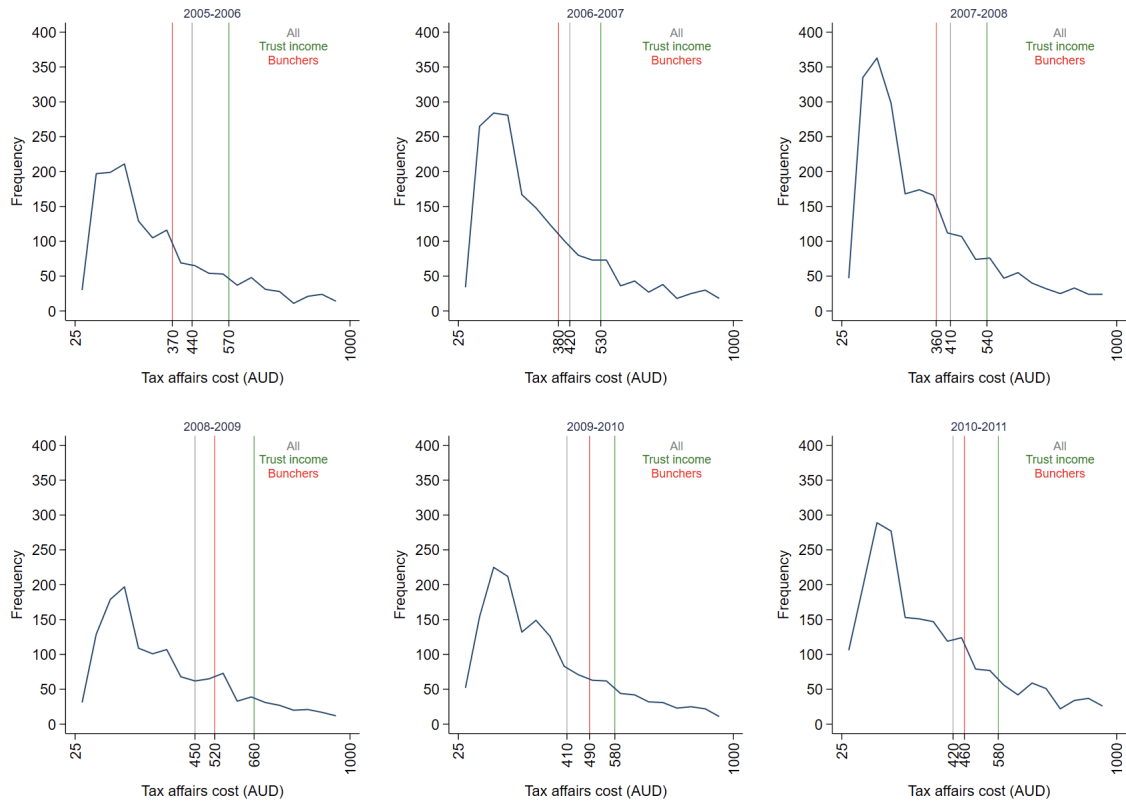Figure 12: Distribution of tax affairs costs

Notes: This figure illustrates the distribution of tax affairs costs in our study sample. The study sample consists of individuals with taxable income between AUD 130,000 and AUD 200,000. Bunchers are defined as individuals with taxable income within a AUD 5,000 window around the top kink. The gray, green, and red lines represent the average tax affairs costs for all individuals, those with trust income, and bunchers, respectively. The costs show an increase in the policy change year, indicating a re-optimization cost.

