

The Superannuation Guarantee, wealth and retirement saving

The introduction of the Superannuation Guarantee in Australia appears to have increased household wealth and raised self-funded retirement incomes.

Voluntary saving for retirement in pension accounts also appears to have increased slightly, possibly due to the added convenience of being able to make contributions directly into these pension accounts.¹



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An earlier version of this paper was presented to the 12th Melbourne Money and Finance Conference, 'Wealth Management: Trends and Issues', conducted by Melbourne Centre for Financial Studies in May 2007. Original conference papers are available from www.melbournecentre.com.au/MMFC.htm

INDIVIDUAL PENSION ACCOUNTS are growing in importance as a pillar of retirement incomes policy in developed economies. Policy makers have generally assumed that introducing such pre-funded pension schemes improves retirement incomes and increases household wealth. However, there has been relatively little empirical work that tests this assumption. This paper focuses on the effect that Australia's system of compulsory pension accounts (the 'Superannuation Guarantee') has had on household saving. This scheme, which was introduced over the period from 1986 to 1992, requires employers to pay a percentage of their employees' earnings into pension accounts. The accounts are managed by private sector pension funds and cannot be accessed until the employee retires after the age of 55. The scheme has raised pension plan coverage from around 40 per cent of the workforce in 1983 to 90 per cent since the mid 1990s.

Australia's system provides a natural experiment since a small proportion of employees do not receive employer contributions to pension accounts. As a result, it is possible

to compare households that received contributions with those that did not. Using data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, this paper attempts to answer two related questions:

- i. Have compulsory pension accounts increased household wealth?
- ii. What effect do compulsory pension accounts have on voluntary saving for retirement?

Turning to the first question, compulsory pension accounts will raise wealth if households do not increase consumption to fully offset the growth of their pension accounts. In a life-cycle model with no financial constraints, households who view their pension accounts as perfect substitutes for other assets would reduce those other assets (or, if need be, borrow) so as to offset compulsory contributions to their pension accounts, leaving their net wealth unchanged. However, if some households are financially constrained, they may not be able to do this. Furthermore, households might not view

By automatically providing households with pension accounts, the compulsory system may make it more convenient for them to save. Some employers also provide employees with saving incentives such as matched contributions.

their pension accounts as perfect substitutes for other forms of saving. For instance, households may value the balance in their retirement account less than an equivalent liquid investment if they are financially constrained. Consistent with compulsory pension accounts raising household wealth, aggregate pension (superannuation) assets have increased significantly over the past two decades, rising by almost 100 percentage points as a share of household income, while financial assets and total net wealth have increased by around 130 and 230 percentage points respectively as a share of household income (Figure 1).

For the purpose of analysing retirement incomes, it is possible to separate household saving into three parts: compulsory pension contributions; voluntary pension contributions; and non-pension saving. In answering the second question, I define voluntary retirement saving as making voluntary contributions to pension accounts, where these funds cannot be accessed until retirement. Compulsory pension accounts will only increase retirement incomes if households do not reduce their voluntary retirement saving in response. Since compulsory and voluntary pension contributions are close substitutes, households could be expected to reduce their voluntary contributions in response to an increase in compulsory

