

# Taxation, work and gender equality in Ireland

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# Introduction

- Removing barriers to work becoming an important policy objective for most governments
- Population ageing, falling fertility & stagnating labour force participation are threatening fiscal budgets across the EU (Dolls et al, 2017)
- In Ireland, labour force participation rate of women is 64% compared to 77% for men
- Increasing female labour force participation is one policy route to increasing labour supply
  - Can also increase well-being and GDP, tackle the gender wage and pension gap, reduce female poverty and victimisation (OECD, 2012 ; Bowlus & Seitz, 2006; Findlay & Wright, 1996)

# Introduction

Barriers or disincentives to work can take two forms

- Low payoff to work
  - In-work income vs. out-of-work income
- High fixed costs of going to work
  - Childcare
  - Commuting/relocating
  - Care of elderly relatives
- The tax and welfare system can affect both but the focus of this paper is the payoff to work

# Introduction

- Joint taxation allows the primary earner in a couple to use the allowances and bands of the lower or secondary earner
  - increases the Marginal Effective Tax Rate (METR) of the secondary earner (usually the woman)
- Large disincentive effects of joint taxation on hours of work of married women in the US & 17 EU countries (Bick & Fuchs-Schündeln , 2017) .
- The trend in recent decades in the EU has been a move towards individual taxation.

# Introduction

- Hypothetical switches from joint to individual taxation have been evaluated for Ireland (Callan et al, 2009), France (Kabátek et al, 2014), Germany (Decoster and Haan, 2011) & Luxembourg (Doorley, 2016)
  - the participation rate of married women could increase by 1-9 ppt.
- The effect of actual policy changes has also been evaluated for the UK (Roantree, 2018); the US (Lalumia, 2008), Sweden (Selin, 2014) and Canada (Crossley and Jeon, 2007)
  - similar findings.

