Employment Insurance Impact on Spousal Labour Supply

Stéphanie Lluis and Brian McCall

University of Waterloo and University of Michigan

CRDCN Conference 2018

Motivation

- Increasing importance of family and collective decisions on consumption, savings and labour supply
  - Spousal earnings and labour supply
    - help smooth consumption (Heathcote, Storelestten & Violante, 2014)
    - respond to shock and public policy (Attanasio & all 2005; Olsson & all, 2015; Autor & all, 2017)
    - is affected by joint income tax (Eissa, 1995, 1996; Gelber, 2014; Bick & Schundeln, 2017)
- In this paper we study labour supply response to a change in spouse's labour force status

Added Worker Effect

- The added worker effect (AWE) has been studied substantially but mixed findings
  - In the US: Long 1953; Lundberg, 1985; Maloney, 1987, 1991; Stephens Jr, 2002; Starr, 2014
  - Elsewhere: Parker & Skoufias, 2004; Fernandes & deFelicio, 2005; Kohara, 2010; Bredtmann & all, 2017 (Mexico, Brazil, Japan and Europe)
  - Canada: Morrissette & Ostrovsky (2008)
- Difficult to identify AWE
  - unobserved taste for leisure, timing of measurement (short- versus long-run) and information on job loss
  - AWE may cancel out or reverse if unemployment is insured by unemployment insurance benefits
    - Crowding out of unemployment insurance (Gruber and Cullen, 2000; Guler & Taskin, 2013)

What We Do

- Exploit the household and longitudinal aspect of the Canadian LFS data (6 month panel and rotation design)
  - comparing labor supply shortly before and after job loss & controlling for unobserved taste for leisure to identify AWE
- Exploit Canadian EI pilot initiatives over period 2004-2009
  - EW pilot aimed at increasing generosity of EI in terms of increased benefits duration (5 extra weeks of benefits)
  - All pilots inmplemented in a subset of regions allowing a quasi-experimental setting and difference-in-difference approach
- 1) we estimate the impact of spouses' change in labour force status on hours worked and LFP to identify AWE effect in Canada
- 2) we estimate whether the increased generosity of the Extended Weeks pilot (EW) created a crowd-out (COE) effect

Monthly Longitudinal Household Survey

- Monthly household survey from 2000-2009
  - Each member of the household is asked a common set of demographic and labour market questions
  - Possibility to link the same individuals/households over up to 6 months
  - Marital status, labour force status and all demographic info are asked every month
- Labour force status question & reasons for job loss & tenure in past job
  - Allows us to distinguish involuntary unemployment from voluntary quits
    - EI eligibility: involuntary job loss in the previous year & tenure in job lost of at least 12 months
    - implies eligible individuals do not qualify for Best 14 and NERE pilots
    - Criteria for EI non eligibility: Employer dismissal or last job held for less than 3 months
- Information on the EI economic regions (following ESDC definitions)

Identification of AWE & COE

- Select age 35-50 for each spouse to minimize education and retirement effects on labour supply
- Select couples such that spouse is employed in the 1^{st} month in the sample
  - 3.1 M individuals (1.57M husbands and 1.59M wives)
  - 31.6% of the couples had one spouse experience a change out of employment in the 5 months that followed

$$y_{it} = cons + \beta_1 SP\_LFS1t + \ldots + \beta_4 SP\_LFS_{4t} + X_{it} + SP\_X_{it} + \alpha_i + \mu_t + \varepsilon_{it}$$

Where y_{it} is hours of work (including zeros for those switching out of employment after the first month in the sample) or an indicator of labour force participation for an analysis of the labour supply at the extensive margin.