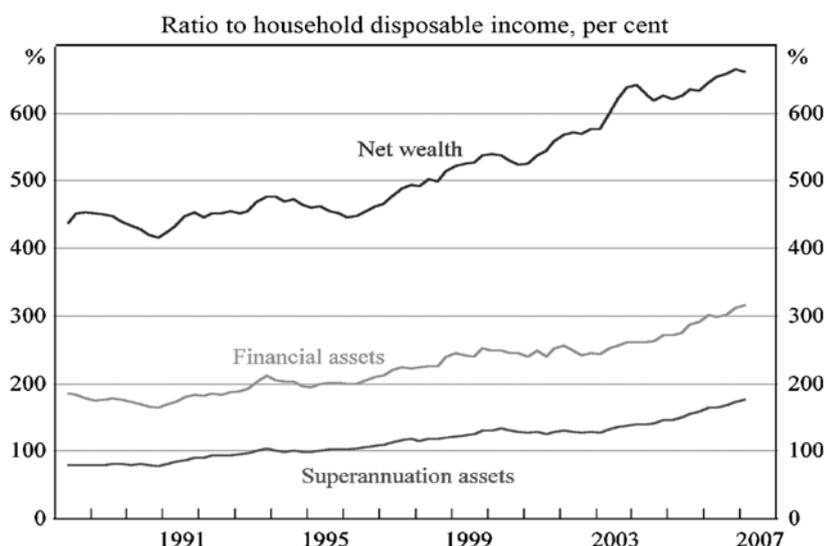
contributions. On the other hand, compulsory pension accounts might actually increase voluntary saving for retirement by shifting household preferences. For instance, if these accounts alert households to the importance of retirement planning, then they may choose to save more for retirement. Furthermore, by automatically providing households with pension accounts, the compulsory system may make it more convenient for them to save. Some employers also provide employees with saving incentives such as matched contributions. In aggregate, total contributions to pension accounts (including voluntary contributions) have increased since 1986, broadly in line with the rising compulsory contribution rate (Figure 2).

Methodology and data

This paper seeks to estimate the effect of compulsory pension accounts on household wealth and retirement saving.² Australia's system provides a natural experiment as around 8 per cent of employees did not receive employer contributions to pension accounts in August 2002.³ Therefore, households that received contributions can be compared with those that did not. The main statutory exemptions from making compulsory contributions are for the employers of individuals earning less than \$450 per month, those under 18 years of age who work less than 30 hours a week and certain jobs such as transport drivers, household employees and providers of childcare in the home. Those who are not remunerated as employees, such as independent contractors and the self-employed are also exempt. Finally, there may be a small percentage of employers who are avoiding making contributions despite being legally required to do so. Such employers are likely to be part of the underground economy, which has been estimated by the Australian Bureau of Statistics (2003b) to be up to 2 per cent of GDP.

This paper uses the confidentialised unit record dataset from the HILDA Survey (Release 3.0), a household-based

FIGURE 1. HOUSEHOLD WEALTH



Source: ABS; RBA; author's calculations.

Household wealth increases by around 70 to 90 cents for every extra dollar in compulsory pension accounts.

panel study that began in 2001 from a reference population of all members of private dwellings in Australia. Wave 1 of the panel consisted of 7682 households and 19,914 individuals. In Wave 2, conducted between 21 August 2002 and 19 March 2003, a special module collected comprehensive and detailed wealth data from each household. The key question that measures whether households receive compulsory pension contributions is: 'Does your employer/business make contributions into a superannuation scheme on your behalf?'

Table 1 displays characteristics for the full sample which includes all households where the household head (the most important provider of income) is aged below 65 years and where someone in the household is employed and either receives or does not receive compulsory pension contributions. I also divide the sample into those above and below the median income of the full sample.

Around 6.5 per cent of households in the full sample do not receive compulsory pension contributions. This is broadly consistent with ABS estimates of the proportion of employees not covered by the system. By income, the proportion not covered ranges from 9.6 per cent for below-median-income households to 3.4 per cent for above-median-income households. The latter group is

