



JRC TECHNICAL REPORT

The lock-in effect of marriage: Work incentives after saying “Yes, I do.”

*JRC Working Papers on
Taxation and Structural
Reforms No 07/2022*

M. Christl, S. De Poli & V. Ivaškaitė-Tamošiūnė



This publication is a Technical report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication. For information on the methodology and quality underlying the data used in this publication for which the source is neither Eurostat nor other Commission services, users should contact the referenced source. The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

EU Science Hub
<https://ec.europa.eu/jrc>

JRC130149

Seville: European Commission, 2022

© European Union, 2022



The reuse policy of the European Commission is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union, 2022.

How to cite this report: Christl, M., De Poli, S., Ivaškaitė-Tamošiūnė, V. (2022), The lock-in effect of marriage: Work incentives after saying "Yes, I do.", JRC Working Papers on Taxation and Structural Reforms No 07/2022, European Commission, Joint Research Centre, Seville. JRC130149

Executive Summary

- In this paper, we focus on the impact of marriage-related tax-benefit instruments (joint income taxation, which is the main driver for marriage bonuses, and other tax-benefit instruments related to marital status) on incentives to work for women and men in a couple. In other words, we compare labour incentives on intensive and extensive margins before and after the marriage of the same couple, pointing to the marriage and gender bias introduced by tax-benefit systems.
- We identify eight countries with economically significant marriage bonuses: Belgium, Czechia, Germany, Spain, Ireland, Luxembourg, Malta and Poland. Focusing on married couples, we use EUROMOD, the tax-benefit model of the European Union, to investigate the impact of the marriage-related tax and benefit rules on the incentives to work.
- To analyse the incentives to work on the intensive margin (the choice of how many hours to work), we calculate the marginal effective tax rate (METR) for women and men in married couples (baseline), as well as in a hypothetical scenario, in which the couple is not married ("before marriage"). The higher the value of METR, the more additional earnings are taxed, meaning the lower the incentives to increase working hours for an individual.
- To gain insights into the incentives on the extensive margin (the decision to work or not to work) in both scenarios, we also analyse the changes in the net replacement rate (NRR). Intuitively, the NRR indicates the share of household income protected by the tax-benefit system if an individual drops out of the labour market.
- Our analysis highlights that, in general, there is a substantial gender gap in METRs before marriage, meaning that, on average, men in couples face higher marginal effective tax rates than women, because of higher average earnings. However, after marriage, tax-benefit systems almost completely offset these gaps by reducing METRs for men while increasing them for women. Additionally, the gender gap in the NRRs for couples before marriage is quite high: the NRRs for women in couples is about 10pp higher than for men. After marriage, tax-benefit rules further increase this gender gap, although slightly, indicating that the labour supply incentives on the extensive margin are decreasing for married women but increasing for men on average.
- Our results point to important policy implications. The unequal treatment of married and non-married couples, especially joint taxation and tax-related allowances and credits (one of the main drivers of marriage bonuses), might disincentivise second earners, mostly married women, from participating in the labour market as well from working full-time. Therefore, the goal to increase female labour market participation (on both the extensive and intensive margin) might be hindered by gender-biased tax-benefit systems, among other things. This unequal fiscal treatment potentially impacts the reallocation of paid and unpaid work within a family, further perpetuating gendered social norms.

- To conclude, from a gender equality point of view, having marriage-related tax-benefit components might disincentivise the second earners – mostly women – from (fully) participating in the labour market and, therefore, might contribute to further perpetuating traditional gender norms and unequal sharing of paid and unpaid work. Furthermore, marriage bonuses contribute to a lock-in effect, where the second earner, typically a woman, is incentivised to work less, with severe economic consequences in the future, ranging from lower pension entitlements to strong economic dependence on the partner.

The lock-in effect of marriage: Work incentives after saying, “Yes, I do.”

Michael Christl^a, Silvia De Poli^{a,1}, Viginta Ivaškaitė-Tamošiūnė^a

^a*European Commission, Joint Research Centre (JRC-Seville)*

*Edificio Expo
Calle Inca Garcilaso, 3
41092 Sevilla*

Abstract

In this paper, we use EUROMOD, the tax-benefit microsimulation model of the European Union, to investigate the impact of marriage-related tax-benefit instruments on the labour supply of married couples. For each married partner, we estimate their individual marginal effective tax rate and net replacement rate before and after marriage. We show that the marriage bonus, which is economically significant in eight European countries, decreases the work incentives for women and, particularly, on the intensive margin. In contrast, the incentives on the intensive margin increase for men once they are married, pointing to the marriage-biased and gender-biased tax-benefit structures in the analysed countries. Our results suggest that marriage bonuses contribute to a lock-in effect, where second earners, typically women, are incentivised to work less, with negative economic consequences.