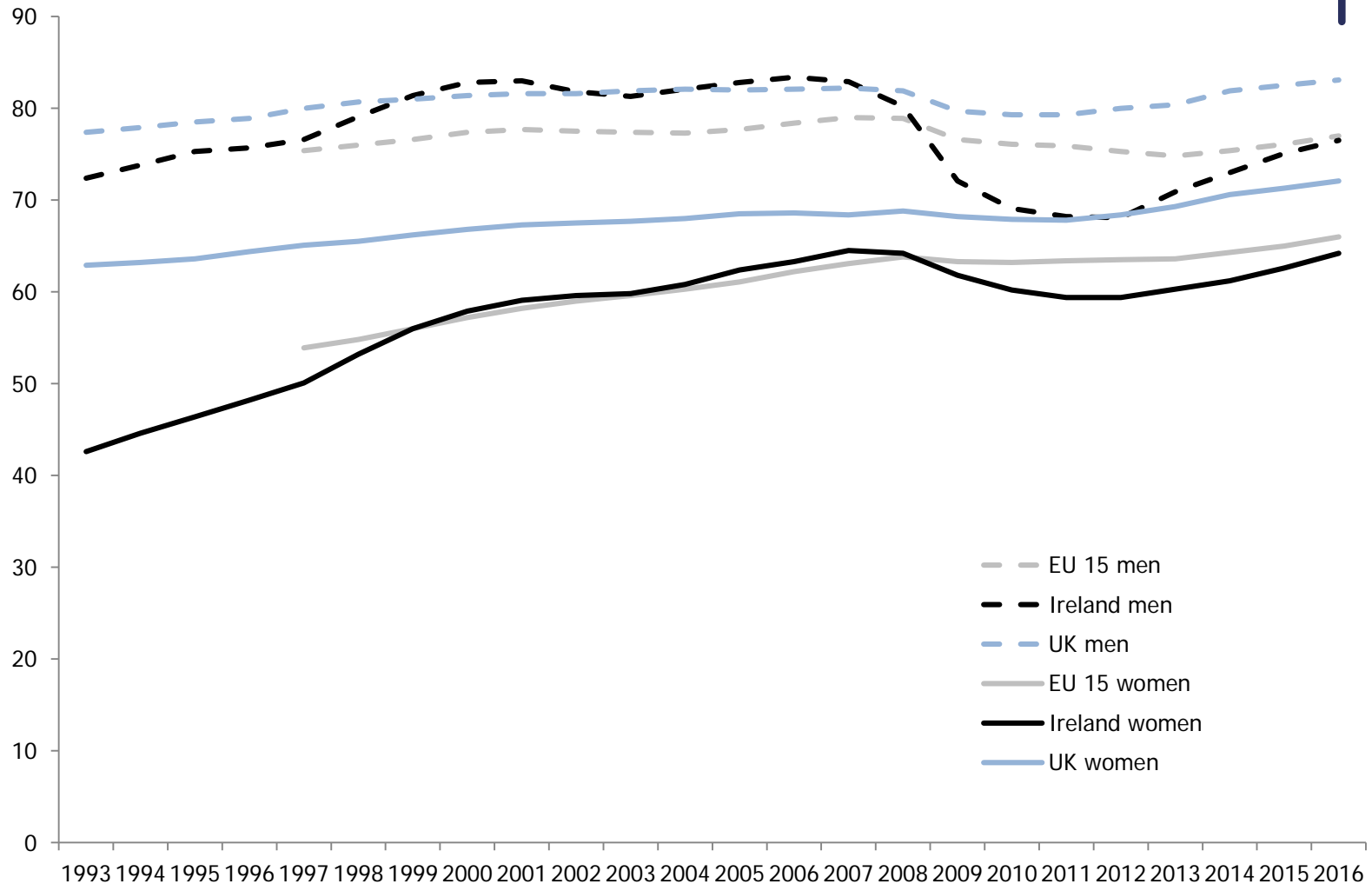
# This paper

- This paper estimates the effect of the partial individualisation of the income tax system in 2000 on the labour supply of married women
  - Did the policy achieve its aim of increasing the labour supply of spouses?
- The results of this will be useful in informing policy in the future
  - Potential for any further extension of individualisation should also take fixed cost of work into account
  - Effects of individualisation on other important outcomes such as the distribution of income left for future work



# Background

# Employment rate of 20-64 year olds





# Barriers to secondary work in Ireland



- Historical context (Russell et al, 2017)
  - Marriage bar of 1932, repealed in 1973
  - Marriage bar in UK lifted in 1944, female employment encouraged in the context of WWII
  - EU driven equality legislation (Anti-Discrimination Pay Act 1974 and Employment Equality Act 1998)
- Participation Tax Rate (PTR) and Marginal Effective Tax Rate (METR) of secondary earners high by European standards, particularly for women with children (Rastrigina & Verashchagina, 2015)

# Partial individualisation of income tax 2000-2002



- 1980-1999: system of income splitting, whereby married couples could reduce their tax bill compared to cohabiting couples by sharing allowances and rate bands between partners
- December 1999: Minister for Finance announced the “radical change of moving to individualisation of the standard rate band over this and the next two Budgets.”
  - Considerable opposition to this reform which was thought to penalise women who chose to stay at home
  - Partial reform occurred and this “hybrid” system is still in place