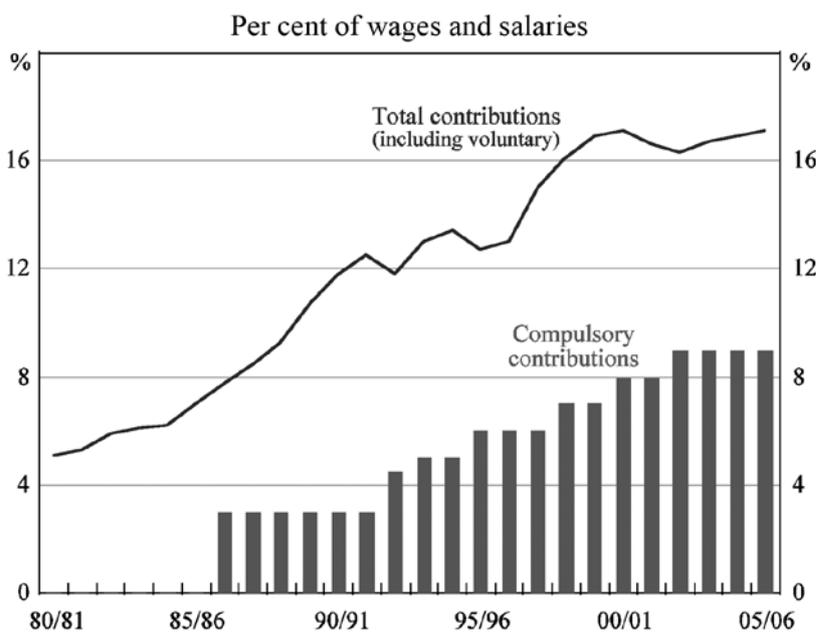
quite small, so results for the above median income sample should be interpreted with a greater degree of caution.

The bulk of the households not receiving compulsory pension contributions appear to fall into at least one of the statutory exemptions. Table 2 shows the percentage of the sample that fall within the statutory exemptions. Another indicator of whether households are exempt is if tax is withheld from income. Employees who earn below the tax-free threshold do not need to have income tax withheld and are exempt, along with independent contractors and the self-employed, who are not remunerated through wages and salaries. Cumulatively, the exemptions appear to cover 77.5 per cent of the households where no working household members receive compulsory pension contributions.

The remaining households that do not receive compulsory pension contributions may have jobs in the underground economy. These households represent 1.4 per cent of the full sample, consistent with estimates of the size of the underground economy.

To estimate the effect of compulsory pension contributions on household wealth and retirement saving, I develop a model of saving behaviour in which it is assumed that, after controlling for other factors, the decision of the government and employers as to whether households receive compulsory pension contributions is independent from the households' unobserved taste for saving. Therefore, in the regression models estimated in this paper, I control for: household income; age; gender; and health condition, which affect saving through the permanent-income and life-cycle hypotheses; whether someone in the household is self-employed; the industry in which the household head works, since institutional

FIGURE 2. CONTRIBUTIONS TO PENSION ACCOUNTS



Source: ABS; Australian Taxation Office; author's calculations.

arrangements for pensions differ by industry; and the subjective job insecurity of the household head, to control for the fact that households not receiving pension contributions may have a greater precautionary motive for saving. Other covariates typically used in wealth regressions are also included: education; marital status; family size; location; and the number of years the household head has spent in the workforce.

Empirical results

Household Wealth

To measure the effect of compulsory pension accounts on wealth, I estimate the effect on the wealth-to-income ratio, since compulsory contributions to pension accounts should be proportional to labour income. The measure of wealth considered in this paper includes financial wealth but excludes business equity and housing equity ('net financial wealth'). These are excluded since private businesses and houses are rarely traded, lowering the accuracy of business and housing equity data relative to the accuracy of financial assets data, where prices are updated by financial markets. The wealth measure is also constructed including and excluding pension assets so that the effect of receiving compulsory pension contributions can be broken into the effect on pension assets and the effect on other assets.

The first three columns of Table 3 present the results for the estimated median effect of receiving compulsory pension contributions on the financial wealth-to-income ratio. For the full sample, receiving contributions significantly increases the net financial wealth-to-income ratio by 20.3 per cent of income. When this is disaggregated into the contribution from pension assets and other assets, the effect is mainly due to an increase in pension assets of 15.8 per cent of income. Households do not appear to be offsetting the increase in pension assets by reducing other financial wealth, since the point estimate for the

TABLE 1. CHARACTERISTICS OF SAMPLES

	Full sample	Below median income	Above median income
No compulsory pension contributions (%)	6.5	9.6	3.4
Median household disposable income (\$)	49705	33398	70145
Age of household head (yrs)	40	38	42
Makes voluntary super contributions (%)	36.8	24.3	49.4
Median net financial wealth (\$)	73 630	37 060	127 250
Number of households	4 379	2 190	2 189

Source: HILDA 2002, Release 3.0.