JEL-Code: H31, J12, J22

Keywords: marriage, cohabitation, marriage bonus, work incentives, gender, tax-benefit system, labour supply, Europe

*Corresponding author. Email: silvia.de-poli@ec.europa.eu

The findings, interpretations and conclusions expressed in this paper are entirely those of the authors. They should not be attributed to the European Commission. Any mistakes and all interpretations are the authors and theirs only.

We are very thankful to the comments of Barbara Bratta and Anamaria Maftei. We are indebted to the many people who have contributed to the development of EUROMOD, especially the EUROMOD developers at the JRC and the University of Essex as well as the EUROMOD national teams. We are also grateful to the participants of ECINEQ conference, in particular Iva Tasseva, for helping to develop the research question.

1. Introduction

Despite showing an increasing trend in recent decades, women's participation in the labour market remains lower than that of men. In 2021, the European Union (EU) employment rate for working-age women was 67.7%, lagging behind that of men by 10.8 percentage points (pp). Moreover, once in employment, many more women than men work part-time – 28.8% of women compared with 8.1% of men in 2021. This has severe economic consequences. In 2013, the cost of lower female labour market participation was estimated at 2.8% of the EU's GDP, according to [Mascherini et al. \(2016\)](#). Similarly, [Morais Maceira \(2017\)](#) assessed that the increased female activity rates potentially could lead to GDP per capita increases of 1-2% in 2030 and 3-6% by 2050.¹

At the individual level, lower women's participation in the labour market also has a severe economic impact. Lower participation is related to lower career prospects, and lower current and lifetime earnings and, therefore, lower financial security in old age (lower pensions). As a result, more women than men were at risk of poverty in 2020², both at working age (22.5% and 20.5%, respectively) and especially at pension age (22.8% and 16.9%, respectively).

Reasons for the gender gap in labour market participation are manifold. One is related to parenthood. With the arrival of a child, the unpaid workload increases immensely for both parents, but women absorb the bulk of unpaid care, even if remains in employment. For working fathers with children, weekly unpaid work hours are 14 hours longer compared to men without children. Whereas, working mothers with children spend 30 hours per week more doing unpaid work than women without children ([Eurofound, 2018](#)). Therefore, it is most often a woman who reduces her working hours or drops out of the labour market because of the incompatibility of the acutely increased unpaid care load and the job demands. This substantially contributes to the gender pay gap, which recent literature shows as mostly a motherhood pay gap ([Kleven et al., 2019a,b](#); [de Quinto et al., 2021](#)).

The more children women have, the lower their employment rate, while the opposite is true for men. The employment rate for women with children was almost 5pp lower than for women without children in the EU in 2020. For men with and without children the difference in the employment rates was 9pp. The employment rates for women with up to two children or without children were similar (around 74% on average) while having three or more children meant an average employment rate of 59.1% ([Eurostat, 2021](#)). Since women, on average, earn less than men, financial incentives can play an important role within a couple for the individual labour supply decisions. Besides, tax-benefits systems may also contribute to those decisions, deliberately or unintentionally treating married and non-married people differently and taxing the second earner more than the primary earner.

The different tax treatment of married couples is well documented in the literature, at least regarding the adverse incentive effects of such tax systems. For example, [Bick and Fuchs-Schündeln \(2017\)](#) quantify the negative labour supply effects of joint taxation (typically a main source of the

¹At the global level, the estimations tend to be much higher. I.e., [Madgavkar et al. \(2016\)](#) estimate that if women were to participate in the economy identically to men, they could add as much as 26% to the annual global GDP in 2025.

²See [Eurostat \(2022\)](#).

marriage bonus) for 17 European countries and the US. [Kabatek et al. \(2014\)](#) show that for France, the change from joint to individual taxation would increase female labour supply substantially, while male labour supply would fall. Similarly, [Crossley and Jeon \(2007\)](#) find the positive effects on female labour market participation of reform that reduces the jointness of the income taxation in Canada. [Gustafsson \(1992\)](#) compares the Swedish tax system, which changed from joint to individual taxation in 1971, with the German joint taxation system and analyses the impact on female labour supply. They argue that joint taxation tends to conserve gender roles and make women more dependent on their husbands. They show that married women in Germany would increase the labour supply substantially within the Swedish tax system.