  - SP_LFS_{0t}: the spouse is employed at work (base category each time t), SP_LFS_{1t}: the spouse is employed but absent from work (sickness, holiday, caring for family member), SP_LFS_{2t} or SP_LFS_{3t}: the spouse is unemployed and eligible or ineligible to receive benefits, SP_LFS_{4t}: the spouse is out of the labour force
  - We control for individual time invariant fixed-effects to capture unobserved joint taste for leisure

Table 2: Fixed-Effect Estimations of AWE of Spouse's Job Loss

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[2]		LFP	Actual Hours Worked[2]		LFP
Main Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
Spouse's Labour Force Status: (base category is Employed at work)						
Employed, absent from work	-0.762***	-0.807***	-0.001	-1.366***	-1.449***	-0.002**
	(0.089)	(0.094)	(0.001)	(0.098)	(0.101)	(0.001)
Unemployed	0.631**	0.705***	0.002	0.142	0.205	-0.001
	(0.246)	(0.256)	(0.004)	(0.281)	(0.290)	(0.003)
Out of the Labour Force	-0.116	-0.077	-0.048***	-0.035	-0.105	-0.021***
	(0.320)	(0.323)	(0.006)	(0.276)	(0.285)	(0.003)
Constant	23.688***	25.540***	0.858***	46.723***	44.904***	0.932***
	(3.966)	(4.089)	(0.062)	(4.621)	(4.784)	(0.050)

Notes:
1- Also includes EI region-specific unemployment rates, time dummies, usual hours worked by the spouse, age dummies for both spouses and a dummy for wh
the couple has children. Clustered standard errors in parenthesis (55 clusters). * $p < .10$, ** $p < .05$, *** $p < .01$
2- Weekly actual hours worked in the reference week (third week of the month).

Table 3: Fixed-Effect Estimations of AWE of Spouse's Job Loss Distinguishing EI Eligibility Status

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[2]		LFP	Actual Hours Worked[2]		LFP
Main Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
Spouse's Labour Force Status: (base category is Employed at work)						
Employed, absent from work	-0.745***	-0.803***	-0.001	-1.332***	-1.419***	-0.002**
	(0.090)	(0.094)	(0.001)	(0.098)	(0.101)	(0.001)
Unemployed, EI eligible	0.343	0.345	-0.005	0.419	0.534	-0.004
	(0.310)	(0.324)	(0.005)	(0.351)	(0.361)	(0.003)
Unemployed, Not eligible	1.073**	1.038**	0.011*	0.343	0.192	-0.002
	(0.431)	(0.451)	(0.006)	(0.676)	(0.700)	(0.009)
Out of the Labour Force	-0.283	-0.242	-0.047***	0.015	-0.050	-0.021***
	(0.312)	(0.316)	(0.006)	(0.274)	(0.284)	(0.003)
Constant	20.196***	21.765***	0.829***	47.037***	45.470***	0.964***
	(4.049)	(4.232)	(0.064)	(4.715)	(4.857)	(0.042)
F-test: coef_EI = coef_Not eligible	2.461	1.996	3.700	0.011	0.214	0.041
(p-value)	0.117	0.158	0.054	0.916	0.643	0.840

Notes:
1- Also includes EI region-specific unemployment rates, time dummies, usual hours worked by the spouse, age dummies for both spouses and a dummy for wh the couple has children. Clustered standard errors in parenthesis (55 clusters). * $p < .10$, ** $p < .05$, *** $p < .01$
2- Weekly actual hours worked in the reference week (third week of the month).

