

Anticipatory Effects of Public Survivor Insurance on the Labour Supply of Married Women

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1 Motivation and context

Topic. Public survivor benefits (SB), originally designed to provide support to widows and widowers, were established in an era of traditional marriages, where husbands were the primary breadwinners. For many widows, SB was their main source of income. To reduce public expenditures and in response to the substantial increase in female labor force participation, these programs have undergone reforms, resulting in reduced generosity or, in some cases, elimination (OECD 2018). This paper explores the possibility of inverse causality: do reforms in SB schemes alter the labour supply of married women and their husbands?

Theoretical focus. Rabaté & Tréguier (2022) and Giupponi (2019) have shown that reducing survivor benefits leads to an increase in labor supply among *widows*. However, these studies focus on the 'realized' impact (after spousal death) of survivor insurance on labor supply. As far as our knowledge extends, there exists no empirical evidence to date regarding the 'anticipatory' effects (before potential spousal death) of survivor insurance on labor supply. Yet, this question has been investigated in theoretical papers, using dynamic structural life-cycle models to help understanding the role of marriage-based social insurance on household's labour supply decision. Groneck & Wallenius (2021), Borella et al. (2019), Fadlon & Nielsen (2019), Nishiyama (2019) find that removing SB would increase female labour participation.

Public survivor insurance in the Netherlands. Insurance against spousal death in the Netherlands is provided through three main sources, which is commonly known as the three pillars of pension systems. We focus on the first pillar, which is a public insurance that provides a basic pension whose

amount and eligibility do not depend on either spouse's labour market history. The 1996 reform introduced a discontinuity in the Dutch scheme eligibility: all window(er)s born before 1950 are eligible to SB, and individuals born after 1950 are eligible only if they care for a minor child or are disabled.

2 Data and methods

Methodology. The 1996 reform introduced a discontinuity into SB eligibility. We use this discontinuity in the date of birth to identify the causal impact on the labour supply from eliminating SB. We add a control group to neutralize the potential effects of confounding reforms. Since the 1996 SB reform only applied to married couples while confounding reforms also concerned cohabitants, we add cohabitant couples as a control group in our specification. We estimate:

$$Y_i = \alpha + \lambda \cdot \mathbf{1}_M + \beta \cdot f(dob_i - 1950) \cdot \mathbf{1}_M + \gamma \cdot \mathbf{1}_M \cdot f(dob_i - 1950) * \mathbf{1}_{dob \geq 1950} + \delta \cdot \mathbf{1}_M \cdot \mathbf{1}_{dob \geq 1950} + \varepsilon_i,$$

where Y_i is the independent variable (household labour decisions taken to be woman i 's labour force participation and labour income and her husband's labour income), $dob - 1950$ is the cohort variable, equal to the difference between woman i 's date of birth and January, 1st 1950 (in quarters in our main specification). The $f()$ function must be continuous in 0. In our baseline specifications, we include a linear trend in the running variable, $f(dob_i - 1950) = dob_i - 1950$. The specification allows for different slopes before and after the cutoff. $\mathbf{1}_M$ is a dummy equal to 1 for married couples and 0 for cohabitants. ε_i is a random noise. δ is our parameter of interest and captures the SB reform on household labour supply decisions.

Data sources. We use register data collected and maintained by Statistics Netherlands (CBS), who cover all Netherlands residents and thus can provide us with information on complete individual trajectories and retrospective data on household histories. Each record contains a unique personal identifier that we can use to merge datasets and obtain the following information on individuals: civil-status and household histories (from 1995 onward), labour income based on tax data (from 1999 onward), wealth (from 2007 onward), as well as those information for their partner and children.

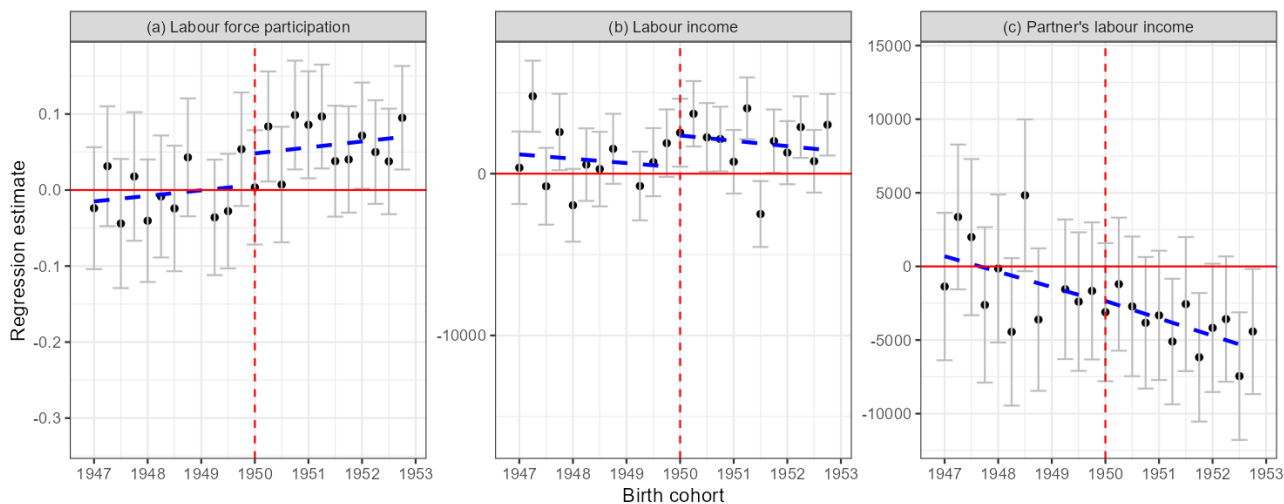
Sample selection. We select couples that remain married over the 1994–2004 period, in which the wife was born between 1947 and 1952 and who did not migrate nor die over the period so that our panel is balanced. The selection of the year 1994 allows us to focus on couples who were already