[Coelho et al. \(2022\)](#) discuss the decisions margins related to labour supply within couples and highlight the impact of marriage since marriage potentially changes the tax liability of the spouses compared to the sum of their tax liabilities as singles or a cohabiting couple. They argue that “cohabiting (without marriage) is not a tax-effective choice in the case of joint taxation”. As [Figari et al. \(2011\)](#) stated, “one of the most interesting aspects is the implication of joint and individual taxation systems for the relative incentives to increase work effort within couples.” This is precisely the purpose of our analysis.

In this paper, we focus on the impact of marriage-related tax-benefit instruments (joint income taxation, which is the main driver for marriage bonuses, and other tax-benefit instruments related to marital status) on incentives to work for women and men in a couple. In other words, we compare labour incentives on intensive and extensive margins before and after the marriage of the same couple, pointing to the marriage and gender bias introduced by tax-benefit systems.

Following [Christl et al. \(2021\)](#), we identify eight countries with economically significant marriage bonuses³: Belgium, Czechia, Germany, Spain, Ireland, Luxembourg, Malta and Poland. Focusing on married couples, we use EUROMOD, the tax-benefit model of the European Union, to investigate the impact of the marriage-related tax and benefit rules on the incentives to work.

To analyse the incentives to work on the intensive margin, we calculate the marginal effective tax rate (METR) for women and men in married couples (baseline), as well as in a hypothetical scenario (before marriage). We analyse the changes in the net replacement rate (NRR) to gain insights into the incentives on the extensive margin. We show that before marriage, women have substantially lower METRs than men. However, this gender gap in METRs is decreased substantially by marriage-related tax-benefit rules. It is completely offset in countries with joint taxation, such as Germany and Luxembourg. We also find that tax-benefit rules have an impact on the extensive margin. Women typically face higher NRRs than men. Still, this gender gap in the NRRs is further widened by marriage-related tax rules, indicating that it gets more financially attractive for a married couple if a woman rather than a man leaves the labour market.

Our results point to important policy implications. The unequal treatment of married and non-married couples, especially joint taxation and tax-related allowances and credits (one of the main drivers of marriage bonuses), might disincentivise second earners, mostly married women, from participating in the labour market as well from working full-time. Therefore, the goal to increase female labour market participation (on both the extensive and intensive margin) might be

³We define a marriage bonus as economically significant if it lies on average above 0.5% of disposable income for working-age households

hindered by gender-biased tax-benefit systems, among other things. This unequal fiscal treatment potentially impacts the reallocation of paid and unpaid work within a family, further perpetuating gendered social norms.

The paper is structured as follows: Section 2 describes the data and the methodology used for the analysis; results are presented in Section 3, while Section 4 discusses the results and concludes.

2. Data and methodology

We base our analysis on previous work by [Christl et al. \(2021\)](#). They analysed the monetary marriage bonuses and penalties across the EU, using EUROMOD, the microsimulation model for the European Union. This model is based on the EU Statistics on Income and Living Conditions (EU-SILC), which aims to collect comparable cross-sectional data on income, poverty, social exclusion and living conditions. For this analysis, we refer to the tax-benefit systems in place in 2019, using EU-SILC data from 2019. EUROMOD simulates tax liabilities and entitlements to benefits at individual and household levels for each Member State and allows for comparative cross-country analysis ([Sutherland and Figari \(2013\)](#)). Using EUROMOD, we can simulate the difference in households' income depending on the marital status of a couple. In other words, we can calculate the financial impact of getting married for each household in each Member State.

In our analysis, we focus only on married couples, and we present two scenarios for these households: First, the **'married' scenario**, which reflects the status quo of couples that are married, having the tax-benefit system with marriage bonuses in place (baseline). Second, we create a **'before marriage' scenario** where all married couples are treated as if they were not married, meaning that the same tax-benefit system will be treating them as cohabiting couples.

Based on these two scenarios, we analyse the impact of tax-benefit systems on the incentives to work for women and men, focusing on the sample of married couples of working age who are not in education. We focus on two measures for labour supply incentives, the METR and the NRR. While the METR is typically a measure for labour supply incentives on the intensive margin, the NRR is a measure for the incentives on the extensive margin.