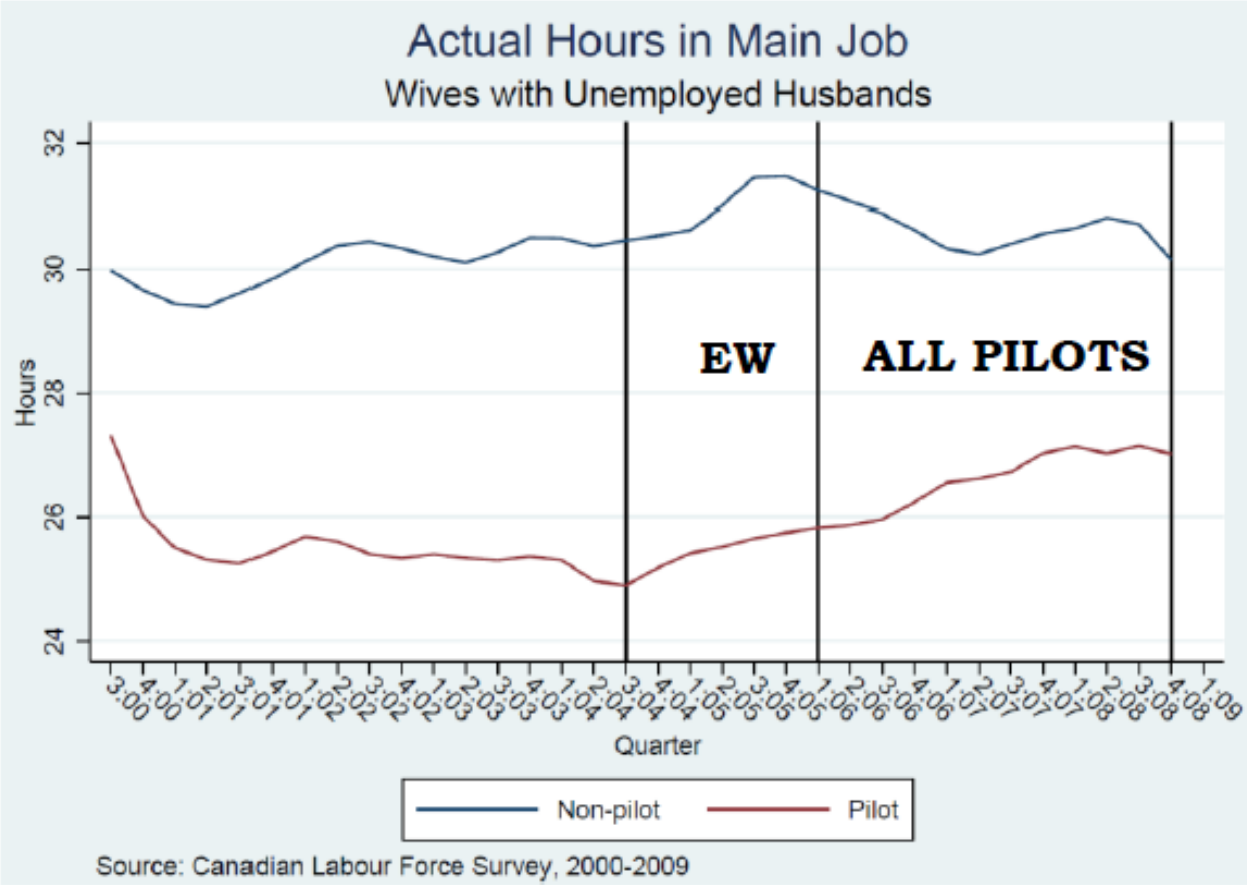
Summary of Pilot Initiatives

Pilots	**Extended Weeks (EW)**	**NERE**	**Best 14**	**WWOC**
EI Parameter	Weeks of benefits	Eligibility for New or Re-Entrants	Benefits calculation	Allowable earnings from work while on claim
Changes	**5 additional** weeks	**Fewer** hours work needed	**14** weeks of **highest** earnings	**Higher** earnings cap before claw back of benefits
Timing	June 2004 to Feb 2009 in 21 EI pilot regions	Dec 2005 to Aug 2008 in 21 EI pilot regions	Oct 2005 to Aug 2008 in 21 EI pilot regions	Dec 2005 to end of period in 21 EI pilot regions Dec 2008 applied to nonpilot regions
Labour Supply Implications	Adverse employment effects	Encourages the take up of work with shorter hours	Encourages the take up of any available work	Encourages the take up of low earnings/low hours work
Population affected in pilots regions	All EI regular claimants	About 15% of EI claimants	All EI regular claimants	About 50% of EI regular claimants

Same EI pilot regions for all 4 pilots but 2004 - 2005 singles out the EW pilot treatment

EI eligibility strict criteria to allow exclusion of individuals eligible for Best 14 & NERE pilots

The equation takes into account the separate impact of the WWOC pilot



Parallel trend test over 2000-2009 passes but we focus on period January 2001-February 2009

Difference in Difference Approach

$$y_{it} = cons + \lambda_r + \mu_t + (\pi_r \times t) + \beta_o A_{EW} \times P +$$
$$+ \beta_1 SP\_LFS1t + \ldots + \beta_4 SP\_LFS_{4t} +$$
$$+ \delta_1 SP\_LFS_{1t} \times A_{EW} \times P + \ldots + \delta_4 SP\_LFS_{4t} \times A_{EW} \times P + X_{it} + SP\_X_{it} + v_i + \mu_t + \varepsilon_{it}$$

where λ_r is a set of EI region fixed-effects and μ_t is a set of month – year fixed effects and $(\pi_r \times t)$ allows for province-specific trends.

