

Do earned income tax credits for older workers
prolong labour market participation and boost
earned income? Evidence from Australia's
Mature Age Worker Tax Offset

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August, 2018

Mature Age Worker Tax Offset (MAWTO)

- ▶ The MAWTO was an Australian Government Earned Income Tax Credit (EITC).
- ▶ Intended to incentivise older workers to remain in the labour market.
 - ▶ Offered a non-refundable tax credit of up to \$500 per year.
 - ▶ Available from 1 July 2005 and was repealed on 1 July 2014.
 - ▶ Administered by the ATO through the income tax return system.
 - ▶ Cost over \$4.3 billion over the 10 years it was available.
- ▶ We examine the effect of the MAWTO on labour market participation and earnings.

Results – small effects detected using a D-i-D approach

- ▶ Increased participation by about 0.5 percentage points (pooled results).
 - ▶ Males – larger and statistically significant effect at the introduction (0.6%), and a smaller and not statistically significant effect at the cessation.
 - ▶ Females – smaller and not statistically significant effect at the introduction, and a larger and statistically significant effect at the cessation (0.8%).
- ▶ For women only, it had a small impact on earnings of about 1.5%.
- ▶ The findings are robust to a series of checks.

Previous EITC studies

- ▶ EITCs are commonly used in other countries to encourage labour supply for lower income cohorts, with no qualifying age restrictions.
 - ▶ A novel difference of the MAWTO is that it targeted older workers.
- ▶ There is strong consensus that EITCs have a positive impact on labour supply (the extensive margin effect).
- ▶ There is mixed evidence of an impact of EITCs on individuals who are already in the labour market (the intensive margin effect).
 - ▶ Most studies find little or no evidence of intensive margin effects.

Qualifying for the MAWTO

- ▶ Resident test:
 - ▶ Australian resident for tax purposes
- ▶ Age test:
 - ▶ 55 years or older by the end of a given financial year
- ▶ Work test:
 - ▶ 'Earned income' within the qualifying range
 - ▶ Conceptually, 'earned income' included all income that is a reward for personal effort or skills (as opposed to passive income flows), less any related deductions.

Age test: minimum qualifying age

Table: Age at 30 June of given financial year

Financial year	Born before (birth date)	Minimum age (year of age)
2004-05	1 July 1950	55
2005-06	1 July 1951	55
2006-07	1 July 1952	55
2007-08	1 July 1953	55
2008-09	1 July 1954	55
2009-10	1 July 1955	55
2010-11	1 July 1956	55
2011-12	1 July 1957	55
2012-13	<i>1 July 1957</i>	<i>56</i>
2013-14	<i>1 July 1957</i>	<i>57</i>
2014-15	MAWTO was abolished	

Work test: 'Net income from working'

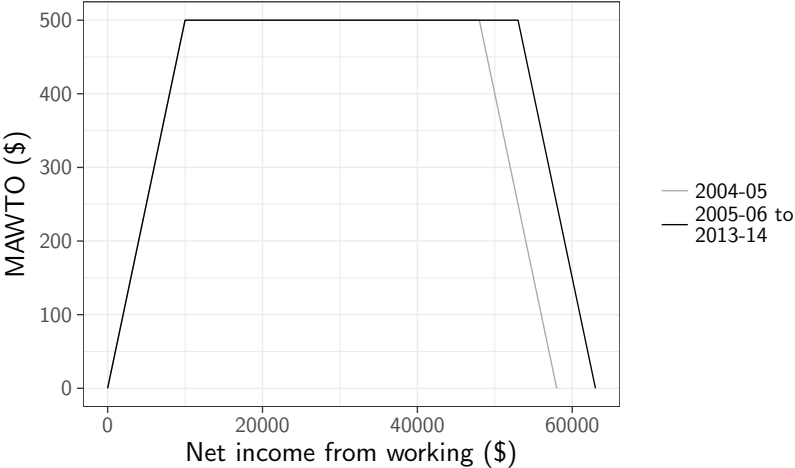
Net income from working	
= Total gross salary and wage payments	(1)
+ Income from allowances, earnings, tips, director's fees etc.	(2)
+ Attributed personal services income	(3)
+ Total reportable fringe benefits (RFB) amounts (if RFB \geq RFB threshold)	(4)
+ Total assessable discount amount ¹	(5)
+ Excess concessional contributions amount for income	(6)
+ (Reportable employer superannuation contributions – Excess concessional contributions amount for income) (if result < 0 then set to 0)	(7)
– Work related car expenses	(8)
– Work related travel expenses	(9)
– Work related clothing expenses	(10)
– Work related self-education expenses	(11)
– Other work related expenses	(12)
– Low value pool deduction ²	(13)
+ Net income from working (supplementary section) ³	(14)