It is possible that compulsory pension contributions lead to higher voluntary pension contributions by highlighting the importance of retirement saving and making it more convenient.

effect on non-pension assets is positive (4.4 per cent) and statistically insignificant.⁴

The results for the sub-samples show that the effect of receiving contributions on the financial wealth to income ratio is positive and generally significant at the 10 per cent level. For below median income households, the effect on financial wealth is 21.1 per cent of income and appears to be dominated by a 17.4 percentage points higher level of pension assets.

While the results in the first three columns of Table 3 suggest that compulsory pension contributions have a positive effect on net wealth, they only provide an imprecise estimate of the magnitude of the effect. More precise estimates of the marginal effect of a dollar of compulsory pension assets on household wealth can be obtained by estimating a model of net wealth as a function of the compulsory pension account balance, controlling for other factors, with the results presented in the last three columns of Table 3. Unfortunately, it is not possible to directly measure the size of each household's compulsory pension account since most households are also allowed to make voluntary contributions into the same account. Instead, I construct an estimate using data on wages and salaries, the compulsory pension contribution rate and aggregate pension fund investment returns.

TABLE 2. EXPLAINING COMPULSORY PENSION COVERAGE CHARACTERISTICS OF THE HOUSEHOLD HEAD

	No compulsory pension contributions		Compulsory pension contributions	
	Per cent	Cumulative Per cent	Per cent	Cumulative Per cent
Labour income less than \$450 per month	47.5	47.5	7.9	7.9
Self employed	20.8	58.5	6.6	13.2
Under 18 and working fewer than 30 hours per week	1.1	58.8	0.0	13.2
Work in industry with statutory exception	5.6	62.0	5.3	17.9
Income tax not withheld or not receiving wage/salary	59.9	77.5	8.2	19.2

Source: HILDA 2002, Release 3.0.

TABLE 3. COMPULSORY PENSION CONTRIBUTIONS AND HOUSEHOLD WEALTH

	Effect of receiving compulsory pension contributions on household wealth to gross income ratio			Marginal effect of extra dollar of compulsory contributions on household wealth		
	Full sample	Below median income	Above median income	Full sample	Below median income	Above median income
Net Financial wealth						
Including assets in pension accounts	20.3 *	21.1 #	61.2 *	0.91 *	0.77 *	0.83 *
Excluding assets in pension accounts	4.4	3.8	14.7	-0.19 *	0.09	-0.30 *

Note: * represents significance at the 5 per cent level; # represents significance at the 10 per cent level.

Overall, the results suggest that marginal increases in compulsory pension account balances largely flow through to increases in household wealth. For the full sample, an extra dollar in compulsory pension accounts increases net financial wealth by 91 cents, suggesting an offset of only 9 cents through reductions in other assets. This appears to occur mainly through reductions in non-pension financial wealth, which falls by a statistically significant 19 cents; however, it should be noted that the equivalent coefficient in column 1 was insignificant. The marginal effect of compulsory contributions on net financial wealth for above-median-income households is 83 cents, close to the effect for below-median-income households of 77 cents. Above-median-income households appear to have a larger stock of non-pension saving with which to offset compulsory contributions. Their financial wealth excluding pension assets falls by 30 cents for every extra dollar in compulsory pension accounts, while the non-pension assets of below-median-income households are not significantly affected. Interestingly, compulsory contributions appear to have more than a dollar-for-dollar effect on the pension assets of above-median-income households. This result may be due to high income earners making voluntary pension contributions to take advantage of their concessional tax treatment.

Overall, it would be reasonable to characterise the results in Table 3 as suggesting that household wealth increases by around 70 to 90 cents for every extra dollar in compulsory pension accounts.

TABLE 4. EFFECT OF COMPULSORY CONTRIBUTIONS ON VOLUNTARY RETIREMENT SAVING
Marginal effect (per cent)

	Full sample	Below median income	Above median income
Whether make voluntary contributions	18.6*	14.7*	15.5*
Voluntary contributions as percentage of labour income	1.5*	0.9*	1.7*

Note: * represents significance at the 5 per cent level.