# METR of secondary earner

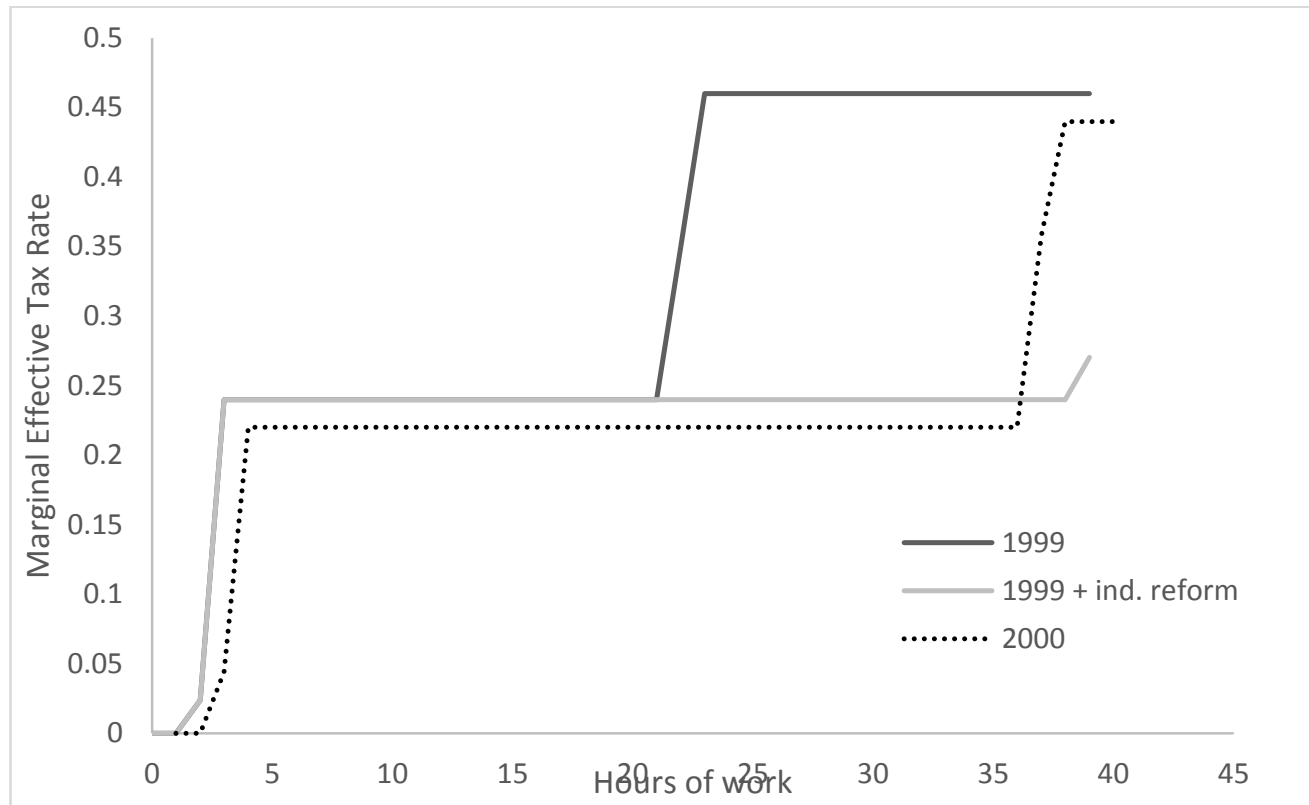


Figure 1 Marginal effective tax rate of secondary earner in a simplified tax-benefit system in Ireland in 1999; in a counterfactual 1999 system with partial individualisation of the standard rate band and in 2000. Primary earner works 40 hours per week and earns the year-specific median male hourly wage. Secondary earner works 0-40 hours per week and earns the year-specific median female hourly wage.



# Data and Method

# Data

- Living in Ireland survey data 1995-2001 (European Community Household Panel)
  - 5 years of pre-reform data and two years of post-reform data
  - Sample of 20-60 year olds.
- Outcomes of interest
  - Employment
  - Hours of work
  - Hours of unpaid childcare

# Method

- Difference-in-Differences framework compares change in outcomes for those affected by the reform (treatment group) to change in outcomes for those unaffected by reform (control group)

$$\begin{aligned} Y_{it} &= \beta_1 + \beta_2 \text{Treat}_i + \beta_3 \text{Post}_t \\ &+ \beta_4 (\text{Treat} * \text{Post})_{it} + \delta X_i + \gamma T_t + \varepsilon \end{aligned}$$

# Method

- Treatment group is married women
  - Most secondary earners are women
- Control group is
  - single women (unaffected by policy change) or
  - married men (affected by policy change but unlikely to respond)
- Alternative treatment (secondary earners) and control group (primary earners) doesn't change conclusions
- Assumptions
  - Pre-treatment trends are similar for treatment and control group
  - No other policy change which affects treatment and control group differentially