¹ This item relates to the discount amount for Employee Share Schemes.

² Low value pool deductions refer to 'low-cost' and 'low-value' assets used in the course of generating income. These are assets the cost less than \$1,000 which can be depreciated over multiple tax lodgement years.

³ NIFW (supplementary section) refers to business and partnership income that is derived from working.

MAWTO phase-in, phase-out design



Data construction

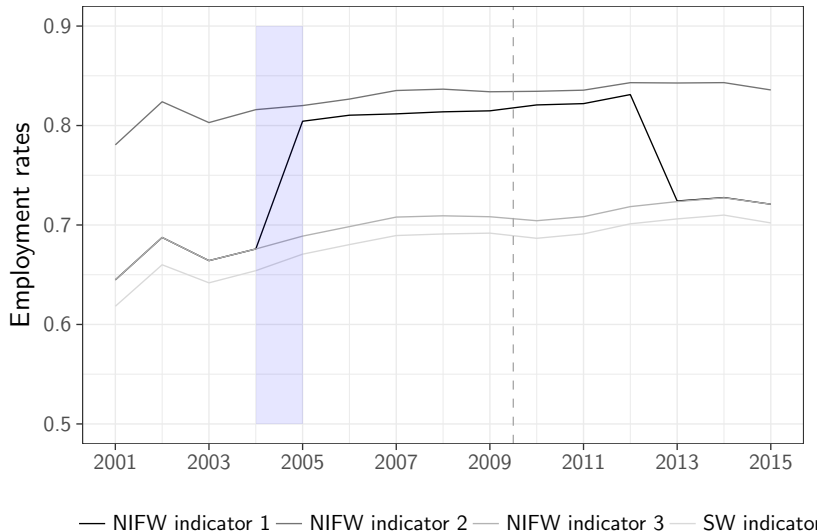
Table: Deriving labour supply rates

	Worked	Did not work
Lodged	Income tax return data	Income tax return data
Did not lodge	PAYG payment summary data (for salary & wage payments only)	Residual population calculated from ABS estimates