According to [Jara and Tumino \(2013\)](#), the METR is an “indicator of the proportion of a marginal increase in earnings that is taxed due to social insurance contributions, taxes and loss of benefit entitlement”. For calculating the METR, we follow the standard approach that defines the METR as the marginal tax increase (or benefit loss) at the household level, in case the earnings of an individual in the household increase marginally:

$$METR = 1 - \frac{\Delta Y_{hh}}{\Delta E_i}, \quad (1)$$

where ΔY_{hh} is the change in household disposable income and ΔE_i is the marginal change in earnings of an individual of the household. Following the literature, we simulate an increase in individual earnings by 3%, corresponding to an increase in approximately 1 hour of work for a person working 33 hours. The higher the value of METR, the more additional earnings are taxed, meaning the lower the incentives to increase working hours for an individual.

Then, we calculate the NRR as the ratio between the disposable income of a household in unemployment and household disposable income in employment:

$$NRR_i = \frac{Y_{hh}(i \in U)}{Y_{hh}(i \in E)}, \quad (2)$$

where $Y_{hh}(i \in U)$ is the simulated household disposable income when individual i is in work, and $Y_{hh}(i \in E)$ is the simulated household disposable income when individual i is unemployed.

In the case of households with more than one person employed, the NRR is calculated for each person, assuming that the other members of the households do not change labour market status. Indeed, the NRR can differ across individuals in the same household. Intuitively, the NRR indicates the share of household income protected by the tax-benefit system if an individual drops out of the labour market. A value of 1 of the NRR means low incentives to work since household income would not change if one partner becomes unemployed. Contrary, a value of 0 indicates high incentives to remain in the labour market.

As indicated, the NRR depends not only on the individual choice of participating in the labour market but also on the market income of the partner in the household. Given that work decisions might be taken together in couple households, we argue that the NRR is a good indicator of incentives to work at the extensive margin.

In this paper, we only analyse countries with economically significant marriage bonuses for working-age couples, mostly those countries with joint income taxation or other marriage-related components in the tax-benefit system (e.g., tax allowances for spouses). The selection of countries is based on [Christl et al. \(2021\)](#), who have shown that substantial marriage bonuses and penalties exist across some EU Member States. [Figure 1](#) highlights these financial advantages and disadvantages of marriage.

Economically significant marriage bonuses for working-age households (red bar) were identified in eight countries: Belgium, Czechia, Germany, Spain, Ireland, Luxembourg, Malta and Poland, while in Cyprus and Greece, there is a financial penalty for being married, therefore these two countries are excluded from our analysis. It is noteworthy that the marriage bonus is, on average higher for countries with joint taxation systems, such as Germany and Luxembourg (almost 4%), Ireland and Poland (about 2%, partly-joint systems).

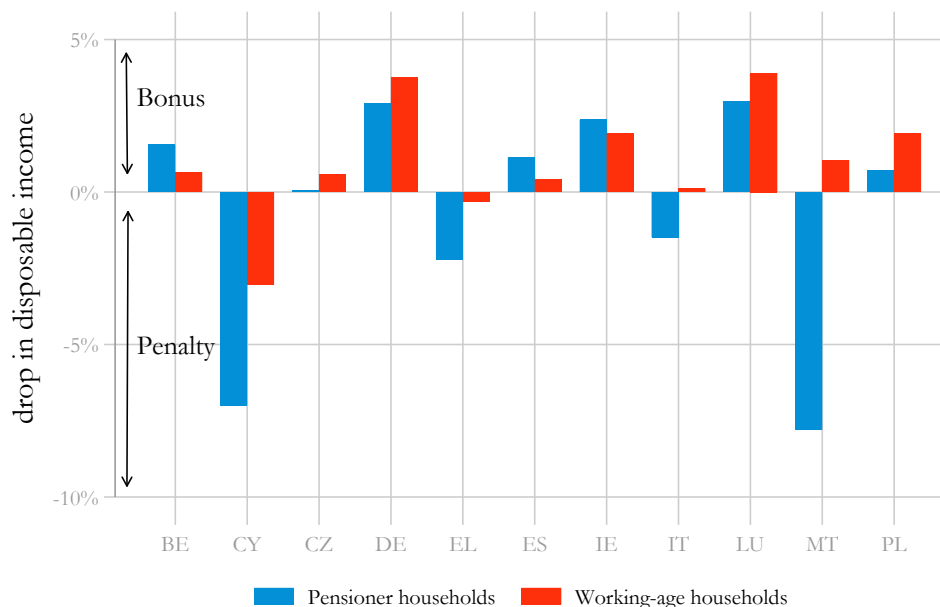
3. Empirical results

3.1. Labour market characteristics of married and cohabiting couples of working age

Before analysing the incentives to work for married couples and comparing them to those before marriage (if a couple was cohabiting), we first look at the labour market characteristics of married and cohabiting couples, which might differ in many ways. As shown in [Table 1](#), within married couples where both partners work, it is mostly men having higher earnings. We refer to these households as male breadwinner households. The male breadwinner concept also includes men single earners. The highest share is in Germany, where about 81% of all working-age married couple households are male breadwinner households (66.4% of primary earners plus 14.7% of single earners). The highest share of female breadwinner households is in Belgium (27.2%) and Poland (28.3%).