# Pre-treatment trends

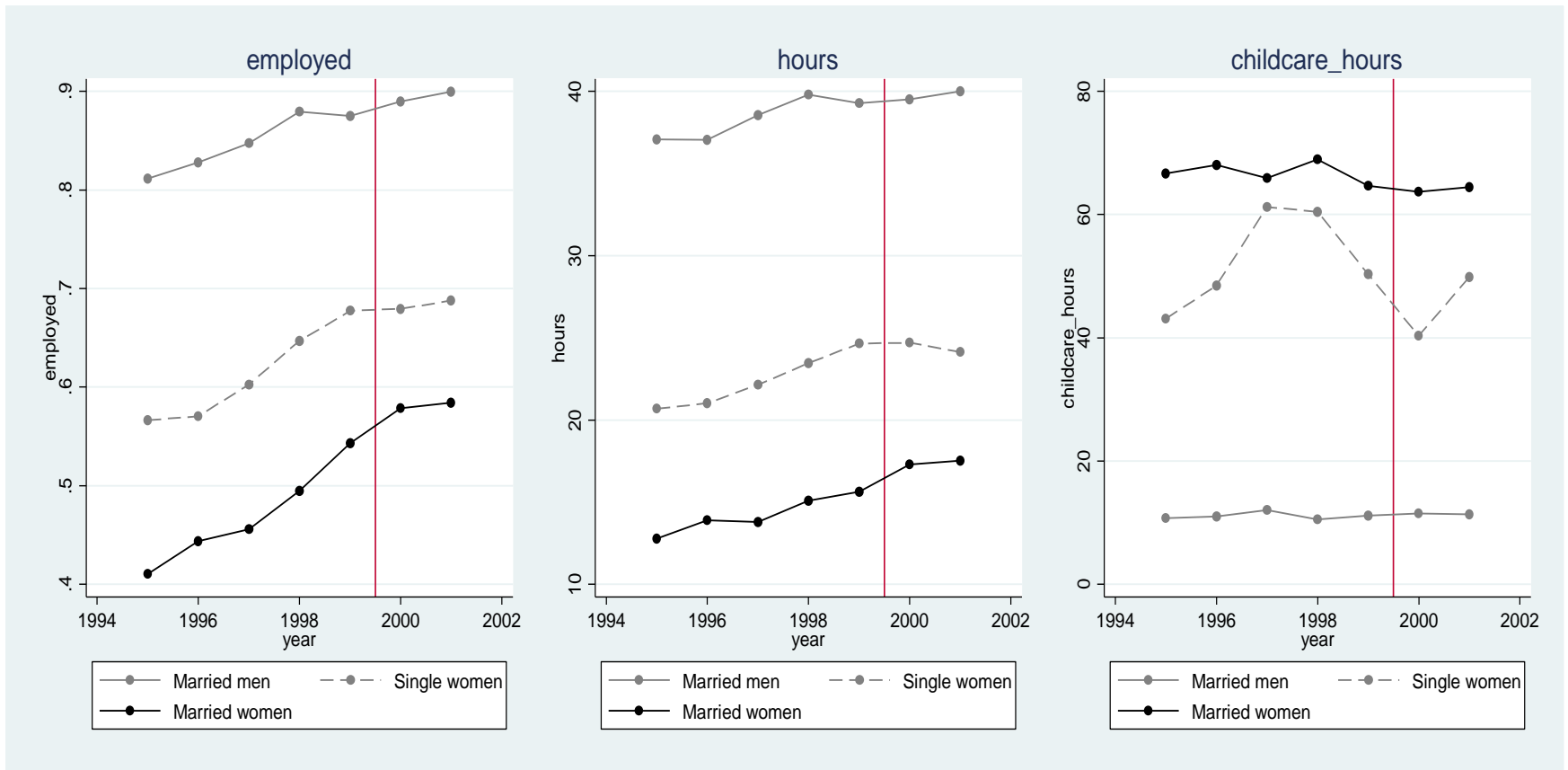


Figure: The evolution of employment, hours of work and hours of unpaid childcare (LII data)