P identifies the treated regions of the EW pilot (same as the other 3 pilots)
A_{EW} identifies months starting in June 2004, the start of the EW pilot

Table 4: DiD Estimations of AWE and Crowd-Out Effects of EI

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[2]		LFP	Actual Hours Worked[2]		LFP
Main Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
Spouse's Labour Force Status: (base category is Employed at work)						
Employed, absent from work	-0.723***	-0.770***	-0.002	-1.416***	-1.515***	-0.002**
	(0.103)	(0.108)	(0.002)	(0.109)	(0.113)	(0.001)
Unemployed, EI eligible	0.481	0.562	-0.004	0.503	0.669*	-0.005
	(0.359)	(0.378)	(0.006)	(0.386)	(0.399)	(0.004)
Unemployed, Not eligible	1.201**	1.148**	0.009	0.223	0.019	-0.008
	(0.522)	(0.552)	(0.007)	(0.786)	(0.817)	(0.011)
Out of the Labour Force	-0.197	-0.141	-0.048***	-0.095	-0.182	-0.020***
	(0.370)	(0.375)	(0.007)	(0.310)	(0.320)	(0.003)

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[2]		LFP	Actual Hours Worked[2]		LFP
Main Interaction Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
$A_{EW} \times P$[2]	0.202	0.207	0.007	2.680***	2.575***	0.010*
	(0.385)	(0.393)	(0.006)	(0.558)	(0.574)	(0.005)
$A_{EW} \times P \times$ Spouse's LF Status:						
Employed, absent from work	-0.142	-0.009	-0.001	0.017	0.203	-0.001
	(0.446)	(0.448)	(0.007)	(0.514)	(0.543)	(0.004)
Unemployed, EI eligible	-1.713*	-1.624*	-0.032*	0.240	0.385	0.012
	(0.900)	(0.943)	(0.019)	(1.225)	(1.228)	(0.014)
Unemployed, Not eligible	-1.531	-1.201	0.044*	-0.928	-0.615	-0.001
	(1.607)	(1.627)	(0.023)	(2.699)	(2.704)	(0.052)
Out of the Labour Force	-0.658	-0.457	-0.043	-0.296	0.049	-0.036**
	(1.234)	(1.237)	(0.027)	(0.985)	(0.989)	(0.015)
Constant	22.055***	24.303***	0.845***	46.870***	44.954***	0.949***
	(4.144)	(4.293)	(0.065)	(4.815)	(4.964)	(0.044)
Test						
$A_{EW} \times P + A_{EW} \times P \times EI$ eligible= EI eligible	3.055	2.766	0.978	2.639	2.268	2.931
(p-value)	(0.081)	(0.096)	(0.323)	(0.104)	(0.132)	(0.087)

Notes:
1- Also includes EI region-specific unemployment rates, time dummies, EI region-specific dummies, province-specific trends, usual hours worked by the spouse, age dummies for both spouses and a dummy for whether the couple has children. Clustered standard errors in parenthesis (55 clusters). * $p < .10$, ** $p < .05$, *** $p < .01$
2-The $A_{EW} \times P$ interaction dummy indicates the period starting in June 2004 when the EW pilot was implemented in the pilot regions.
3- Weekly actual hours worked in the reference week (third week of the month).

Conclusions and Next Steps

- Evidence of AWE and joint labour supply decisions:
  - AWE: Wives increase hours worked by about 1.2 hrs/week following spouse's job loss ineligible for EI benefits
  - Discouraged Worker Effect? Both wives and husbands drop out of the labour force when their respective spouse does
- Evidence of COE of EI on spousal labour supply:
  - Robust evidence for wives only. The negative COE is larger (-1.5 hrs/week) than the positive AWE
  - Additional analysis distinguishing EW treatment by weeks (subgroups with 0, 1-4 and 5 additional EW weeks)
  - Heterogenous effects by education of the spouse
- Robustness checks
  - Results robust to choice of pilot regions ($\succeq$ 10% U rate) and to subperiod of 2002-2005 when only EW pilot was in effect
- Next steps: Analyze whether labour supply adjusts to job search behaviour of unemployed spouse