Voluntary saving for retirement

Receiving compulsory pension contributions appears to have a positive influence on the propensity of households to voluntarily save for their retirement in pension accounts. The results of a model on whether households make voluntary contributions are presented in Table 4. For all the samples, the probability of making a voluntary contribution increases when households receive compulsory pension contributions and the effect is statistically significant at the 5 per cent level. In the full sample, the probability of making voluntary contributions is 19 per cent higher if the household receives compulsory contributions.

It is somewhat surprising that the effect on voluntary retirement saving is positive, since we would expect households to first offset compulsory contributions by reducing their voluntary contributions. It is possible that compulsory pension contributions lead to higher voluntary pension contributions by highlighting the importance of retirement saving and making it more convenient. This result is similar to findings for the United States by Madrian and Shea (2001), where households are more likely to voluntarily save in retirement accounts if they are automatically enrolled by their employer.⁵ Nevertheless, households could still offset their retirement saving by reducing non-pension assets, such as housing equity or other investments.

To quantify the effect on voluntary retirement saving, Table 4 also presents the results of a model that explains the size of voluntary contributions as a per cent of labour income. The marginal effect of compulsory contributions is to increase voluntary contributions by around 1.5 per cent of income in the full sample. The marginal effect is estimated to be around 1 per cent of income for below-median-income households, compared with closer to 2 per cent for above-median-income households, implying that a low income restricts the ability of households to save more for retirement.

The magnitude of the effect across the samples appears small but is economically significant, particularly if the extra 1.5 per cent of saving each year occurs throughout the working life of the household. Under conservative assumptions regarding investment returns on

assets in these accounts, over a 40 year working life, this extra saving would cumulate after tax so as to increase the wealth of the household by 75 per cent of pre-retirement income.⁶ Assuming a replacement rate of 40 per cent of pre-retirement income, this extra saving would fully fund around two years of retirement. Alternatively, over a 25-year retirement period, this would boost the replacement rate by around 5 percentage points.

Conclusions

Australia's experience with compulsory pension accounts is a useful case study since the reforms have been operating for over 15 years. This paper finds that Australia's pension accounts increased household wealth, with an extra dollar in compulsory pension accounts adding between 70 and 90 cents to household wealth. This result is consistent with some households facing financial constraints that prevent them from fully offsetting the compulsory contributions employers make on their behalf by reducing other assets or borrowing. It also appears that voluntary saving in pension accounts increased slightly, which may be due to the Superannuation Guarantee making households more aware of the need to save for retirement, or the added convenience of being able to make contributions directly into pension accounts set up by employers. These results suggest that compulsory pension accounts can increase household saving and expected retirement incomes.

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Notes

- 1 I would like to thank Alberto Abadie, Owen Covick, Jonathan Kearns, Christopher Kent, Marion Kohler, Guay Lim, Luke Willard and participants at the 12th Melbourne Money and Finance Conference for their helpful comments. The views expressed in this paper are those of the author and do not necessarily reflect those of the Reserve Bank of Australia.
The Household, Income and Labour Dynamics in Australia (HILDA) Survey was initiated and is funded by the Australian Government Department of Families, Community Services and Indigenous Affairs (FaCSIA), and is managed by the Melbourne Institute of Applied Economic and Social Research (MIAESR). Findings and views based on these data should not be attributed to either FaCSIA or the MIAESR.
- 2 For further details, see Connolly (2007).
- 3 Australian Bureau of Statistics (2003a).
- 4 When business and housing equity are added to obtain a measure of total net wealth, the results are not statistically significant but the effect is still economically sizeable at 46.7 per cent of income.
- 5 Covick (2002) suggested that means-testing arrangements on social security programs could also help to explain why some households may choose to voluntarily save more for retirement in response to a compulsory saving scheme.
- 6 Assuming nominal labour income grows by 4 per cent, nominal returns to pension funds average 7 per cent and contributions and returns are taxed at 15 per cent.

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