# Difference-in-Differences results: employment and hours of work



	Control group = single women.			Control group = married men		
<b>Employment</b>						
Treatment effect	0.04 (0.03)	0.07 *** (0.03)	0.06 *** (0.03)	0.07 *** (0.02)	0.06 *** (0.02)	0.06 *** (0.02)
Controls	No	Yes	Yes	No	Yes	Yes
Time trend	No	No	Yes	No	No	Yes
<i>R squared</i>	0.025	0.1853	0.1886	0.1537	0.2563	0.2591
<i>N</i>	17,448	17,448	17,448	22,231	22,231	22,231
<b>Hours of work</b>						
Treatment effect	1.26 (1.07)	2.11 ** (0.96)	2.07 ** (0.96)	1.79 ** (0.79)	1.77 ** (0.76)	1.77 ** (0.76)
Controls	No	Yes	Yes	No	Yes	Yes
Time trend	No	No	Yes	No	No	Yes
<i>R squared</i>	0.0475	0.2234	0.2247	0.2932	0.3568	0.3581
<i>N</i>	17,448	17,448	17,448	22,231	22,231	22,231

Sample is aged between 20-60. The treatment effect is equivalent to  $\beta?$  in equation 1. Marital status is self-defined. Extra controls include age, age squared, post-secondary qualification, no. of children, any children under 12 and predicted wage. The time trend is a series of year dummies.

# Difference-in-Differences results: childcare hours

	(1)	(2)	(3)
<i>Treatment group = married women with children. Control group = married men with children.</i>			
<b>Hours of childcare</b>			
Treatment effect	-3.11 (1.98)	-3.23 * (1.87)	-3.24 * (1.87)
Controls	No	Yes	Yes
Time trend	No	No	Yes
<i>R squared</i>	0.3578	0.4285	0.4288
<i>N</i>	15,122	15,122	15,122

Sample is aged between 20-60. The treatment effect is equivalent to  $\beta$ ? in equation 1. Marital status is self-defined. Extra controls include age, age squared, post-secondary qualification, no. of children, any children under 12 and predicted wage. The time trend is a series of year dummies.



# Sensitivity analysis

# Other policy changes

- Changes in tax rates & allowances
  - Very small effects on METR and PTR
- Expansion of Family Income Supplement in 2000
  - No effect on labour supply of married men or women (Bargain & Doorley, 2011)
- Introduction of National Minimum Wage of £4.40 per hour
  - Negligible employment effects (O'Neill et al, 2006)
  - Restrict sample to those with predicted wages well above the NMW (> £5.50) – no change to conclusions



# Conclusion

# Summary

- The partial individualisation of the income tax system in 2000 increased the employment rate of married women by 5-6 percentage points and the weekly hours of work by 2 per week.
  - Comparable to Callan et al (2009) for Ireland; Crossley & Jeon (2007) for Canada and Selin (2014) for Sweden
- It also reduced the number of hours of unpaid childcare being performed by married women with children (by 3 per week)
- Effective at reaching its aim
  - to increase the incentives for spouses to join the labour force

# Future policy directions

- Potential for any further individualisation of the taxation system needs to consider
  - Implications for income distribution
  - Cost
  - Paths to revenue neutrality
- Addressing fixed costs of work as a complementary reform likely to be necessary
  - Child & elderly care
  - Commuting/housing costs
  - etc



**Thanks!**

**Questions?**

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# Appendix

# Selected labour market statistics



	IE	UK	EU
Average weekly hours of work	32	32	34
Unadjusted gender pay gap	14	21	17
Adjusted gender pay gap	17	12	-
Marginal Effective Tax Rate (METR) of secondary earners with young children	43	33	33
Female/male income ratio of elderly	0.84	0.84	0.84
Labour supply elasticities of married women	0.40	0.11	0.27

METR for 2012 taken from Rastrigina & Verashchagina (2015). Labour supply elasticities for 1998-2005 period from (Bargain et al, 2013). All other statistics for 2016 from Eurostat.