Figure 13: Distribution of personal contributions to super funds
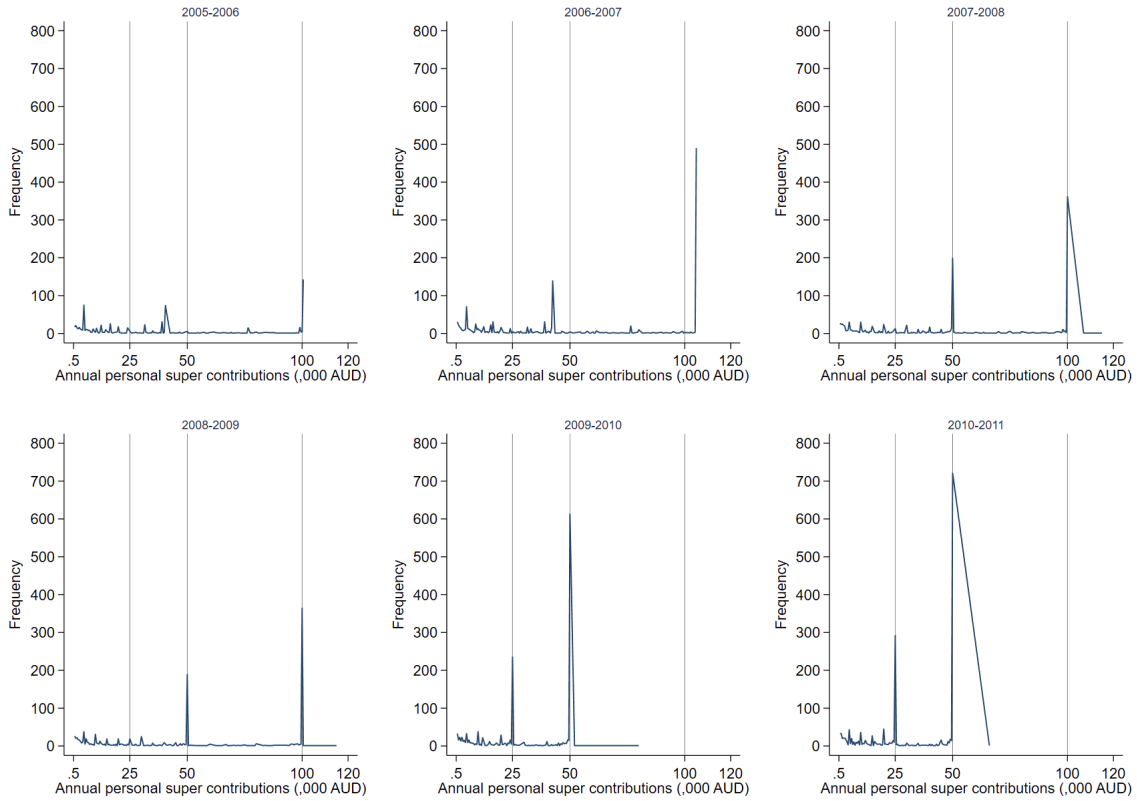
Notes: This figure displays the distribution of annual personal contributions to tax favoured retirement funds, known as "superannuation" funds. Starting from 2007-2008, an age-based cap on contributions was introduced. This cap determined when the marginal tax rate increased from a 15 percent flat rate to an individual's marginal income tax rate. The cap was initially set at AUD 50,000 and AUD 100,000 for those below and over 50 years old, respectively. These caps were later reduced by 50 percent to AUD 25,000 and AUD 50,000 in 2009-2010. The study sample consists of individuals with taxable income between AUD 130,000 and AUD 200,000. Bunching at the contribution caps is observed, and it appears largely unaffected by changes in the top kink of the income tax schedule.
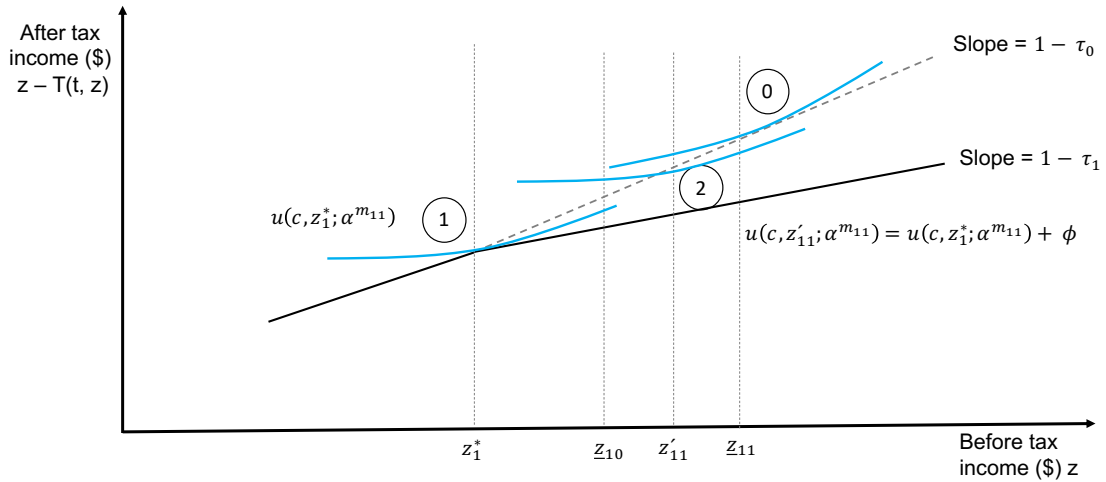
Figure 14: Taxable income responses of marginal buncher

