Spousal Labour Supply Adjustments[1]

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Abstract

In this paper, we study the impact of increased generosity in the unemployment insurance system on labour supply adjustments of a spouse following the job loss of his/her partner. We exploit the longitudinal household format of the Canadian Labour Force Survey following labour force transitions of each spouse over time and estimate spousal labour supply responses arising from an added worker effect, whereby spousal labour supply increases following the partner's job loss. We study whether the additional weeks of benefits offered by the Extended Weeks (EW) pilot, an initiative of the Employment Insurance program implemented in a subset of regions, had a differential impact on spousal labour supply. We use a difference-in-difference (DiD) approach to identify (separately from the added worker effect) a crowding-out effect of EI on the spousal labour supply resulting from the greater generosity of the added benefits weeks. Our fixed-effect estimation results show a statistically significant and substantial added worker effect for married women. Our DiD results show evidence of EI crowding-out the labour supply of wives whose spouse's job loss qualifies for EI benefits. The crowding-out effect of EI diminishes about 55% of the added worker effect.

Keywords: Unemployment Insurance; Spousal Labour Supply; Added Worker Effect; Crowd-Out Effect

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I-Introduction

Spousal labour supply plays a key role in a number of economic problems such as issues of joint taxation, consumption smoothing and more generally intrahousehold risk-sharing[2]. In addition, there is increasing empirical evidence showing that modifications of both private and public insurance programs targeting individuals create cross- (and possibly unintended) effects on the labour supply of the spouse.[3]

In this paper, we analyze how individual changes out of employment, including a job absence or a voluntary or involuntary job termination, impact spousal labour supply and the extent to which labour supply adjustments as an income smoothing mechanism are affected by the generosity of the unemployment insurance system.

The idea of interdependencies in spouses' labour supply has been emphasized for several decades since the seminal work modeling family labour supply of Ashenfelter and Heckman (1974)[4] and the modeling of intra-household allocation decisions in a collective labour supply model first introduced by Chiappori (1988). Empirical evidence of the magnitude of spousal labour supply adjustments however, has taken longer to emerge.[5] The initial empirical literature, focused on estimating the labour supply response of a family member (usually the wife) to his or her spouse's (usually the husband's) unemployment spell, also referred to as the Added Worker Effect (AWE), found little to no evidence of it (Lundberg, 1985; Maloney, 1987; 1991).

More recent studies found a positive AWE effect for wives of unemployed husbands. Although the magnitude of the impact varied with a number of factors: the particular sample of

[2] The question of joint taxation is studied theoretically in Apps and Rees (1999) and empirically analyzed in (Eissa, 95, 96, Lalumia, and Crossley and Jeon, 2007). The literature on intra-household risk sharing is broad, especially in the field of Development Economics. Implications for household consumption smoothing and savings as well as spousal labour supply are discussed in Baker and Benjamin (1997) concerning the joint labour market activities of immigrant households and more broadly in Blundell & all (2008), Shore (2010) and Ortigueira and Siassi (2013).

[3] The evidence includes Kapinos (2009), and Boyle and Lahey (2015) for the impact of changes in the private and public health insurance systems in the US, respectively. Olsson, Slogman and Thoursie (2015) analyze the spousal labour supply implications of a Swedish public sickness insurance reform. Goux & all (2014) show that the French workweek reduction created substantial labour supply spillovers for the spouse. Autor & all (2017) find much stronger effect of the Norway Disability Insurance program for single and unmarried individuals than for married couples as spousal labour supply substantially buffers household income in case of claim denials.

[4] Keane (2011) provides a detailed survey of the labour supply literature emphasizing the key findings regarding male labour supply elasticities, the importance of female labour force participation, the modelling and evolving assumptions regarding taste shifters, and the recognition of the importance of family income first motivated by Mincer (1962).

[5] An exception would be within the empirical literature on immigrant assimilation and investigations of a family investment model starting with Long (1980). His work based on US census data finds evidence of a negative impact of years since migration on earnings for married immigrants women relative to native-born women. His interpretation is that wives in immigrant families that have recently entered the United States may have to work to help finance their husbands' initial investments in schooling or job skills required. Evidence of this type of interdependencies in spouses' labour supply and schooling decisions was confirmed in later studies (Duleep and Sanders, 1993; Baker and Benjamin, 1997, Worswick 1999, Kim and Varasani 2010).

married couples combined with the timing of measurement of the change in labour force status[6], the state of the economy[7], and the generosity of the welfare system[8]. Overall, studies based on shorter-term measurement of labour supply changes (shortly after a job loss rather than the following years) found a stronger AWE effect. Correcting for endogeneity due to unobserved joint tastes for leisure substantially reduced the magnitude of the impact.[9] Moreover and more importantly for the purpose of our present study, the family wealth effect and liquidity constraint that result from a spouse's loss of employment may be tempered by the generosity of the unemployment insurance system, if the job loss comes with the receipt of unemployment insurance benefits. In this case, the employment insurance system would crowd-out spousal labour supply reducing the AWE effect. In sum, identification of spousal labour supply adjustments crucially relies on addressing unobserved heterogeneity, using short-term measures of changes in labour force activities to capture labour supply adjustments reflecting cross-substitution effects, as well as having information on the reasons behind the changes in labour force status and eligibility to receive unemployment benefits.

In this paper, we study the labour supply adjustments coming from a spouse's change in labour force status out of employment taking into consideration the identification issues mentioned above. We start by exploiting the longitudinal and household format of the Canadian Labour Force Survey to follow the labour force transitions of each spouse over time (6-month panels) and estimate short-term spousal labour supply responses of husbands (and separately for wives) to a change in their spouse's employment status into nonemployment, by different categories of nonemployment[10]. More precisely, we estimate whether and if so how, hours worked and labour force participation of wives (as well as husbands), changed before and after their spouse indicated a change out of employment, applying individual fixed-effects estimations to remove unobserved heterogeneity caused by couples' taste for leisure.

In addition to providing monthly information on weekly labour force status, the Labour Force Survey data also contains variables describing each spouse's work history so we can

[6] See Spletzer (1997) and Stephens (2002) for US studies, and Fernandez and Felicio (2005) and Kohara (2010) for studies in Brazil and Japan respectively. Morissette and Ostrovski (2008) show some Canadian evidence based on an analysis of the earnings profile of different types of couples.
[7] See Parker and Skoufias, (2004) and Star (2014).
[8] See Gruber and Cullen (2000) in the US and Bredtman, Otten and Rulff, 2017 in Europe.
[9] Under the assumption of a positive correlation between husbands and wives' tastes for leisure (assortative matching would suggest this assumption is reasonable), the AWE for wives of unemployed husbands is biased upward if the husbands who have a higher taste for leisure are also more likely to lose their job.
[10] The nonemployment states include: absence from work, unemployment (voluntary quits and involuntary layoff), out of the labour force able to work or unable to work.

estimate eligibility to unemployment insurance benefits for couples whose spouse experienced a layoff. We are therefore able to estimate and test for differences in the AWE impact between couples whose spouse is eligible to receive EI benefits and couples whose spouse's job loss does not qualify for EI benefits.

This initial analysis is used as a benchmark for comparison with the empirical literature on the AWE effect. The results however are still contaminated by endogeneity due to the fact that job loss in general and many layoff decisions are not fully exogenous events and EI eligibility is a key influencing factor. To address this issue we exploit variations coming from a change in the Canadian Employment Insurance (EI) system, the Extended Weeks (EW) pilot initiative, which increased the generosity of the system by offering five additional weeks of benefits, and took place in a subset of EI regions over the period of June 2004 to February 2009. The quasi-experimental design of the EI changes allows us to define a treated and comparison group in order to differentiate between policy and time-specific effects.