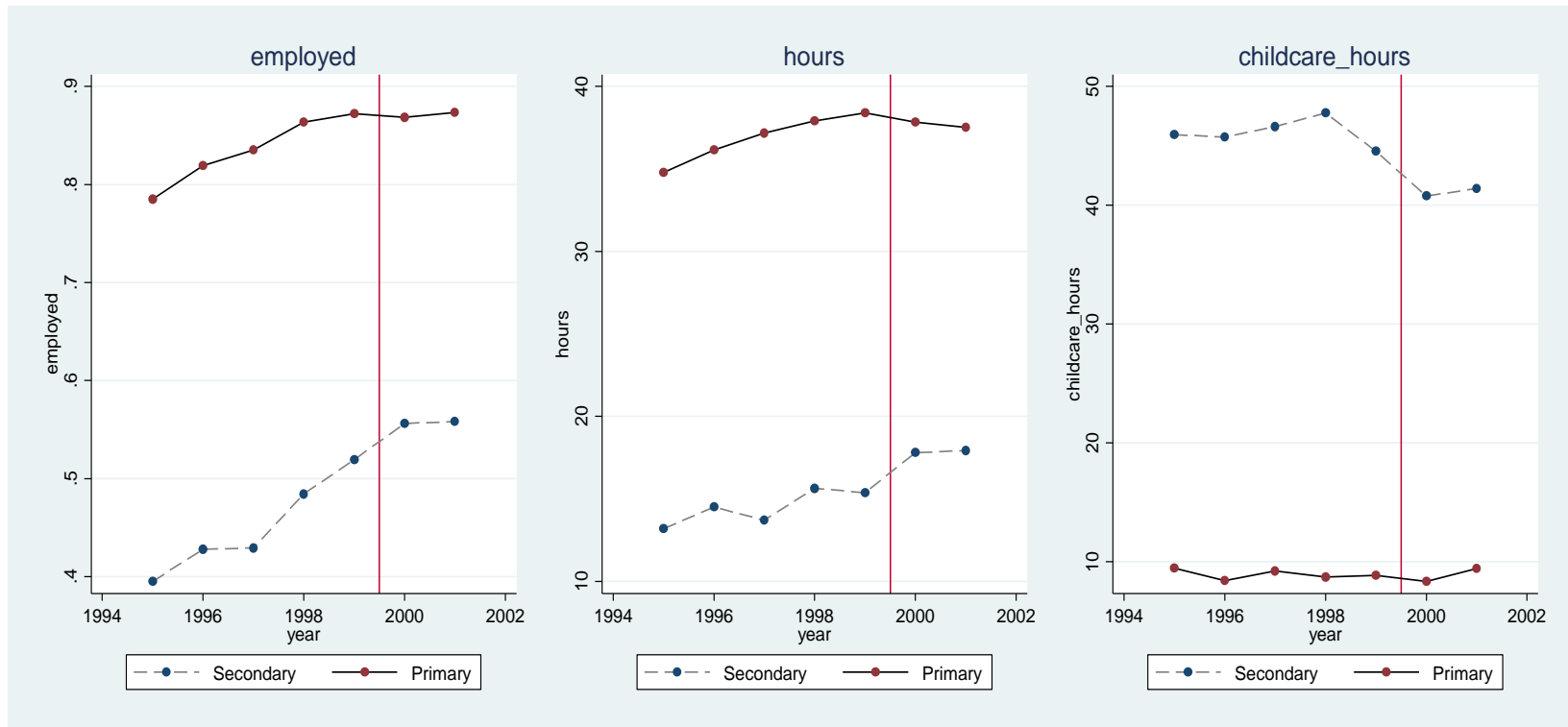
# Summary statistics



<b>Women</b>	Women			Men		
	Before	After	Difference	Before	After	Difference
Employed	0.50	0.58	0.08 ***	0.65	0.66	0.01
Weekly hours of work (incl. zeros)	16.17	18.49	2.32 ***	29.11	29.06	-0.05
Weekly hours of childcare (incl. zeros)	35.18	30.72	-4.46 ***	3.74	3.72	-0.02
Part-time employment	0.18	0.21	0.03 ***	0.05	0.04	-0.01 ***
Full-time employment	0.33	0.37	0.04 ***	0.60	0.62	0.02 ***
Age	38.66	39.71	1.05 ***	36.62	37.52	0.9 ***
Post-secondary qualification	0.32	0.35	0.03 ***	0.26	0.28	0.02 ***
No. of children	1.21	1.04	-0.17 ***	1.03	0.87	-0.16 ***
Children under 12 (0/1)	0.43	0.39	-0.04 ***	0.35	0.31	-0.04 ***
Hourly wage of workers	7.61	8.58	0.97 ***	9.26	10.49	1.23 ***
Predicted hourly wage for all	7.13	8.17	1.04 ***	9.07	10.35	1.28 ***
Married	0.68	0.67	-0.01	0.60	0.60	0
Primary earner (married individuals)	0.04	0.03	-0.01 ***	0.73	0.73	0
Secondary earner (married individuals)	0.69	0.67	-0.02 ***	0.03	0.03	0
<i>Observations</i>	13009	5424		15385	6324	