(a) Former kink before policy change
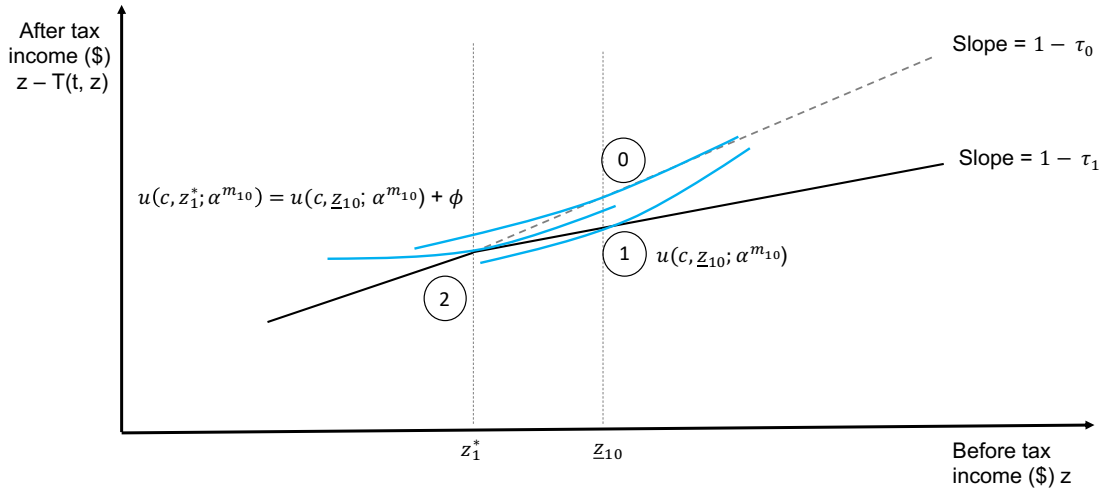
Note: This figure illustrates the change in taxable income for a marginal buncher located at the former kink z_1^*, characterized by ability $\alpha^{m_{10}}$, and initial taxable income $\underline{z}_{10}$ before the policy change. These individuals face a choice between remaining at $\underline{z}_{10}$ with a higher marginal tax rate of τ_1 or incurring a cost ϕ to bunch at z_1^* with a lower marginal tax rate of τ_0.

(b) Former kink after policy change

Note: This figure illustrates the change in taxable income for a marginal buncher with ability $\alpha^{m_{11}}$ and initial taxable income $\underline{z}_{11}$ at the former kink z_1^* after the policy change. Initially, when a kink at z_1^* is introduced, they choose to bunch at that kink. Subsequently, when the policy change increases the top kink to z_2^*, they face a decision between continuing to bunch at z_1^* or incurring a cost ϕ to increase their income to the optimal level, represented by the new taxable income z_{11}' under the new tax schedule.

(c) New kink

Note: This figure illustrates the change in taxable income for a marginal buncher with ability α^{m_2} and initial taxable income $\underline{z}_2$ at the new kink z_2^*. Initially, after introducing a kink at z_1^*, they decrease their taxable income to $\underline{z}_2'$. Subsequently, when the kink is moved to z_2^*, they face a decision between staying at $\underline{z}_2'$ with a higher marginal tax rate of τ_1 or incurring a cost ϕ to bunch at z_2^* with a lower marginal tax rate of τ_0.