Using a difference-in-differences framework, we estimate whether the increased EI generosity differentially impacted spousal labour supply and in particular, the AWE in the treated EI regions relative to the EI regions of the comparison group. One potential limitation, however, is that the pilot and nonpilot EI regions were not randomly selected. Hence, there may be both observable and unobservable differences between the treated and comparison groups creating a confounding bias.[11] We address this limitation by including EI region-specific and time-specific fixed-effects in our estimations as well as perform robustness checks over the sub-sample of EI regions within a close range of the unemployment rate cut-off value that determined selection into the treatment group.

Our fixed-effect initial results show a statistically significant and substantial AWE effect shortly after a spouse drops out of the labour force. The AWE response, stronger for wives, corresponds to an increase on average of 1.8 weekly hours in all jobs and 1.3 weekly hours in the main job, for wives of husbands who drop out of the labour force. We also find an AWE effect for husbands when their wives becomes unemployed and ineligible to receive EI benefits, while at the same time, no statistically significant AWE effect when she is eligible to receive EI benefits. This statistically significant difference suggests evidence of a crowding-out effect of EI on spousal labour supply, for husbands of unemployed wives. Our DiD results which attempt to better isolate the impact of the unemployment insurance system on spousal labour supply, confirm the existence of a crowding-out effect of EI for both husbands and wives (although stronger for

[11] The pre-2008 pilot regions were chosen according to their unemployment rate prior to the pilots implementation date which makes the pilots regions high-unemployment regions (rate >= 10%).

husbands). Our results on the crowding out of EI complements the evidence so far found in the US (Gruber and Cullen, 2000 and Guler and Taskin, 2013).

The rest of the paper is structured as follows. Section II presents a summary of the employment insurance changes over the 2004-2009 time period and discuss implications for spousal labour supply adjustments. Section III presents the data and empirical strategy, Section IV presents the basic results, Section V analyzes alternative explanations and Section VI concludes.

II-Background

Starting in June 2004, the Evaluation Directorate at Employment and Social Development Canada (ESDC) launched a pilot initiative within its Employment Insurance Program called the Extended Weeks pilot. The pilot increased the duration of benefits by 5 weeks (to a maximum of 45 weeks) with the objective of providing EI claimants with additional financial support while they find new employment. The first pilot was initiated June 6, 2004 and ended June 4, 2006 in 24 of the 58 economic regions of the country. The EW pilot was subsequently extended until February, 2009 in 21 economic regions, after which the extended benefit feature applied to all EI regions as part of the 2009 Economic Action Plan.

The rationale for the EW pilots was based on research showing a segment of the seasonal claimant population experienced gaps in income (referred to as seasonal gappers), during which they do not receive EI benefits or employment income (ESDC 2010). It was later found that seasonal workers are not unique in their difficulties of establishing a regular income stream and that the pilot benefitted non-seasonal workers as well. Claim spells were found to be longer for a significant proportion of claimants (seasonal as well as occasional claimants), and employment spells to qualify for EI were found to be shorter after the establishment of the pilot (ESDC 2010). This finding is consistent with the main prediction of job search theory which is that increasing the length of unemployment benefits reduces the incentive of unemployed workers to search for and accept a job. It is also consistent with the abundant empirical evidence confirming that extending the duration of benefits creates work disincentives (Katz and Meyer, 1990; Hunt, 1995; Card and Levine, 2000; Lalive 2007 and 2008; Tsatsiramos, 2009; Schmieder, von Wachter and Bender, 2012; Farber and Valletta, 2015; Lluis & McCall, 2018).

In the context of the household labour supply model, the EW pilot is also expected to create work disincentives for the working spouse or delay the decision to join the labour force for non working spouses. Following the reasoning behind the added worker effect, the reduction in

family income created by the job loss of a family member can be offset, at least temporarily, by other family members' decision to either join the labour force or increase their hours of work. Such labour supply adjustment from the spouse reflects a cross-substitution effect. In the life-cycle dynamic labour supply model, this labour supply adjustment may also arise, in the short-run, as a result of liquidity constraints or assuming uncertainty or imperfect information about job finding rates following a job loss. Unemployment insurance benefits received over a longer time period through the EW pilot, extends the temporary financial relief further tempering the income reduction. Therefore, extended duration of EI benefits is expected to reduce the importance of the cross-substitution effect and the resulting positive labour supply response of the spouse. This means that we may observe no adjustments or perhaps a downward adjustment in the labour supply of spouses in the EW pilot regions relative to the non pilot regions.

In our empirical strategy, we will estimate the AWE effect in its broadest definition, that is, as a form of labour supply adjustment resulting from a change out of employment into either unemployment or out of the labour force. The crowding-out effect on labour supply will be estimated first by further distinguishing the unemployment status (eligible versus ineligible to receive EI benefits) and testing whether labour supply adjustments leading to EI eligible unemployment are statistically significantly weaker than those which do not come with any employment insurance income support. Furthermore, through the DiD design applied to the EW pilot initiative, the AWE and crowd-out impacts will be differentiated between the treated and comparison group to provide an estimate that further addresses the endogeneity bias created by the potential for non randomness in reported involuntary job loss and layoffs.

Identification of the impact of the EW pilot on the AWE and crowd-out effects resulting from spousal labour supply adjustments depends on having detailed geographical information about the economic region where couples live which is provided in the Master file of the LFS data. An additional identification issue arises due to the fact that not long after the implementation of the EW pilot, three additional pilots were introduced for the purpose of strengthening individuals' labour force attachment: The working while on claim pilot, the NERE pilot and the Best 14 pilot.

The working while on claim pilot or WWOC pilot changed the allowable earnings formula for EI recipients living in 23 of the 24 EI regions selected for the EW pilot (Southern Interior British Columbia was excluded) on December 11, 2005.[12] This particular pilot project increased the level of allowable earnings from employment during a claim period from the maximum of $50

[12] The pilot project was later extended to all regions effective December 7, 2008 through December 4, 2010 (and further extended for 8-month until June 25, 2011). For consistency, we will exclude Southern Interior B.C. from our analysis.

or 25% of the benefit amount to the maximum of $75 or 40% of their benefit amount in 23 selected high unemployment regions in Canada. Such a change gives unemployed workers increased incentives to work while on claim. The NERE pilot project, applicable to new entrants and re-entrants reduces the entrance requirement from 910 to 840 hours.[13] The third pilot is the Best 14 pilot. According to the Best 14 pilot, only the 14 weeks of highest income is used to calculate the benefit amount (out of 52 instead of 26 weeks of the Rate Calculation Period).[14] This pilot began October 30, 2005 in the same 23 EI regions as the other pilots. Similar to the NERE pilot, this pilot should encourage the take up of part-time low earnings jobs.

Given the different timing of implementation of the EW pilot compared to the other three pilots and the fact that all pilots were implemented in the same subset of economic regions, we can separately identify the impact of the EW pilot from the other three. The specification equation for our DiD analysis (described in the next section) will control for the potential additional combined impact of these other three pilots on spousal labour supply.[15]

The next section describes the data and provide details on our empirical strategy for estimating the AWE and crowding-out effects based on the measurement of the change in labour force status of the spouse from employment into non-employment.