Sample is aged 20-60 and statistics are weighted using individual weights. The before period is years 1995-1999. The After period is years 2000-2001. Statistical significance is indicated by \* p<0.1 \*\* p<0.05 \*\*\* p<0.01"

# Alternative treatment & control groups



# Alternative treatment & control groups



	(1)	(2)	(3)
<i>Treatment group = secondary earners. Control group = primary earners.</i>			
<b>Employment</b>			
Treatment effect	0.06 *** (0.02)	0.06 *** (0.02)	0.06 *** (0.02)
Controls	No	Yes	Yes
Time trend	No	No	Yes
<i>R squared</i>	0.1575	0.2663	0.2689
<i>N</i>	15,484	15,484	15,484
<b>Hours of work</b>			
Treatment effect	1.91 * (1.01)	2.02 ** (0.94)	2.02 ** (0.94)
Controls	No	Yes	Yes
Time trend	No	No	Yes
<i>R squared</i>	0.2777	0.3616	0.3625
<i>N</i>	15,484	15,484	15,484
<b>Childcare hours</b>			
Treatment effect	-4.00 ** (2.03)	-4.04 ** (1.72)	-4.05 ** (1.72)
Controls	No	Yes	Yes
Time trend	No	No	Yes
<i>R squared</i>	0.214	0.4244	0.4249
<i>N</i>	15,484	15,484	15,484

Sample is aged between 20-60. The treatment effect is equivalent to  $\beta_7$  in equation 1. Marital status is self-defined. Extra controls include age, age2 squared, post-secondary qualification, no. of children, any children under 12 and predicted wage. The time trend is a series of year dummies.

# Partial individualisation of income tax 2000-2002



	1999	2000	2001	2002
Standard tax rate	24%	22%	20%	20%
Top tax rate	46%	44%	42%	42%
Standard rate band for singles	17,800	21,600	25,395	28,000
Standard rate band for one earner couples	35,600	35,600	36,822	37,000
Standard rate band for two earner couples	35,600	43,200	50,790	56,000
Personal tax credit (standard rate) -transferable	1,280	1,313	1,397	1,520
Employee tax credit (standard rate) - non-transferable	305	279	508	660