Figure 15: Counter-factual distribution of taxable income

Note: This figure illustrates the counterfactual distribution of taxable income and bunching ranges at z_1^* and z_2^* kinks. The bunching range at z_1^* in the absence of cost is area $i + ii + iii$. When individuals face a cost, the bunching range shrinks to $ii + iii$. After the policy change, bunching at z_1^* is represented by area ii. Similarly, the bunching ranges at z_2^* without and with cost are represented by area $iv + v$ and v, respectively.

A   Appendix: Tables

Table A.1: Summary statistics of all tax filing individuals

	Three years before policy change	Three years after policy change
Economics outcomes		
Total income (,000 AUD)	45.6	50.4
	(154.2)	(241.6)
Taxable income (,000 AUD)	42.8	47.5
	(150.2)	(139.1)
Net tax amount (,000 AUD)	9.0	9.1
	(65.1)	(38.7)
Total deductions (,000 AUD)	2.7	2.7
	(18.0)	(295.5)
Total tax withhold (,000 AUD)	8.5	9.1
	(17.9)	(20.6)
Wage and salary income (,000 AUD)	8.5	9.7
	(17.9)	(20.6)
Trust income (,000 AUD)	0.006	0.008
	(4.4)	(3.8)
Gross taxable income (,000 AUD)	42.5	46.9
	(148.6)	(231.4)
Occupation:		
Managers	0.09	0.09
Professionals	0.15	0.16
Technicians and trade	0.09	0.10
Community and personal services	0.07	0.08
Clerical and administrative	0.11	0.14
Sales	0.07	0.06
Machinery operators and drivers	0.04	0.05
Labourers	0.09	0.08
Self employed	0.36	0.35
Has trust income	0.16	0.14
Self employed with trust income	0.76	0.75
Used tax agent	0.73	0.71
Tax file preparation time (hours)	8.4	7.5
	(50.1)	(44.8)
Tax affairs fee (,000 AUD)	0.13	0.34
	(3.5)	(292.3)
Demographics		
Age (years)	42.5	42.7
	(15.5)	(15.6)
Male	0.52	0.52
Has spouse	0.57	0.57
Has child	0.57	0.50
Major city	0.61	0.69
Main earner	0.62	0.58
Male main earners	0.67	0.70
Number of individuals	1,363,727	1,438,569
Total number of observations	3,690,608	3,909,038

Note: This table presents the summary statistics of all tax filers. The sample includes all Australian resident individual tax filers above 18 years old from 2005-2006 to 2010-2011. For additional information, refer to the notes for Table 1.

Table A.2: Estimates of fixed tax sheltering cost and elasticity of taxable income

	Elasticity e	Average cost ϕ_a
Base model	0.099 [0.092, 0.106]	0.801 [0.071, 1.531]
Gender: Male	0.056 [0.049, 0.061]	0.329 [-0.885, 1.543]
Gender: Female	0.218 [0.1476, 0.288]	2.663 [-3.467, 8.794]
Age: 18-44 years	0.116 [0.103, 0.128]	1.061 [0.026, 2.095]
Age: 45-59 years	0.084 [0.079, 0.089]	1.547 [0.253, 2.841]
Has spouse	0.092 [0.085, 0.098]	0.698 [-0.107, 1.504]
Has child	0.100 [0.092, 0.108]	4.754 [3.645, 5.862]
live in major city	0.110 [0.102, 0.117]	1.054 [0.626, 1.483]
Main earner	0.057 [0.051, 0.063]	0.437 [0.121, 0.725]
Employment type: Wage and salary earner	0.017 [0.013, 0.020]	9.906 [-0.663, 2.474]
Employment type: Self employed	0.205 [0.166, 0.243]	2.445 [-1.115, 6.006]
Professional and managers	0.056 [0.037, 0.074]	0.033 [-4.571, 4.636]
Used tax agent	0.110 [0.103, 0.117]	1.217 [0.229, 2.206]
Spent more than 10 hours filling taxes	0.099 [0.093, 0.106]	0.714 [0.032, 1.397]

Note: This table presents the estimated average tax sheltering cost and the Elasticity of Taxable Income (ETI) from the model specified in Section 4.1.1. The estimates capture immediate responses to the policy change using data from one year before and one year after the policy change. The 95% confidence intervals, computed using bootstrapped standard errors, are shown in brackets.