III-Data and Empirical Strategy

The Labour Force Survey (LFS) data provides a large and representative sample of about 50,000 Canadian households each month. Every month, one-sixth of the total sample is replaced with a new group of households. The rotating panel sample design of the LFS includes six

[13] This pilot began on December 11, 2005 in the same 23 EI regions as the other pilots. The pilot was designed to determine whether giving NEREs access to Employment Insurance regular benefits after fewer hours of work would improve their employability and help reduce future reliance on Employment Insurance regular benefits. The main results of the ESDC report on the NERE pilot is that the proportion of NEREs qualifying for regular benefits after having accumulated between 840 and 909 insurable hours increased, while the proportion of NEREs qualifying for regular benefits after accumulating between 910 and 949 insurable hours decreased. Thus, NERE individuals adapt their work patterns to these hour constraints, and are more likely to accept work with shorter hours when facing the lower hour requirement. Hence, the NERE pilot may potentially increase the take up of part-time or temporary work.

[14] For example, assume an individual has worked consistently over the last year and lives in an area where the unemployment rate is 13.1 per cent, the minimum divisor will be 14. In his or her best 14 weeks of work, he has earned $10,400. The average weekly earnings are calculated as $10,400 ÷ 14 weeks = $742.85 rounded to $743. The objective of the Best 14 is to encourage individuals to accept all available work by excluding weeks of low earnings from the benefit calculation, provided that the number of weeks of earnings exceeds the minimum divisor. It also extends the rate calculation period, from 26 weeks preceding the claim to 52 weeks preceding the claim.

[15] While the WWOC pilot creates unambiguous work incentives which are likely to encourage spousal labour supply and strengthen the AWE effect, the impact of the other two pilots on spousal labour supply adjustments is not as clear. These pilots were developed to facilitate the take up of short earnings/hours jobs but the new benefit formula of the Best 14 pilot, by increasing the amount of benefit received will likely create work disincentives. The more generous eligibility criteria of the NERE pilot also induces less work "intensity" to meet requirements for collecting the benefits.

rotations and there is potential to link the data on the same household members over six consecutive months.[16] The monthly panel format of the LFS data allows us to address unobserved endogeneity coming from couples' heterogeneity in their taste for leisure affecting the labour supply.

The data is collected at the household level and in the confidential microdata files, every individual in the household (including children or other family members living with the main respondent) is uniquely identified allowing us to study the labour market behaviour of each married (or common law) individual together with their spouse, given their own demographic and labour market information. Demographic information (including marital status) and labour force status are asked every month. Job related information including earnings is asked every month only if there was a change of job.

The longitudinal format of the LFS data has been used by researchers to analyze labour force transitions of the Canadian population (Jones and Riddell, 2006, Campolieti, 2011, Skuterud and Xu, 2012, Brochu, 2013, Lluis and McCall, 2018, Jones and Riddell, 2017). The household format of the data has been exploited in only a few studies related to the labour force participation decision of older couples (Schirle, 2008), to mothers' labour supply response to the Canadian child benefit policy (Schirle, 2015; Koebel and Schirle, 2015) and to wives' labour supply response to an amendment to Quebec family patrimony rules (Lluis & Pan, 2018).

A-Variables and Sample Selection

On the first month entering the sample and following subsequent months, the survey asks information about the labour force status of each household member referring to the reference week (the third week of the month). There are six possible categories: employed at work, employed absent from work (for illness, caring for own children or elder relative, vacation/public holidy or other reasons such as work schedule or labour dispute), unemployed, out of the labour force able to work, out of the labour force unable to work.

We use the information on weekly labour force status in various ways. First we use it to identify individuals working and further exploit information on actual weekly hours worked in the main job and in all jobs in the reference week which will be our main dependent variable for describing the labour supply response at the intensive margin. We also create a labour force participation dummy variable describing the extensive margin of the labour supply. Second, we exploit the spouse's response to the labour force question using it as our main explanatory

[16] Rotation 1 corresponds to the group of households who entered the survey in the month of January or July, rotation 2 identifies the group of households who entered in February or August, …etc

variable. Any change in labour force status out of employment into unemployment will identify the presence of an added worker effect. We define the added worker effect in its broadest sense as an increase in hours worked (or labour force participation) resulting from a job change from being employed at work in the previous month's reference week to either unemployed or out of the labour force. We also have information on the number of usual (weekly) hours worked of the spouse who is employed. The correlation between usual spousal hours and actual hours worked by the main respondent helps us approximate a longer-term added worker effect (an increase in actual hours worked resulting from the drop in usual hours worked following the spouse's job loss).

We also further distinguish the state of unemployment by whether the individual is eligible or ineligible to receive EI benefits. The LFS data provides the typical variables used in the EI literature analyzing survey data to proxy for EI eligibility: reason for unemployment (distinguishing involuntary and voluntary unemployment), full-time versus part-time status of the lost job and months of tenure accumulated in the lost job (to estimate the minimum insurable hours requirement to qualify for EI benefits). We define the state of "EI eligible" unemployment based on the indication that the job was lost for involuntary reasons (business or economic, and temporary or permanent layoffs) and the maximum of insurable hours for receiving regular EI benefits has been met. In terms of months of job tenure this corresponds to having worked full-time for at least 4 months or part-time for at least 12 months.[17] Our main unemployment insurance eligibility definition is therefore that individuals who report being involuntary unemployed must have worked for at least one year in their past job (whether full-time or part-time).

Similarly, we define a state of unemployment which does not qualify for EI benefits based on responses indicating dismissal by employer (voluntary unemployed), or involuntary unemployment with less than three months of job tenure in the job lost.[18]

The Master files of the LFS survey also has the advantage of providing the geographical location of the households' dwelling categorized according to the EI regions. We will use this

[17] Before 2010, the maximum hours in low unemployment regions was set at 690 hours. The minimum was and still is at 420 hours. Also we estimate full-time hours at 40 and part-time hours at 16 (the average hours worked among part-timers over the full sample of individuals. We perform robustness checks in the last section exploiting additional information on the unemployment rate in the EI regions to define a measure of eligibility based on region-specific cutoffs in insurable hours.

[18] Classified as involuntary reason for unemployment: end of seasonal or temporary or contract/casual job, company moved or went out of business, business conditions (not enough work). Voluntary reason corresponds to dismissal by employer.

information to identify the pilot regions that experienced the five additional weeks Extended Weeks (EW) pilot.

We select individuals who indicate being married (or in common-law union) in their first month entering the sample and stayed married throughout the 6 month period. In order for our labour supply analysis to avoid picking up decisions related to human capital investment or retirement, we selected couples where each spouse is between 35 and 50 years old.

B-Summary Statistics

Table 1 presents weighted summary statistics of demographic and labour market information for husbands and separately for wives by the labour market status of their respective spouse. Not surprisingly, the most frequent observations describing couples labour force status are those which correspond to both spouses employed (93.3% and 95.2%). Regarding hours worked, wives' hours are on average greater when their husband is employed relative to wives with non employed husbands (and similarly for husbands' hours) which seems inconsistent with the presence of an added worker effect on average. Differences in couples' averages however are contaminated by endogeneity coming from non random selection into marriage. We are able to address this issue by exploiting the variation in within-individual hours worked before and after a spouse's job loss.

Our labour supply estimations ignore labour earnings as this creates additional endogeneity issues but we control for the age and education of each spouse in the estimations as well as whether the couple has children. Moreover, we control for hours worked of the spouse (including zeros for spouses who left the labour force after the first month).