100%  
transferability of  
standard rate  
band

32%  
transferability  
of standard  
rate band

Source: www.revenue.ie. Monetary values in €

# PTR of secondary earner

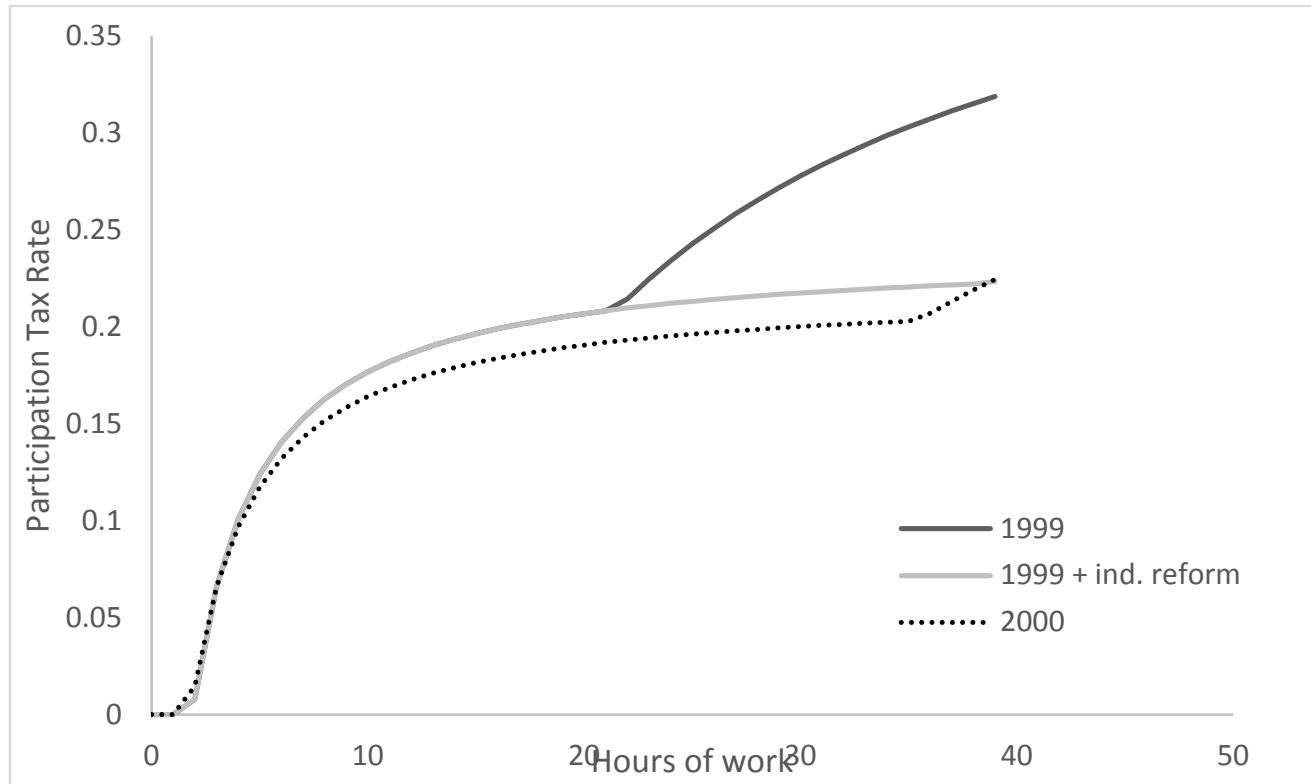


Figure 2 Participation tax rate of secondary earner in a simplified tax-benefit system in Ireland in 1999; in a counterfactual 1999 system with partial individualisation of the standard rate band and in 2000. Primary earner works 40 hours per week and earns the year-specific median male hourly wage. Secondary earner works 0-40 hours per week and earns the year-specific median female hourly wage.

# DiD results for those above NMW

	Control group = single women.			Control group = married men		
<b>Employment</b>						
Treatment effect	0.08 **	0.06 **	0.06 *	0.04 **	0.05 ***	0.05 ***
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Controls	No	Yes	Yes	No	Yes	Yes
Time trend	No	No	Yes	No	No	Yes
<i>R squared</i>	0.04	0.18	0.18	0.14	0.23	0.24
<i>N</i>	13497	13497	13497	20793	20793	20793
<b>Hours of work</b>						
Treatment effect	2.88 **	2.29 **	2.18 *	1.06	1.46 *	1.48 **
	(1.25)	(1.16)	(1.16)	(0.81)	(0.77)	(0.77)
Controls	No	Yes	Yes	No	Yes	Yes
Time trend	No	No	Yes	No	No	Yes
<i>R squared</i>	0.08	0.23	0.23	0.28	0.34	0.34
<i>N</i>	13497	13497	13497	20793	20793	20793
<b>Hours of childcare</b>						
Treatment effect				-2.58	-3.26 *	-3.28 *
				(2.02)	(1.91)	(1.91)
Controls				No	Yes	Yes
Time trend				No	No	Yes
<i>R squared</i>				0.36	0.43	0.43
<i>N</i>				14274	14274	14274

Sample is aged between 20-60 with a predicted hourly wage in excess of £5.50 in 2000 prices. The treatment effect is equivalent to  $\beta?$  in equation 1. Marital status is self-defined. Extra controls include age, age squared, post-secondary qualification, no. of children, any children under 12 and predicted wage. The time trend is a series of year dummies. The treatment group for the childcare hours model is married women with children and the control group is married men with children