Table A.3: Estimates of elasticity of taxable income using Saez (2010) model

	Elasticity e
Base model	0.098 [0.0913, 0.105]
Gender: Male	0.055 [0.050, 0.060]
Gender: Female	0.214 [0.141, 0.286]
Age: 18-44 years	0.114 [0.101, 0.126]
Age: 45-59 years	0.082 [0.076, 0.086]
Has spouse	0.091 [0.083, 0.098]
Has child	0.093 [0.082, 0.102]
live in major city	0.108 [0.099, 0.117]
Main earner	0.056 [0.049, 0.063]
Employment type: Wage and salary earners	0.014 [0.009, 0.017]
Employment type: Self employed	0.201 [0.165, 0.236]
Occupation: Professional and managers	0.056 [0.049, 0.061]
Used tax agent	0.110 [0.103, 0.117]
Spent more than 10 hours filling taxes	0.098 [0.091, 0.105]

Note: This table presents the estimated Elasticity of Taxable Income (ETI) using the Saez (2010) model. The estimates capture immediate responses to the policy change using the data from the policy change year. The 95% confidence intervals using bootstrapped standard errors are in the brackets.

Table A.4: Estimates of tax sheltering cost and elasticity of taxable income for flexible bunchers

	Elasticity e	Fixed cost ϕ_f
Self employed		
Saez model	0.201 [0.165, 0.236]	
With costs	0.205 [0.166, 0.243]	2.445 [-1.115, 6.006]
Trust income holders		
Saez model	0.261 [-3.943, 4.465]	
With costs	0.265 [0.170, 0.361]	2.720 [-5.776, 11.213]
Self-employed with trust income		
Saez model	0.330 [-4.150, 4.811]	
With costs	0.265 [0.170, 0.360]	2.718 [-5.776, 11.212]

Note: This table presents the estimated tax sheltering cost and the Elasticity of Taxable Income (ETI) for individuals with greater flexibility for bunching, including self-employed individuals, those with trust income, and self-employed individuals with trust income. The table provides estimates with fixed costs, as well as estimates with no costs using the Saez (2010) model. The 95% confidence intervals, computed using bootstrapped standard errors, are shown in brackets. Refer to the notes for Table A.2 for more details.

Table A.5: Robustness of estimates of bunching to the selected parameters

Bin size (\$)	Degree of fitted polynomial	Number of excluded bins at each side	Normalized bunching at AUD 150,000 kink before policy change	Normalized bunching at AUD 150,000 kink after policy change	Normalized bunching at AUD 180,000 kink after policy change
δ	D	$l = u$	b_{10}	b_{11}	b_2
			Panel A: Base estimate		
500	6	6	2.94	0.369	4.047
			Panel B: Robustness to bin size		
250	6	12	4.677	0.322	7.380
1000	6	3	1.446	0.434	2.296
			Panel C: Robustness to degree of fitted polynomial		
500	5	6	2.164	0.599	3.830
500	7	6	2.621	0.429	3.914
			Panel D: Robustness to the number of excluded bins		
500	6	7	2.821	0.715	4.303
500	6	4	2.286	0.463	3.866

Note: This table presents the estimated normalized bunching at the kinks, as defined in Equation (C.5), with respect to the selected parameters. The estimation procedure is explained in detail in Appendix C. The selected parameters include the bin size, degree of the fitted polynomial, and the number of excluded bins around a kink. Note that changing the bin size also adjusts the number of excluded bins accordingly. Bootstrapped 95 percent confidence intervals for these estimates are provided in brackets.