IV-Analysis and Basic Results

We address the complexity of identifying the added worker effect separately from the effect coming from EI benefits crowding-out the labour supply by presenting the analysis in two steps. In a first step, we estimate the added worker effect following closely the literature's approach whereby identification is coming from the reason for the job loss (involuntary) and from measuring the short-term response of the main respondent (within 6 months of the souse's job loss) which is likely to be stronger than the longer-term labour supply adjustment. We also include individual fixed-effects in the estimation to control for unobserved time-invariant taste for leisure affecting the labour supply and likely correlated with the spouse's labour force status.

In the second step, we replicate the analysis in the context of a quasi-experiment in which individuals in a subset of EI regions were exposed to five additional weeks of benefits. In this setting, we estimate whether, and if so how, the added worker effect changes as a result of the increased generosity in EI benefits duration relative to the added worker effect estimated in the comparison group of EI regions.

A-Evidence of an Added Worker Effect (AWE)

We study whether and how a spouse's change in labour force status impacts the labour supply (hours worked and participation) of husbands and wives separately. To identify the AWE effect, we select couples such that at least one of the spouses indicates being employed (at work) in the starting month (the status of the other spouse can be employed or nonemployment in the first month). By doing so, we maintain randomness in our sample selection and focus on exploiting variations in labour force status coming from the spouse who either stays employed throughout the subsequent months or changes status to absent from work or to non employed according to the categories of the labour force status variable described in the previous section. In sum, our sample only excludes couples with both spouse indicating that they are non employed at the start of the sample period. The sample size resulting from this selection is 3.1M individuals (1.57M husbands and 1.59M wives) and 31.6% of the couples have a spouse who experience a labour force status change some time either in the second month or up to the last month in the sample.

The estimation equation is defined as follows:

$$y_{it} = cons + \beta_1 SP\_LFS1t + \ldots + \beta_3 SP\_LFS_{3t} + \gamma\, SP\_usualhrs + X_{it} + SP\_X_{it} + \alpha_i + \mu_t + \varepsilon_{it}$$

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_{ot} indicates the spouse is employed at work (the base category each time period), SP_LFS_{1t} indicates the spouse at month t is employed but was absent from work in the reference week (sickness, holiday, caring for family member), SP_LFS_{2t} indicates the spouse at month t is unemployed, SP_LFS_{3t} indicates the spouse at month t is out of the labour force.

The term α_i models an unobserved individual fixed-effect and μ_t represents a time-specific effect estimated non linearly with month/year dummies. X_{it} and SP_X_{it} include age dummies for both spouses and whether the couple has children.

We define the added worker effect within this framework as the coefficient associated with a change out of employment into either unemployment (β_2) or out of the labour force (β_3) and expect the estimates to be statistically significant and positive. The estimate γ associated with usual hours worked by the spouse helps identified an added worker effect in the longer-term.

Table 2 presents the results of the fixed-effect estimations. The first two columns of the Table show the results of the spouse's change in labour force status on the wife's actual hours worked in her main job (column 1) and at all jobs (column 2). The results regarding wives' labour force participation decision is presented in column 3. The next three columns represent the same analysis for husbands' actual hours at their main job, at all jobs (columns 4 and 5 respectively) and for husbands' labour force participation decisions (column 6).

The negative labour supply estimates associated with the spouse's absence from work in columns 1-2 and 3-4 suggests evidence of a joint leisure effect or complementarity in nonmarket time whereby both wives and husbands reduce their labour supply as their spouse changes labour force status from employed to absent for work. On average wives labour supply is reduced by -.829 hours (at all jobs) in relation to their husband's absence from work while for husbands, their labour supply reduces by 1.404 hours when their wife indicates a weekly work absence.

At the extensive margin, a wife's absence from work is associated with a statistically significant (although small) decline in the likelihood that her husband participates in the labour force (column 6). Interestingly, a spouse switching from employment into inactivity (out of the labour force) has a statistically significant negative impact on the likelihood of labour force participation for both husbands and wives but stronger for wives (column 3 and 6). Overall, reductions in weekly hours following a short-term absence seem to be happening for either wives or husbands and in a manner which suggests procyclicality in the labour supply movements of each spouse. In addition, there is evidence that both husbands and wives use spousal labour supply as insurance against the other spouse dropping out of the labour force.

For wives, the statistically significant increase in the labour supply following their husband unemployment is suggestive of an added worker effect of 0.694 additional weekly hours at the main job and 0.769 weekly hours at all jobs (columns 1 and 2). There is no evidence of an added worker effect at the extensive margin for wives.

There is no evidence of an added worker effect for husbands at either margins. However, the statistically significant positive (although small) estimate associated with usual hours worked of the spouse for both wives and husbands suggests evidence of a longer-term added worker effect

whereby a usual hour drop to 0 following the spouse's job loss is associated with a small but statistically significant increase in actual hours worked by the main respondent.

Given the strong and consistent impact of a work absence in the joint labour supply decisions for both husbands and wives, we further investigated the labour supply response of the main respondent by reasons for full week absences (Table 3a) and reasons for part week absences (Table 3b) of his or her spouse. From the results in **Tables 3a**, we see that the main source of absence among those reporting full-week absences relates to illness, vacation and other reasons (other personal or family responsibilities, labour dispute and work schedule) for both husbands and wives. Among individuals who reported part-week absences (**Tables 3b**), we see again a relatively stronger impact of vacation/public holiday for both spouses. We also note a stronger hour reductions for wives following their husband's absence due to caregiving a stronger labour supply reduction of husbands following the maternity leave of their wives.

Table 4 reports the results of the same analysis as Table 2 but this time further distinguishing the spouse's labour force status by whether he/she is eligible to receive EI benefits. The positive added worker effect is again important for wives labour supply (column 1 and 2) and more importantly , it is associated with a husband's job loss that do not qualify for EI benefits. In particular, a husband's job loss statistically significantly increases weekly hours of his wife by about one hour per week on average. It also increases labour force participation by 0.011 percentage point. As found in Table 2, there is no evidence of an added worker effect for husbands.

B-Evidence of a Crowd-Out Effect (COE) of EI

The previous results are indicative of an added worker effect affecting wives' labour supply but the results could be affected by the generosity of the EI system and the fact that job loss is not a completely exogenous event. In this section, we take advantage of a quasi-experiment which modifies the generosity of the EI system in a subset of regions and allows us to conduct a DiD analysis and further identify the positive impact of the AWE along with a possible negative crowd-out effect of EI on the labour supply. Our setting also allows us to test the difference in the magnitude of each opposite effects.

The specification in this particular context is defined as follows:

$$y_{it} = cons + \lambda_r + \mu_t + + \beta_o A_{EW} \times P + \beta_1 SP\_LFS1t + \ldots + \beta_4 SP\_LFS_{4t} + \gamma\, SP\_usualhrs$$

$$+ \delta_1 SP\_LFS_{1t} \times A_{EW} \times P + \ldots + \delta_4 SP\_LFS_{4t} \times A_{EW} \times P + \delta_5 SP\_usualhrs \times A_{EW} \times P$$

$$+ X_{it} + SP\_X_{it} + v_i + \mu_t + \varepsilon_{it}$$

where λ_r is a set of EI region fixed-effects and μ_t is a set of month – year fixed effects.[19]

In this latter specification the coefficient β_o measures the impact of the EW extended weeks initiative that was implemented in the pilot regions on spouses who are *employed at work* and the δ parameters measure any additional impact of the EW pilot associated with a spouse changing labour force status out of the state of employment at work.

