



## Sickness insurance and spousal labour supply<sup>☆,☆☆</sup>



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### HIGHLIGHTS

- Is spousal labour supply related to the partner's sickness insurance?
- We analyse a Swedish reform of the sickness insurance.
- A higher replacement rate for a spouse increases the partner's sick days.

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### ABSTRACT

Analysing a reform in the Swedish public sickness insurance, we find that an increased replacement rate for one spouse has a negative cross effect on the other spouse's labour supply. The cross effects are present in the labour supply margins that workers can easily adjust. For wives of treated husbands, the total number of sick days increases on average 9.1% per month, whereas labour earnings are unchanged. The cross effect on total sick days for husbands to treated wives is 6.1% on average, with no effect on annual labour earnings. The total number of sick days and annual labour earnings for treated spouses are estimated to be unaffected by the reform, which indicates that the cross effects stem specifically from higher insurance coverage for the couples.

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## 1. Introduction

There is a long tradition of analysing interdependencies in the spousal labour supply (Ashenfelter and Heckman, 1974). Interdependencies in the spousal labour supply are of particular importance when designing social insurance systems that involve work disincentive effects because the impact of a policy can extend well beyond

the targeted population through spousal cross effects (Alesina et al., 2006; Maurin and Moschion, 2009; Dahl et al., 2014). Because the labour supply is more responsive to social insurance benefits than to labour earnings, spousal cross effects within social insurance systems can be significant (Heckman, 1993; Krueger and Meyer, 2002).

In this paper, we analyse whether the spousal labour supply responds to changes in public sickness insurance.<sup>1</sup> We use independent

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<sup>1</sup> The public sickness insurance compensates workers' foregone earnings in case of short-term sickness absence and is known to create significant work disincentive effects. OECD countries spend an average of nearly 1% of GDP on sickness benefit payments (OECD, 2010). In countries such as the Netherlands, Norway and Sweden, expenditures exceed 3.5% of GDP. In California, the total sum of net benefits in 2005 amounted to \$4.2 billion, which can be compared to the corresponding amount of \$4.6 billion for unemployment insurance (Social Security Administration, 2008). Several studies have documented the labour supply effects of individuals' sickness insurance benefits; see Henreksson and Persson (2004), Johansson and Palme (2002, 2005), Pettersson-Lidbom and Skogman Thoursie (2013), and Ziebarth and Karlsson (2010, 2013).

variation in the replacement rate for one spouse to analyse whether it has an effect on the other spouse's labour supply. The independent variation is the result of Swedish sickness insurance reform in 1987. The reform is unique because it increased the replacement rate for workers in the non-governmental sector but left the replacement rate unchanged for workers in the governmental sector.<sup>2</sup> The fact that government workers were excluded by the reform provides an opportunity to estimate causal cross effects using a difference-in-differences strategy. The idea is to analyse workers in the governmental sector married to workers in the non-governmental sector whose replacement rate was changed by the reform (the treatment group). The control group consists of married workers in the governmental sector whose spouses also work in the governmental sector; i.e., couples for whom the replacement rate for both spouses was unaffected by the reform.

From a theoretical perspective, the effect of the partner's replacement rate in the sickness insurance on the labour supply behaviour of the other spouse is ambiguous. The labour supply and income can change for the partner who receives a higher replacement rate. We refer to these effects as direct effects. The direct effects can in turn cause several types of cross effects that have an impact on the other spouse's labour supply.

A cross-hour effect arises if the spousal labour supply is interdependent. In the case of complementarity in non-market time between husbands and wives, for instance, if they enjoy spending time together, the direct effect and cross-hour effect from a higher replacement rate are of similar signs. However, if the non-market time of husbands and wives is substitutable, the effects have opposite signs. For example, a spouse who reports sick can shift time endowments to more home production and thereby free up time for market work for the other spouse. Updated norms are an additional cross effect that arises if a spouse perceives it as more acceptable to not work if the partner works less.

If the spousal labour supply depends on the couple's income, a direct income effect creates a cross-income effect, as both partners react to the higher replacement rate for one of them. In regard to social insurance programmes, a specific cross-income effect occurs if the spousal labour supply reacts to the insurance coverage of the partner. With a higher sickness insurance benefit level, expected household income increases because the costs of future illnesses decrease. Thus, the spousal labour supply becomes less important as an insurance for future income shocks, a feature recognised in the added worker literature (see for instance Mincer (1962), Lundberg (1985) and Cullen and Gruber (2000)). Thus, when one spouse receives a higher benefit level, the other spouse can reduce his/her labour supply even if there is no direct income effect.