B   Appendix: Figures

Figure B.1: Distribution of taxable income around the top kink by gender

(a) Male (before and after the policy change)

(b) Female (before and after the policy change)
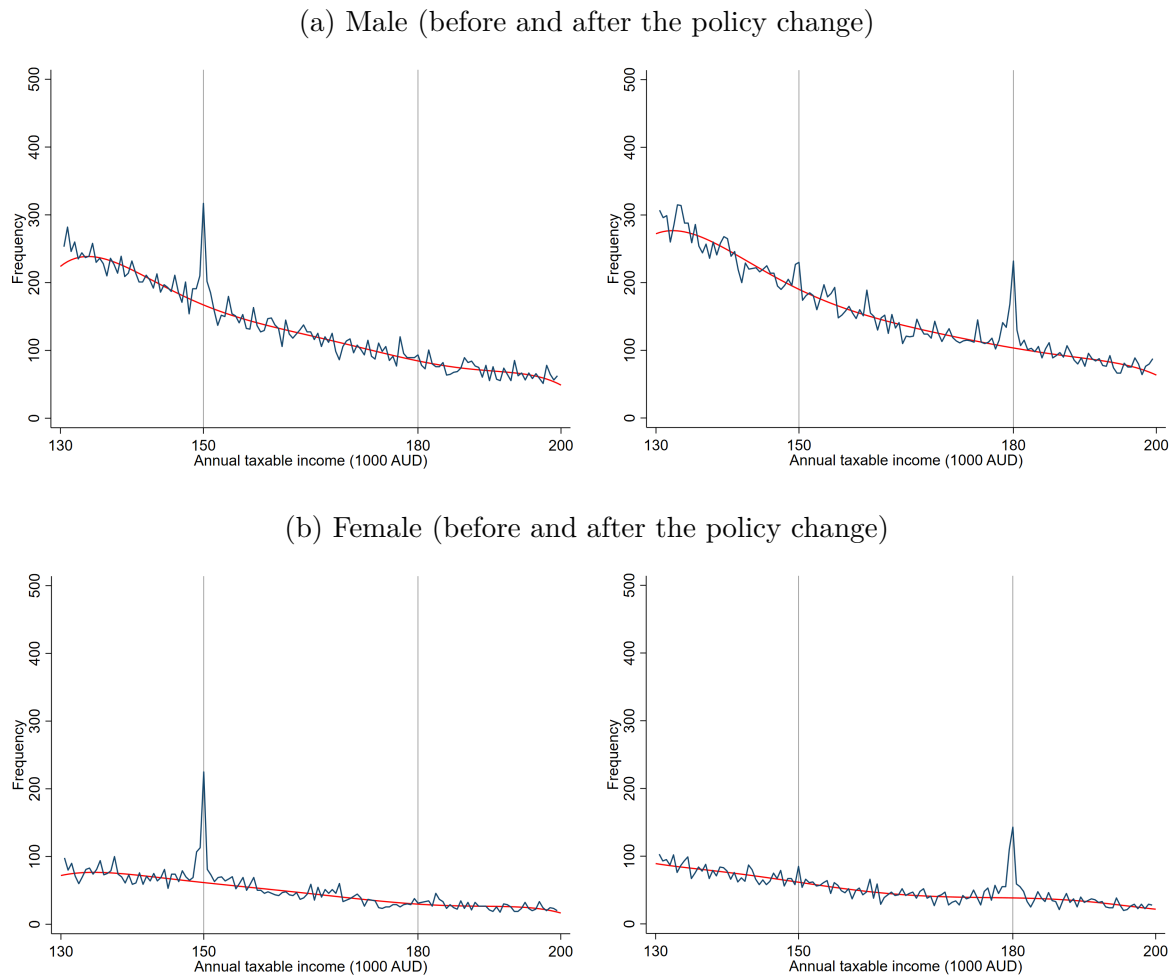
Note: This figure displays the distribution of taxable income within our study sample, categorized by gender one year before and one year after the policy change. For further information, refer to the notes to Figure 2.