For the unemployment status, we kept the distinction between unemployed ineligible and unemployed eligible. A crowd-out effect is identified by the following summed effect: $\beta_2 + \delta_2$ (for an unemployed eligible spouse) predicted to be statistically significantly negative indicating a decline in the labour supply of wives/husbands with a spouse who fell unemployed and eligible to the EI pilot. We also test for the presence of a crowd-out effect associated with the drop in spousal usual hours.

Table 5 presents the results of the DiD analysis. As in the previous Tables, the first three columns display the labour supply response of wives and the next three columns, the response of husbands. Panel A (the first Table) shows the main effects associated with spousal labour force status and usual hours worked. Panel B (the second Table in the following page) shows the DiD equivalent interaction terms associated with the EW pilot regions after the implementation.

As before, we find evidence of an added worker effect among wives whenever their unemployed spouse is not eligible to collect EI benefits. In panel B, the interaction terms and DiD estimates are reported. There is a statistically significant decline in the hours worked and labour force participation of wives only when their husband's job loss is eligible to receive EI benefitting from the extended weeks. This is evidence of the EW pilot crowding out wives' labour supply. The total effect of the crowding out on hours worked in the main job is a decline of -0.908 weekly hours which is statistically significantly different (p-value of 0.10 at the bottom of panel B of Table 5) from the positive added worker effect of 1.374 weekly hours (from panel A of Table 5).

V-Robustness Checks

One potential limitation of the pilots implementation is that the pilot and nonpilot regions were not randomly selected. Hence, there may be both observable and unobservable differences between the treated and comparison groups. The pre-2008 pilot regions were

[19] For simplicity of presentation, we omitted the interaction terms associated with the other three pilots which are included in all our specifications.

chosen according to their unemployment rate prior to the pilots implementation date which makes the pilots regions high-unemployment regions (rate >= 10%). The non-randomness in how treated regions were determined may limit the extent to which causal inferences can be made regarding the EW pilot impact on labour supply. Indeed, the estimated effect may be confounded by the fact that the pilot regions are high-unemployment regions. To further address this issue, we replicate the analysis using a sub-sample of pilot and nonpilot regions with unemployment rates within 2.7 percentage points of the 10% cut-off that determined pilot status. **Appendix A Table A4** replicates the analysis in Table 4 over the subsample of EI regions with similar unemployment rate as explained above.

In addition, within the EW pilot initiative there are potentially different treatment amounts based on the hours of work / economic region unemployment rate before and after the EW pilot begins. There are some groups where the treatment amount is zero weeks. Other groups have treatment of 1 to 5 weeks. An example will help clarify. For regions switching from no pilot to the EW pilot gaining 5 additional weeks of benefits and individuals who accumulated at least 1820 insurable hours and living in unemployment rates (U-rate) going from under 6 to 16+.

Maximum Unemployment Duration before and after the EW pilot – Example with Insurable hours ≥ 1820

U-rate	< 6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16+
Before EW	36	38	40	42	44	45	45	45	45	45	45	45
EW	41	43	45	45	45	45	45	45	45	45	45	45
Difference in max ben weeks	5	5	5	3	1	0	0	0	0	0	0	0

We can use these differences to run a falsification test whereby the EW treatment with zero weeks should not lead to statistically significant results and the treatment with 1 to 5 weeks should lead to stronger results. In **Appendix A Table A5**, we estimate the previous DiD specification associated with the various EW treatments: zero and 1 to 5 weeks and over the subsample of 8-12% unemployment rate regions. The results associated with the zero weeks treatment are weakly statistically significant while those associated with the 1-5 weeks treatment are of large and

statistically significant magnitude confirming the causal impact of the generosity of the EW pilot on the crowding-out of married women labour supply.

VI-Conclusions

In this paper, we exploit the longitudinal and household format of the Canadian Labour Force Survey following labour force transitions of each married partner over time to estimate the spousal labour supply responses arising from an added worker effect, whereby spousal labour supply increases following their partner's job loss. We find evidence of an increase in hours worked for married women of a little over one hour per week on average as a result of the job loss of their spouse and whenever the spouse is ineligible to receive EI benefits. We also find evidence of significant labour supply reductions (of two to three hours weekly) following the spouse's absences resulting from joint leisure time through vacation as well as from spending time providing caregiving or being on maternity leave.

An important factor modifying the extent of the added worker effect is the generosity of the unemployment insurance system. We study whether the additional weeks of benefits offered by the Extended Weeks (EW) pilot, an initiative of the Employment Insurance program implemented in a subset of regions, had a differential impact on spousal labour supply. Our DiD results show evidence of EI crowding-out the labour supply of wives whose spouse's job loss qualifies for EI benefits. The crowding-out effect of EI diminishes about 55% of the added worker effect.

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Table 1: **Summary Statistics of Spouse's Characteristics Conditional on Husband/Wife's Labour Force Status**[1]

	Husband is			Wife is		
	Employed	**Unemployed**	**OLF**	**Employed**	**Unemployed**	**OLF**
Employed	0.933 (0.249)	0.871 (0.335)	0.877 (0.328)	0.952 (0.213)	0.884 (0.319)	0.934 (0.248)
Hours Main job	31.31 (13.22)	30.03 (15.01)	30.25 (15.09)	39.02 (13.03)	36.64 (16.57)	39.27 (14.88)
Hours, > 0	33.61 (10.59)	34.48 (10.25)	34.49 (10.67)	40.98 (9.91)	41.41 (10.62)	41.40 (11.21)
Hrly Earnings, > 0 Main job	20.02 (9.86)	17.96 (9.49)	18.38 (10.06)	25.56 (11.39)	23.44 (11.15)	23.94 (12.09)
Hours All jobs, > 0	34.09 (10.75)	35.02 (10.45)	35.04 (10.91)	41.52 (10.32)	41.88 (10.87)	37.95 (16.40)
Age	41.35 (3.89)	41.24 (3.92)	41.64 (3.96)	42.79 (3.91)	42.69 (3.90)	42.58 (3.95)
Post-Secondary	0.713 (0.452)	0.648 (0.477)	0.629 (0.482)	0.700 (0.458)	0.662 (0.472)	0.690 (0.462)
Secondary	0.215 (0.410)	0.220 (0.414)	0.226 (0.418)	0.196 (0.396)	0.185 (0.389)	0.176 (0.380)
Elementary	0.072 (0.258)	0.131 (0.338)	0.144 (0.350)	0.103 (0.305)	0.151 (0.358)	0.133 (0.339)
Children	0.827 (0.378)	0.783 (0.412)	0.782 (0.412)	0.821 (0.383)	0.827 (0.469)	0.883 (0.320)

Notes: 1- LFS data over 2002-2009. Total observation number is 699,682 individuals-months for wives and 717,256 individuals-months for husbands.