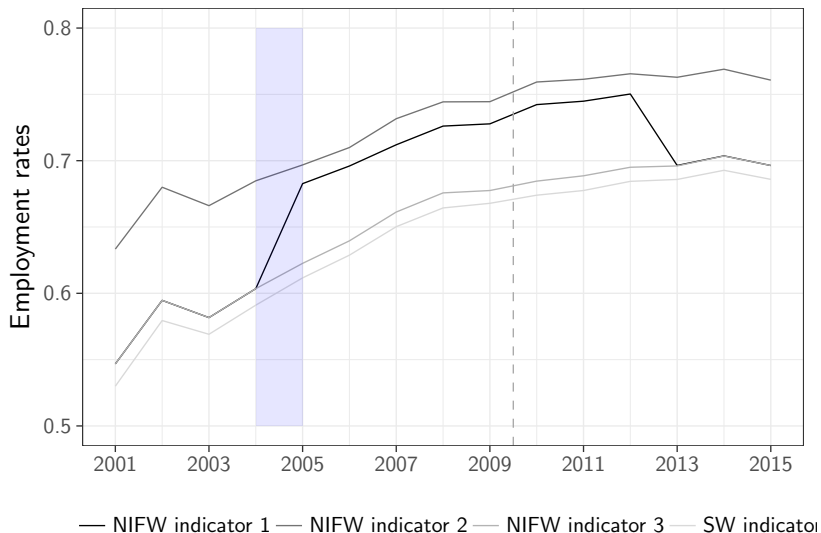
Derived participation measures

- ▶ NIFW indicator 1 – Official ATO measure of 'earned income'
- ▶ NIFW indicator 2 – Recalculation of the ATO's official measure irrespective of income years that the MAWTO existed
- ▶ NIFW indicator 3 – Official measure excluding the business & partnership income
- ▶ Salary & wages indicator – Simple definition provides an indicator for the most common component of the official NIFW definition

Derived employment rates, males aged 55 years



Derived employment rates, females aged 55 years



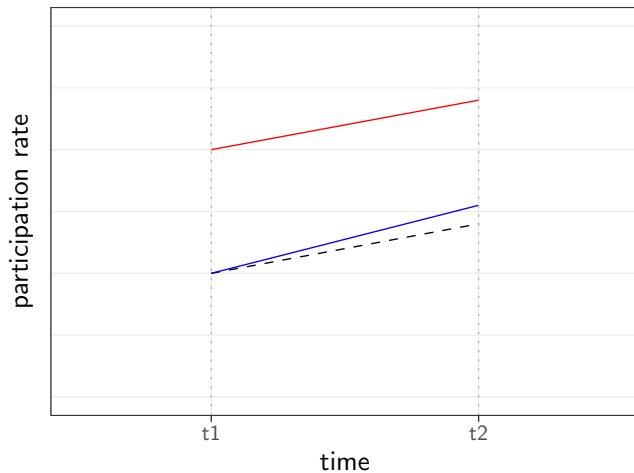
Difference-in-differences

- ▶ Statistical technique that mimics an experimental research design. Commonly used in the social sciences.
- ▶ Examines the differential effect of an intervention on a 'treatment' group versus a 'control' group.
- ▶ Key assumptions:
 - ▶ Parallel trends
 - ▶ Only one 'treatment' in the period of interest
 - ▶ The 'treatment' does not affect the control group
 - ▶ Regular OLS assumptions also apply

D-i-D identification

- ▶ Examine effects at the MAWTO's introduction, along with the effect of repealing the MAWTO.
- ▶ Examine males and female separately (although, we also examined pooled results).
- ▶ Exploit year and age cut-offs by comparing the labour supply outcomes of:
 - ▶ 54 (control) and **55 (treatment)** years olds in 2003-04 (control) and **2004-05 (treatment)**.
- ▶ We repeat this analysis at the cessation of the policy:
 - ▶ 56 (control) and **57 (treatment)** years olds in **2013-14 (treatment)** and 2014-15 (control).
- ▶ We repeat this analysis for the corresponding 'earned income' measures.

Difference-in-differences



— control (54s) - - parallel trend — treatment (55s)

Difference-in-differences

Estimate separately for males and females:

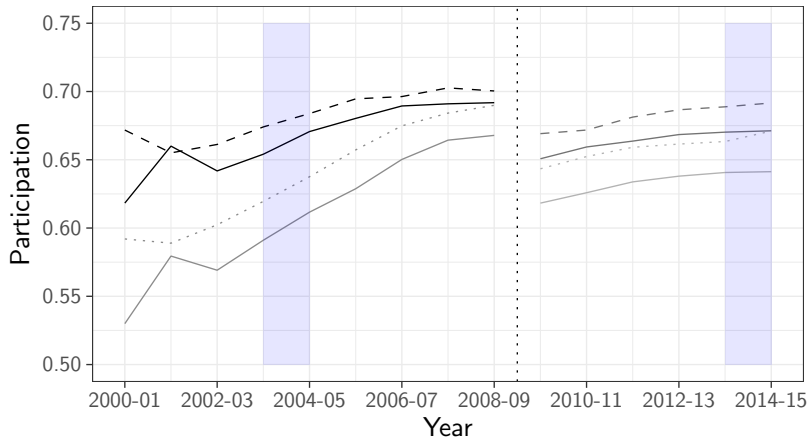
$$participation_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 D_{it} + \beta_3 (T_{it} \cdot D_{it}) + \epsilon_{it} \quad (1)$$

$$\ln(income_{it}) = \beta_0 + \beta_1 T_{it} + \beta_2 D_{it} + \beta_3 (T_{it} \cdot D_{it}) + \beta_4 negative_{it} + \beta_5 Z_{it} + \epsilon_{it} \quad (2)$$

