p> <p>KiwiSaver, by being professionally managed at arms-length, may help savers form portfolios that better balance risk with return objectives.</p>

Source: NZIER

⁷ Stratman (1999) and (2004).

⁸ O’Connell(2010) and Financial Services Council(2012).

⁹ Sethi-Iyengar et al (2004).

¹⁰ Barberis and Thaler (2003).

In Table 7, we draw out what the implication of the behavioural literature at the extremes – people who are most and least likely to benefit from KiwiSaver. We suggest KiwiSaver is most likely to benefit individuals who have low levels of financial capability, incomes, and net worth. These individuals can potentially benefit from, first, using KiwiSaver to establish a savings plan; second to make the leap from renting to home owning; and third to building up a retirement nest egg. A savings habit is established over both phases.

In contrast, individuals who already have high levels of financial capability and net worth are less likely to increase net worth via KiwiSaver beyond which is incurred through direct fiscal support. Such individuals are also most likely to offset wealth accrued in KiwiSaver through running down assets (or increasing debt levels) elsewhere. In reality, most people are somewhere in between the two extremes outlined in Table 7. In particular, survey evidence suggests that financial capability – especially to the level required to save optimally – is not widely held regardless of income and wealth levels and most people under-estimate longevity. The implication is that KiwiSaver will not necessarily just better prepare the young and those on lower incomes for their retirement.

Table 7 Characteristics of individuals most and less likely to benefit from KiwiSaver

Most likely are individuals who	Least likely are individuals who
Have low levels of financial capability : lack of understanding of compounding returns, investment and financial planning options, awareness of longevity risks, awareness of income protection risk products, awareness of levels of capital required to support retirement, etc.	Have high levels of financial capability and seek expert financial (tax, legal, estate) planning assistance.
Are liquidity constrained, i.e. they are not able to use financial assets to support consumption when this is needed.	Are not liquidity constrained.
Have relatively low levels of net worth and are unlikely to yet own a home.	Already have built up significant net worth in housing and other assets.
Have relatively low incomes.	Are on relatively high incomes.
Find it hard to form and carry-out a savings plan.	Are good financial planners and implementers.
Have a low tolerance for risk (even when it is matched to reward).	See risk as a way of achieving reward.
Find it hard to defer gratification (“money burns a hole in my pocket”).	Are “future focussed” and see deferring immediate gratification as a way of achieving even higher returns in the future (“no pain, no gain”).

Source: NZIER

4. Conclusions

Based on our reviews of savings and investment facts and beliefs we conclude that KiwiSaver is likely to lead to an increase in net worth for those people to whom it is targeted, that is, members who do not already enjoy a high level of net worth and financial capability. Middle and lower income KiwiSaver participants are the group most likely to benefit and enjoy a standard of living in retirement that is both superior to what they would be able to obtain without KiwiSaver, and closer to what they are able to achieve pre-retirement. For people outside this group, i.e. very low income people such as beneficiaries and people with high incomes and high net worth, KiwiSaver is less likely to increase net savings.

KiwiSaver should also lead to more diversified portfolios in New Zealand, reducing downside concentration risks.

While our conclusions are essentially forward-looking, they are grounded by the current structure of wealth in New Zealand, long-term investment return patterns, and an established evidence base on savings behaviours.

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Appendix A

As discussed in Section 2, a study by Law and Scobie (2014) is one of the key pieces of evidence used to support the conclusion that KiwiSaver has not increased net worth for members.

To elaborate further on the short time frame issue and the impact of the GFC, Guest et al. (2014) suggest that due to household deleveraging during the GFC individuals in the SoFIE survey may have decided to “save” in a different way (e.g. retire debt or support their business) rather than join KiwiSaver. Households who made this choice would have generally fared better than households who participated in KiwiSaver given the large decline in listed asset prices.

In addition, given the self-reported nature of the SoFIE dataset, it is possible that asset values reported were “stale” for private markets asset classes that non-KiwiSaver members (e.g. business owners) may have had a relatively higher exposure to. In the GFC period, commercial and residential property, farm and general business sales transactions dried up, limiting the observed fall in their prices. The “true” marked-to-market price of these assets, however, would have been similar (possibly even lower given the blow out in illiquidity premiums) to the prices observed for listed counter-parts. This problem may have led to an over-reporting of the value of assets for non-KiwiSaver members (and wealth overall).

In general, self-reported data can produce unreliable results. Experience with the New Zealand SoFIE survey was that some participants reported large changes in their financial position between surveys that were not consistent with other data sources. This is partly explained by the way SoFIE was conducted, in that participants were not shown their previous survey returns and ask to update them. Rather, each time they were surveyed, they were asked to report their income and savings from scratch.

The errors in measurement of the wealth data also affect interpretation of Law and Scobie’s empirical results. Law and Scobie recognise that the errors are large – they discuss in their paper “transition matrices” between wealth levels which puzzlingly show that a large number of people are in the lowest quintile of wealth one period, but middle wealth the next; and a large number of people in the highest wealth quintile one period have low wealth subsequently – but the effects of potential measurement error on their estimates is not corrected for.

These measurement issues potentially impact on empirical results and coefficients in non-intuitive ways. For example, it is found that differences in the changes in wealth for KiwiSaver members and non-members are highest for highly educated men, and are also much greater for women than for men. It is not clear why this should be the case. In addition, the fixed effect regression results have a very large statically important negative coefficient on the previous wealth variable, implying that previous wealth is a negative predictor of changes in wealth. Again this is a non-intuitive results – wealth accumulation in one period should not lead to a run-down in wealth the next. Overall, this raises concern over whether there may be other specification problems that affect the confidence we can have in the inference we can take from the modelling in general.