Table 2: Fixed-Effect Estimations of AWE following 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	-0.785*** (0.087)	-0.829*** (0.091)	-0.001 (0.001)	-1.319*** (0.096)	-1.404*** (0.099)	-0.002** (0.001)
Unemployed	0.694*** (0.239)	0.769*** (0.248)	0.002 (0.004)	0.104 (0.276)	0.147 (0.285)	-0.002 (0.003)
Out of the Labour Force	-0.043 (0.308)	-0.016 (0.311)	-0.045*** (0.006)	0.004 (0.266)	-0.131 (0.276)	-0.020*** (0.003)
Spouse's Usual Hours Worked	0.036*** (0.004)	0.038*** (0.004)	-0.000 (0.000)	0.046*** (0.005)	0.049*** (0.005)	0.000 (0.000)
Constant	22.274*** (3.872)	23.473*** (3.998)	0.842*** (0.061)	46.630*** (4.545)	44.933*** (4.700)	0.946*** (0.049)

Notes:
1-Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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 3a: Fixed-Effect Estimations of AWE - Distinguishing Reason for Absence Full Week

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)						
Absence for own illness	-0.617**	-0.584**	-0.001	-0.474**	-0.483**	-0.001
	(0.278)	(0.295)	(0.004)	(0.230)	(0.235)	(0.003)
Absence for caregiving	0.928	0.498	0.009	-1.324	-1.279	-0.017
	(0.775)	(0.771)	(0.018)	(1.107)	(1.119)	(0.012)
Absence for maternity leave	-0.146	-0.696	0.056	-0.865	-0.877	-0.000
	(1.844)	(1.928)	(0.036)	(0.564)	(0.584)	(0.005)
Absence for vacation	-0.835***	-0.865***	-0.001	-1.453***	-1.553***	-0.002*
	(0.095)	(0.100)	(0.001)	(0.105)	(0.108)	(0.001)
Absence for other reasons[3]	-1.135***	-1.247***	0.001	-1.586***	-1.493***	-0.007**
	(0.338)	(0.349)	(0.005)	(0.401)	(0.417)	(0.004)
Unemployed	0.614***	0.670***	0.000	0.073	0.118	-0.002
	(0.234)	(0.243)	(0.003)	(0.267)	(0.277)	(0.002)
Out of the Labour Force	-0.079	-0.065	-0.044***	0.091	-0.027	-0.019***
	(0.294)	(0.297)	(0.005)	(0.255)	(0.265)	(0.003)
Spouse's Usual Hours Worked	0.037***	0.039***	-0.000	0.048***	0.050***	0.000
	(0.003)	(0.004)	(0.000)	(0.005)	(0.005)	(0.000)
Constant	19.951***	20.462***	0.830***	47.424***	46.077***	0.955***
	(3.773)	(3.931)	(0.059)	(4.476)	(4.618)	(0.047)

Notes:

1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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).

3- Other reasons include: other personal or family responsibilities, labour dispute, work schedule and other.

Table 3b: Fixed-Effect Estimations of AWE - Distinguishing Reason for Absence Part Week

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)						
Absence for illness	-0.557***	-0.566***	0.001	-0.773***	-0.813***	-0.000
	(0.122)	(0.126)	(0.001)	(0.116)	(0.117)	(0.001)
Absence for caregiving	-1.288***	-1.238***	0.004	-0.874***	-0.884***	0.003
	(0.359)	(0.367)	(0.005)	(0.236)	(0.241)	(0.002)
Absence for maternity leave	-1.850	-1.862	-0.060	-3.774**	-3.916**	-0.006
	(2.439)	(2.446)	(0.055)	(1.865)	(1.870)	(0.006)
Absence for vacation	-2.849***	-2.920***	-0.000	-3.507***	-3.570***	-0.000
	(0.106)	(0.108)	(0.001)	(0.118)	(0.122)	(0.001)
Absence for other reasons[3]	-1.303***	-1.356***	-0.001	-1.759***	-1.835***	-0.001
	(0.066)	(0.068)	(0.001)	(0.077)	(0.081)	(0.001)
Absence for public holiday	-2.216***	-2.227***	0.000	-2.476***	-2.467***	-0.000
	(0.093)	(0.096)	(0.001)	(0.104)	(0.106)	(0.001)
Unemployed	0.328	0.388	0.001	-0.200	-0.161	-0.002
	(0.229)	(0.238)	(0.003)	(0.265)	(0.274)	(0.002)
Out of the Labour Force	-0.310	-0.291	-0.043***	-0.143	-0.268	-0.019***
	(0.291)	(0.293)	(0.005)	(0.252)	(0.263)	(0.003)
Spouse's Usual Hours Worked	0.037***	0.039***	-0.000	0.050***	0.052***	0.000
	(0.003)	(0.003)	(0.000)	(0.005)	(0.005)	(0.000)
Constant	20.665***	21.301***	0.833***	47.670***	46.273***	0.958***
	(3.783)	(3.939)	(0.060)	(4.423)	(4.575)	(0.047)

Notes:

1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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).

3- Other reasons include: other personal or family responsibilities, labour dispute, work schedule and other.

Table 4: 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	-0.754***	-0.799***	-0.001	-1.366***	-1.450***	-0.002**
	(0.094)	(0.099)	(0.001)	(0.102)	(0.106)	(0.001)
Unemployed, EI eligible	0.451	0.508*	0.000	-0.005	0.058	-0.003
	(0.286)	(0.295)	(0.005)	(0.340)	(0.351)	(0.003)
Unemployed, Not eligible	1.147**	1.106**	0.011*	0.151	0.010	-0.003
	(0.446)	(0.468)	(0.006)	(0.703)	(0.728)	(0.010)
Out of the Labour Force	-0.202	-0.144	-0.048***	-0.043	-0.122	-0.022***
	(0.324)	(0.327)	(0.006)	(0.285)	(0.294)	(0.003)
Spouse's Usual Hours Worked	0.036***	0.038***	-0.000	0.050***	0.053***	0.000*
	(0.004)	(0.004)	(0.000)	(0.006)	(0.006)	(0.000)
Constant	22.341***	24.492***	0.839***	48.244***	46.321***	0.909***
	(4.137)	(4.283)	(0.065)	(4.842)	(4.993)	(0.054)
F-test: coef_EI = coef_Not eligible	2.275	1.535	2.386	0.045	0.004	0.008
(p-value)	0.132	0.215	0.123	0.833	0.950	0.927

Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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 5: Fixed-Effect 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)
	PANEL A					
Spouse's Labour Force Status: (base category is Employed at work)						
Employed, absent from work	-0.705***	-0.749***	-0.002	-1.415***	-1.517***	-0.002**
	(0.103)	(0.109)	(0.002)	(0.109)	(0.113)	(0.001)
Unemployed, EI eligible	0.747**	0.823**	0.001	0.002	0.083	-0.005
	(0.337)	(0.349)	(0.005)	(0.374)	(0.387)	(0.004)
Unemployed, Not eligible	1.374***	1.307**	0.010	0.244	0.028	-0.008
	(0.526)	(0.556)	(0.007)	(0.782)	(0.814)	(0.011)
Out of the Labour Force	-0.002	0.048	-0.046***	-0.099	-0.199	-0.021***
	(0.374)	(0.378)	(0.007)	(0.309)	(0.320)	(0.004)
Spouse's Usual Hours Worked	0.041***	0.042***	-0.000	0.049***	0.051***	0.000
	(0.004)	(0.005)	(0.000)	(0.006)	(0.006)	(0.000)