Where:

- ▶ T = income year dummy if MAWTO was available
- ▶ D = age at 30 June dummy if individual met qualifying age
- ▶ negative = binary indicator for negative income
- ▶ Z = controls for additional characteristics (reported spouse, used tax agent to prepare return, and geographic remoteness indicators)

Parallel trends assumption



-- 54M (control) -- 56M (control) ... 54F (control) ... 56F (control)
— 55M (treatment) — 57M (treatment) — 55F (treatment) — 57F (treatment)

Participation results

	Males		Females	
<i>ITR, PAYG and ABS population estimates</i>				
2003-04 vs 2004-05				
<i>54 vs 55</i>				
NIFW 2 D-i-D	-0.0009	[0.0021]	-0.0018	[0.0026]
NIFW 3 D-i-D	0.0059**	[0.0026]	0.0023	[0.0027]
S&W D-i-D	0.0068***	[0.0026]	0.0025	[0.0027]
2013-14 vs 2014-15				
<i>56 vs 57</i>				
NIFW 2 D-i-D	0.0030	[0.0020]	0.0093***	[0.0023]
NIFW 3 D-i-D	0.0017	[0.0024]	0.0076***	[0.0025]
S&W D-i-D	0.0018	[0.0025]	0.0070***	[0.0025]

Notes: Coefficients are marginal probabilities from a linear OLS model. Robust standard errors are presented in brackets. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels.

Earned income results

	Males		Females	
<i>ITR and PAYG data</i>				
	2003-04 vs 2004-05			
<i>54 vs 55</i>				
NIFW 2 D-i-D	0.0019	[0.0070]	-0.0022	[0.0080]
NIFW 3 D-i-D	0.0065	[0.0071]	0.0027	[0.0051]
S&W D-i-D	0.0064	[0.0071]	-0.0032	[0.0079]
	2013-14 vs 2014-15			
<i>56 vs 57</i>				
NIFW 2 D-i-D	0.0009	[0.0069]	0.0083	[0.0074]
NIFW 3 D-i-D	-0.0026	[0.0067]	0.0136**	[0.0068]
S&W D-i-D	0.0040	[0.0067]	0.0154**	[0.0067]

Notes: Coefficients are marginal probabilities from a linear OLS model. Robust standard errors are presented in brackets. ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.1 levels.

What explains the size of the response?

- ▶ A \$500 offset may not have been large enough relative to other stage-of-life factors (e.g. health status of individuals and the desire for more leisure time).
- ▶ Targeted older workers who are more likely to have accumulated wealth which may reduce the attractiveness of a modest tax credit.
- ▶ Non-refundable nature of the offset meant some qualifying individuals could not use it.
- ▶ The definition of 'earned income' was complicated, making it hard for individuals to optimise their behaviour.
- ▶ Studies have cited evidence that EITC recipients are often unaware of the program, or do not take it into consideration when making marginal earnings decisions.

Conclusion

- ▶ Detect small positive effects of the MAWTO using Australian Government administrative data.
 - ▶ Most MAWTO recipients would have remained in the workforce irrespective of receiving the offset.
- ▶ Overall, the results suggest that labour market participation increase around 0.5 percentage points.
 - ▶ Back-of-the-envelope calculations indicate that the average cost for each person induced to work longer was \$80,000.
- ▶ Results suggest targeted tax credits for older workers are an expensive and relatively ineffective way to increase participation.
- ▶ Working paper:
<https://taxpolicy.crawford.anu.edu.au/publication>