We use information on start and end dates for all sick spells in Sweden registered by the Swedish National Insurance Board matched with Longitudinal Individual Data (LINDA), which constitutes a 3.3% representative sample of the Swedish population and includes register information on annual earnings and demographic characteristics. The sickness data are unique, as they contain the universe of all sick spells in Sweden during our analysed period from 1986 to 1991. We measure labour supply in two ways. The first measure is sick reporting, for which we analyse the probability of starting sick leave and the total number of sick days. The second measure of labour supply is annual labour earnings. The advantage of using sickness absence as a labour supply measure is that it is a margin that workers can easily adjust. In comparison to contracted hours, which take a long time to adjust, a worker can immediately adjust his or her labour supply by calling in sick from work.<sup>3</sup>

For directly affected partners, our results indicate that a higher replacement in the sickness insurance induced by the reform in 1987 increased the number of sick spells but decreased the average duration of a spell. These two effects cancel each other, leaving no direct effect on total sick days or annual earnings. When looking at spousal responses, we estimate significant cross effects. We estimate that wives, in couples for whom only the husband receives a higher replacement rate, increase the total number of sick days by more than 9% on average per month. This corresponds to a cross effect of more than 1.5 sick days per year. In couples for whom only the wives receive a higher replacement rate, husbands increase their total sick days by more than 6% on average, corresponding to 0.5 more sick days per year. Simultaneously, we find no cross effects on annual labour earnings, which indicates that indirectly affected spouses mainly respond by changing labour supply margins, which can be easily adjusted. As we find no direct effects on total sick days or annual earnings, our results provide weak support for cross-income or cross-hour effects. Furthermore, we do not find that a joint sickness effect and, hence, complementarity in spousal leisure time are important for the estimated overall cross effect. Instead, an interpretation of our results is that the cross effect stems from increased insurance coverage of the partner per se.

Our paper is related to a growing body of empirical research on how labour market reforms and social reforms targeted at a specific segment of workers have labour supply effects well beyond the initially targeted segment (see, e.g., Dahl et al. (2014), Maurin and Moschion (2009) and Alesina et al. (2006)). Previous studies have shown that retirement decisions by husbands and wives are positively correlated, thereby suggesting complementarities in spousal leisure (Blau, 1998; Gustman and Steinmeier, 2000), and that wives' labour supply decreases if their husbands receive more generous unemployment benefits, suggesting substitutability in spousal leisure (Lundberg, 1985; Cullen and Gruber, 2000). Furthermore, Gelber (2014) exploits a Swedish tax reform that took place in 1990–1991 and finds that a lower marginal tax rate on earned income for one spouse has a positive effect on earnings for both spouses. Interpreting earnings as labour supply, the result suggests complementarity in spousal leisure. Our paper is perhaps most related to Goux et al. (2014), who study cross effects from a French workweek reduction reform. Because the reform had no effect on earnings, their results can be interpreted as pure cross-hour effects. Goux et al. (2014) show that husbands reduce their working hours when their wives experience a reduction in working hours but that wives do not change their working hours when their husbands experience reduced working hours. The results in Goux et al. (2014) are consistent with complementarity in spousal leisure with respect to husbands' behaviour.

Our contribution to the literature is to provide a new assessment of the insurance role played by spousal labour supply, with a specific emphasis on the public sickness insurance. To our knowledge, this is the first study to reveal significant cross effects of the public sickness insurance on spousal labour supply. An important lesson is that sickness insurance reforms can have significant effects that go well beyond the targeted population even if there is no direct income effect and no direct labour supply effect on total sick days.

Moreover, our results highlight the importance of considering labour supply margins that workers can easily adjust, such as sick reporting, when evaluating labour market and social insurance reforms. That labour supply responses are found on such margins is consistent with the results in Goux et al. (2014), in which the cross effects from a reduction in working hours are mainly driven by “non-usual” hours, such as overtime and absenteeism.

We also emphasise the relevance of studying the cross effects of the sickness insurance system. For example, in contrast to unemployment or retirement decisions, sickness absence is a situation most couples face many times during a year and over their entire working life. Thus, spousal labour supply responses from the sickness insurance represent a general behaviour compared to behavioural responses from the unemployment insurance.

<sup>2</sup> See Pettersson-Lidbom and Skogman Thoursie (2013) for an analysis of the direct reform effect on sickness absence.

<sup>3</sup> A worker in Sweden who calls in sick does not need a doctor's certificate until the eighth day of sickness.

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