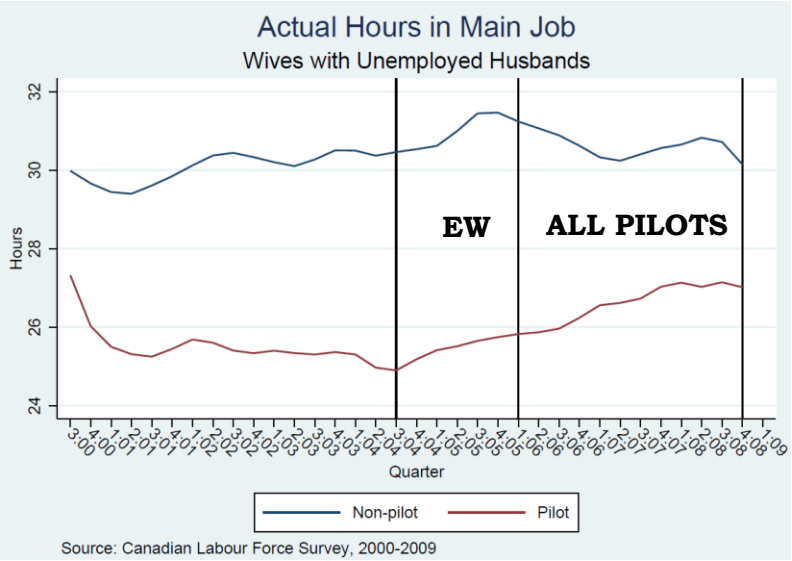
Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether the couple has children. Clustered standard errors in parenthesis (55 clusters). * $p < .10$, ** $p < .05$, *** $p < .01$
2- Weekly actual hours worked in the reference week (third week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

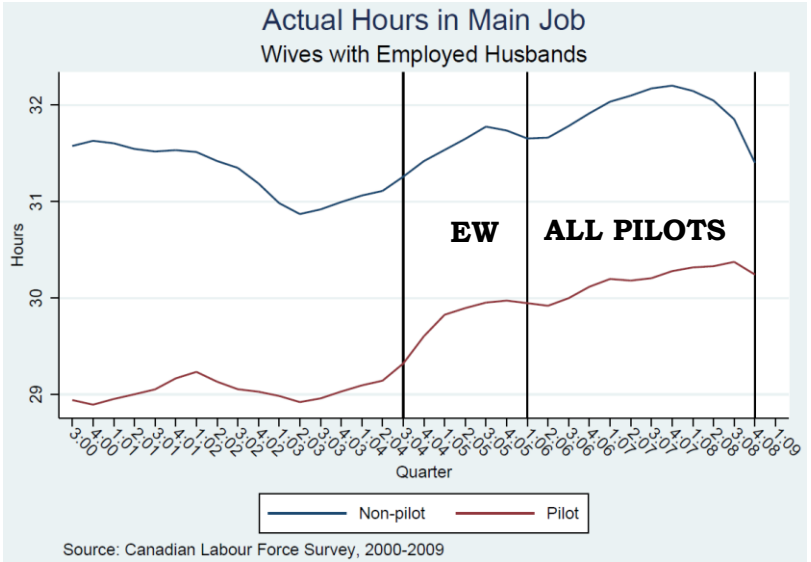
Table 5: Fixed-Effect DiD Estimations of AWE and Crowd-Out Effects of EI - Continued

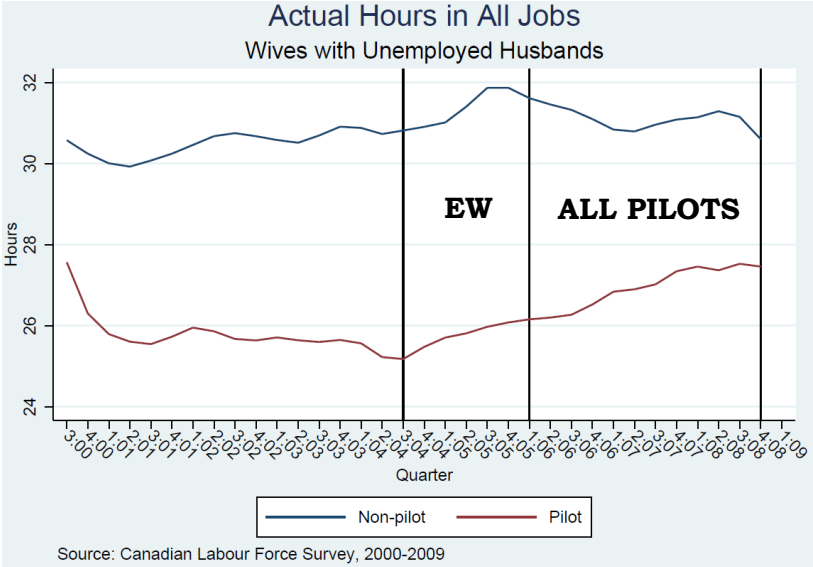
Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[3]		LFP	Actual Hours Worked[3]		LFP
Main Interaction Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
	PANEL B					
$A_{EW} \times P$[2]	0.731	0.645	0.010	2.371***	2.087**	0.002
	(0.561)	(0.568)	(0.008)	(0.816)	(0.836)	(0.008)
$A_{EW} \times P \times$ **Spouse's LF Status:**						
Employed, absent from work	-0.165	-0.038	-0.001	0.021	0.209	-0.001
	(0.447)	(0.448)	(0.007)	(0.514)	(0.543)	(0.004)
Unemployed, EI eligible	-1.639*	-1.449	-0.026*	0.602	0.859	0.025
	(0.882)	(0.914)	(0.016)	(1.232)	(1.226)	(0.013)
Unemployed, Not eligible	-2.264	-1.841	0.036	-0.819	-0.318	0.003
	(1.683)	(1.704)	(0.022)	(2.750)	(2.756)	(0.053)
Out of the Labour Force	-0.818	-0.548	-0.042	-0.378	0.162	-0.030*
	(1.241)	(1.252)	(0.026)	(1.103)	(1.102)	(0.016)
$A_{EW} \times P \times$ **Spouse's Usual Hours Worked**	-0.013	-0.011	-0.000	0.008	0.014	0.000
	(0.010)	(0.010)	(0.000)	(0.017)	(0.017)	(0.000)
Constant	22.416***	24.645***	0.841***	46.766***	44.977***	0.950***
	(4.143)	(4.304)	(0.065)	(4.816)	(4.979)	(0.044)
Test						
$A_{EW} \times P + A_{EW} \times P \times EI$ **eligible=** EI **eligible**	2.648	2.415	0.927	4.676	4.213	5.760
(p-value)	0.104	0.120	0.336	0.031	0.040	0.016

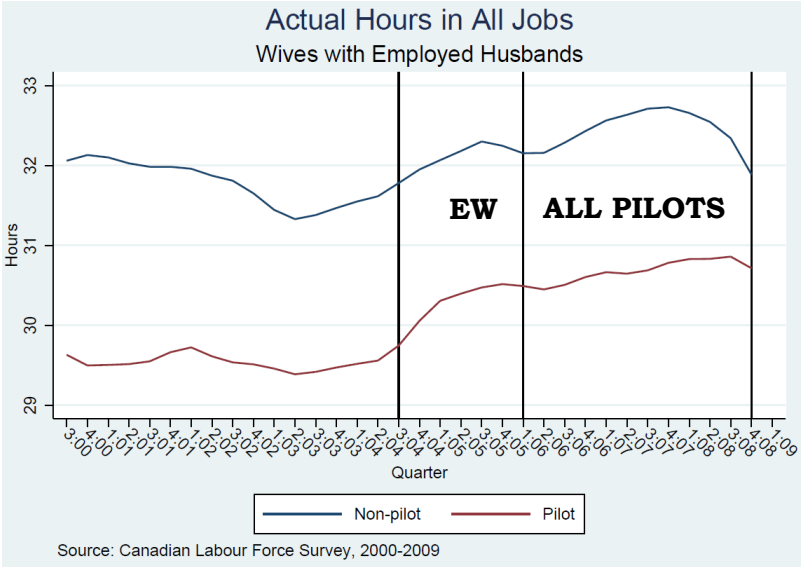
Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether the couple has children. Clustered standard errors in parenthesis (55 clusters). * $p < .10$, ** $p < .05$, *** $p < .01$
2-The A_{EW} x P interaction dummy indicates the period starting 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).