married when the reform was announced. We also select cohabitants as a control group to neutralize the potential effects of confounding reforms. We focus on partners belonging to households that never married nor terminated the household over the 1994–2004 period. We look at women’s labour force participation and labour income and their husband’s labour income over the 1999–2001 period. 1999 is the first available year for income data and 2002 is the year at which the older cohort reaches 55 years old where we may observe early retirement behaviors.

3 Findings

Figure 1 depicts the average labor supply evolution of spouses across birth cohorts for married couples, with adjustments made to neutralize the average labor supply evolution across birth cohorts for cohabiting couples. It suggests that, while there is mainly no significant difference between cohabitants and married women born before 1950 with regards to household labour supply, married women born after 1950 may have a slightly higher labour force participation and a slightly higher labour income than their cohabitant counterparts. For partner’s labour income, we see no jump at the discontinuity threshold, suggesting no response to the reform.

Figure 1: Linear regression estimates for household labour supply decisions

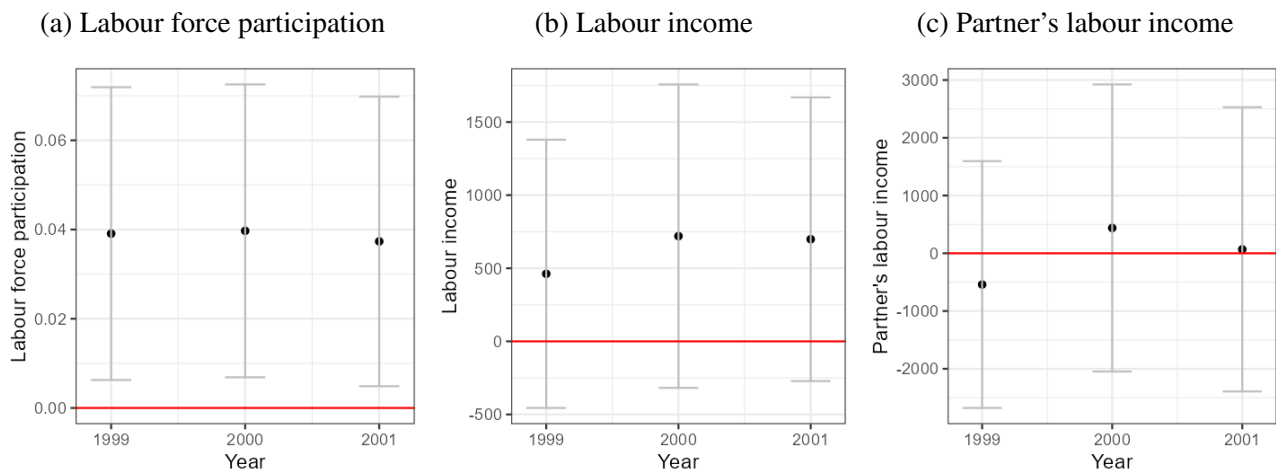


NOTE: Labour income refers to income from wages and self-employment, in 1999. Labour force participation is a dummy equal to 1 if labour income > 0 and 0 otherwise. Confidence intervals are at 95%.
SCOPE: Women born between 1947 and 1952, married in 1994.
SOURCE: CBS.

The coefficients of the RD-DD equation correspond to the magnitude of the jump (see Figure 1) in averages between people born just before 1950 and those born just after. The results displayed in Figure 2 show that, following the reform, married women labour force participation increased by 4 percentage points. Compared to the baseline, it corresponds to a 7% increase. Our estimation

suggest that they also increased their labour income, but the coefficients are not significant. We find no significantly different from zero effect on husbands' labour income.

Figure 2: Household labour supply decisions RD-DD estimates



NOTE: Labour income refers to income from wages and self-employment. Labour force participation is a dummy equal to 1 if labour income > 0 and 0 otherwise. Confidence intervals are at 95%.

SCOPE: Women born between 1947 and 1952, married in 1994.

SOURCE: CBS.

References

- Borella, M., De Nardi, M. & Yang, F. (2019), 'Are marriage-related taxes and Social Security benefits holding back female labor supply?', *NBER working paper* **26097**.
- Fadlon, I. & Nielsen, T. H. (2019), 'Household labor supply and the gains from social insurance', *Journal of Public Economics* **171**, 18–28.
- Giupponi, G. (2019), 'When income effects are large: Labor supply responses and the value of welfare transfers'.
- Groneck, M. & Wallenius, J. (2021), 'It sucks to be single! Marital status and redistribution of Social Security', *The Economic Journal* **131**(633), 327–371.
- Nishiyama, S. (2019), 'The joint labor supply decision of married couples and the US Social Security pension system', *Review of Economic Dynamics* **31**, 277–304.
- OECD (2018), Are survivor pensions still needed?, Technical report, Organisation for Economic Co-operation and Development.
- Rabaté, S. & Tréguier, J. (2022), 'Labor supply effects of survivor insurance evidence from restricted access to survivor benefits in the Netherlands', *CPB Discussion Paper* **437**.