APPENDIX A: Figures









APPENDIX A
Tests of Parallel Trends

Table A1: Tests of Parallel Trends

	Actual Hours Worked			
	Wives		Husbands	
	Main Job	All Jobs	Main Job	All Jobs
F-test[20]	2.30	1.88	0.40	0.24
(p-value)	(0.09)	(0.145)	(0.757)	(0.868)
F-test[21]	1.49	1.17	0.66	0.42
(p-value)	(0.229)	(0.331)	(0.583)	(0.742)

[20] Test of equality of yearly trends (year fixed-effects), 2000- 2004, no controls
[21] Test of equality of yearly trends (year fixed-effects), 2000-2004, with controls

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Table A4: 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	-0.754***	-0.799***	-0.001	-1.363***	-1.447***	-0.002**
	(0.094)	(0.099)	(0.001)	(0.102)	(0.106)	(0.001)
Unemployed, EI eligible	0.382	0.417	-0.005	0.512	0.630*	-0.004
	(0.316)	(0.330)	(0.005)	(0.360)	(0.371)	(0.004)
Unemployed, Not eligible	1.117**	1.085**	0.011*	0.126	-0.018	-0.003
	(0.448)	(0.470)	(0.006)	(0.708)	(0.733)	(0.010)
Out of the Labour Force	-0.232	-0.171	-0.048***	-0.041	-0.119	-0.022***
	(0.326)	(0.329)	(0.006)	(0.287)	(0.296)	(0.003)
Spouse's Usual Hours Worked	0.036***	0.038***	-0.000	0.050***	0.053***	0.000*
	(0.004)	(0.004)	(0.000)	(0.006)	(0.006)	(0.000)
Constant	22.028***	24.265***	0.845***	46.980***	45.077***	0.949***
	(4.144)	(4.293)	(0.065)	(4.818)	(4.967)	(0.044)
F-test: coef_EI = coef_Not eligible	2.343	1.733	5.260	0.263	0.706	0.009
(p-value)	0.126	0.188	0.022	0.608	0.401	0.923

Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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).

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Table A5: Fixed-Effect 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)
	PANEL A					
Spouse's Labour Force Status: (base category is Employed at work)						
Employed, absent from work	-0.618***	-0.635***	-0.000	-1.338***	-1.384***	0.001
	(0.154)	(0.164)	(0.002)	(0.192)	(0.196)	(0.002)
Unemployed, EI eligible	1.400**	1.454**	-0.004	0.830	1.034	-0.007
	(0.570)	(0.607)	(0.008)	(0.653)	(0.686)	(0.005)
Unemployed, Not eligible	2.367***	1.921**	0.017	0.122	0.165	-0.023*
	(0.889)	(0.902)	(0.014)	(1.188)	(1.278)	(0.014)
Out of the Labour Force	-0.324	-0.505	-0.051***	-0.167	-0.309	-0.025***
	(0.629)	(0.630)	(0.012)	(0.530)	(0.556)	(0.006)
Spouse's Usual Hours Worked	0.042***	0.041***	-0.000	0.048***	0.050***	0.000
	(0.007)	(0.007)	(0.000)	(0.010)	(0.011)	(0.000)

Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse and a dummy for whether 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).

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Table A5: DiD Estimations of AWE and Crowd-Out Effects of EI - Continued

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[3]		LFP	Actual Hours Worked[3]		LFP
Main Interaction Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
	PANEL B					
$A_{EWo} \times P$[2]	1.673**	1.492*	0.008	2.551**	2.334*	-0.024**
	(0.789)	(0.796)	(0.011)	(1.164)	(1.201)	(0.011)
$A_{EWo} \times P \times$ **Spouse's LF Status:**						
Employed, absent from work	-0.411	-0.117	-0.006	0.170	0.258	-0.001
	(0.771)	(0.813)	(0.010)	(0.957)	(1.044)	(0.006)
Unemployed, EI eligible	-2.960	-2.204*	-0.010	-2.351	-2.394	0.042**
	(1.258)	(1.317)	(0.021)	(1.666)	(1.700)	(0.018)
Unemployed, Not eligible	-4.559***	-4.387**	-0.011	-10.276*	-10.397*	-0.157
	(1.747)	(1.798)	(0.018)	(5.819)	(5.815)	(0.148)
Out of the Labour Force	1.861	2.090	0.023	-0.053	0.178	0.016
	(1.850)	(1.853)	(0.040)	(1.307)	(1.343)	(0.025)
$A_{EWo} \times P \times$ **Spouse's Usual Hours Worked**	-0.031**	-0.028*	0.000	0.003	0.005	0.001**
	(0.015)	(0.015)	(0.000)	(0.025)	(0.026)	(0.000)
Test						
$A_{EWo} \times P + A_{EWo} \times P \times$ ***EI*** **eligible=** ***EI*** **eligible**	1.207	1.775	0.010	0.104	0.290	2.779
(p-value)	0.272	0.183	0.919	0.747	0.590	0.096

Notes:
Also includes region-specific unemployment rates, time dummies, age of each spouse 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} x 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).

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Table A5: Fixed- Effect DiD Estimations of AWE and Crowd-Out Effects of EI - Continued

Dependent Variable:	Wives			Husbands		
	Actual Hours Worked[3]		LFP	Actual Hours Worked[3]		LFP
Main Interaction Variables[1]	Main Job (1)	All Jobs (2)	(3)	Main Job (4)	All Jobs (5)	(6)
	PANEL B					
$A_{EW15} \times P$[2]	-27.242***	-28.409***	0.015	-30.166***	-30.271***	-0.065
	(3.441)	(3.518)	(0.110)	(4.373)	(4.365)	(0.091)
$A_{EW15} \times P \times$ **Spouse's LF Status:**						
Employed, absent from work	1.235	2.250	-0.015	-0.915	-1.025	0.120**
	(3.466)	(3.478)	(0.100)	(3.251)	(3.287)	(0.059)
Unemployed, EI eligible	-11.058***	-10.401**	-0.065	-12.360	-12.232	0.071
	(4.697)	(4.786)	(0.127)	(10.132)	(10.226)	(0.093)
Unemployed, Not eligible	-5.115	-3.980	-0.017	0.020	-0.390	-0.049
	(14.663)	(14.663)	(0.117)	(9.896)	(9.952)	(0.170)
Out of the Labour Force	4.874	5.993	-0.074	2.960	3.055	-0.255
	(3.936)	(4.029)	(0.155)	(6.713)	(6.707)	(0.294)
$A_{EW15} \times P \times$ **Spouse's Usual Hours Worked**	0.079	0.086	-0.000	0.033	0.030	0.001
	(0.071)	(0.073)	(0.003)	(0.119)	(0.119)	(0.002)
Constant	25.378***	27.744***	0.755***	47.850***	46.146***	0.881***
	(6.377)	(6.530)	(0.097)	(7.581)	(7.776)	(0.066)
Test						
$A_{EW15} \times P \times EI$ **eligible=** $A_{EWo} \times P \times EI$ **eligible**	3.17	2.560	0.185	2.216	2.156	0.649
(p-value)	0.075	0.109	0.667	0.113	0.123	0.420

Notes:
1- Also includes region-specific unemployment rates, time dummies, age of each spouse 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).