Substantial differences can also be seen in the participation of women and men in the labour market. One-earner male breadwinner households are significantly more common in Poland

Figure 1: Marriage bonus or penalty for pensioners and working-age households



Source: Christl et al. (2021).

(25.9%) and Malta (29.3%) than in the other analysed countries. The share of women in part-time work can go above 60% in Germany and is around 40% in Belgium and Luxembourg. In contrast, only 6.2% of married women work part-time in Czechia, and 7.2% in Poland.

The share of men working part-time is generally substantially lower compared to women. Only 1% of men in Czechia and Malta are working part-time. We observe the highest part-time rate among married men in Belgium with 9.4%. We can also see that only 0.8% of married couples in Czechia live without earnings, while Ireland has the highest share of no-earner households (5%).

Table 1: Summary statistics of the labour market characteristics of married couples of working age (in %)

	Two earners Male breadw.	Two earners Female breadw.	One earner Male	One earner Female	No earners	Part-time Men	Part-time Women	Parents
BE	54.2	23.0	15.9	4.2	3.0	9.4	43.4	70.6
CZ	63.6	19.6	15.8	1.9	0.8	1.0	6.2	70.2
DE	66.4	14.7	14.6	3.0	1.3	5.3	60.1	65.2
ES	50.7	21.6	21.0	4.4	3.4	2.4	17.2	69.4
IE	49.6	22.0	19.3	4.1	5.0	6.2	31.0	76.0
LU	49.6	21.7	20.5	6.1	2.5	3.9	38.7	65.2
MT	46.3	22.1	29.3	1.2	1.9	1.0	14.9	63.4
PL	44.4	21.7	25.9	6.6	2.8	2.1	7.2	62.4

Note: EUROMOD estimations based on EU-SILC 2019. 'Parents' refers to couples that have dependent children.

Most of the married couples are parents, as highlighted in the last column of Table 1. Between 62.4% of married couples of working age in Poland and 76% in Ireland have dependent children.

Table 2 focuses on the differences between working-age married and cohabiting couples. Please note that the percentage of cohabiting couples in these countries is relatively low, so these differences might not be significant. In general, there is a higher share of one-earner male breadwinner households among married couples compared to cohabiting people, in particular in Spain (10.5%), Luxembourg (12.9%) and Malta (15.1%). Hence, fewer married women are working in these countries compared to non-married ones. The only exception is Czechia. Also, there is a tendency for a lower share of two-earner households among married couples, especially for two-earner female breadwinner households.

Additionally, a substantially higher share of part-time workers is among married women compared to cohabiting women, in particular in Germany (+31.5pp), Luxembourg (+17.2pp) and Ireland, Belgium and Malta (about 9pp). Although these differences might be related to the changes in family composition, such as the arrival of children, in these countries, as shown by [Christl et al. \(2021\)](#), the marriage bonus is significantly higher when one of the partners has a very low income compared to the other partner. This indicates financial incentives for the partner with less income (often the woman) to lower labour market participation.

Table 2: Labour market differences between married and cohabiting couples of working age (in pp)

	Two earners Male breadw.	Two earners Female breadw.	One earner Male	One earner Female	No earners	Part-time Men	Part-time Women	Parents
BE	-2.9	-3.9	5.0	3.5	-1.4	5.3	9.3	-10.0
CZ	1.5	4.1	-4.6	-0.1	-0.6	0.0	0.2	10.8
DE	4.9	-8.9	5.5	-0.8	-0.8	-2.4	31.5	31.9
ES	-2.3	-7.0	10.5	-1.7	1.5	-0.3	0.7	24.8
IE	-0.8	-2.2	5.1	-0.4	-1.7	0.5	8.9	20.3
LU	-7.6	-5.6	12.9	-1.2	0.3	-1.9	17.2	17.8
MT	-8.6	-7.2	15.1	-1.7	0.8	-1.7	8.5	11.9
PL	-5.1	-4.6	8.5	2.0	-0.2	0.7	1.1	13.4

Note: EUROMOD estimations for 2019 based on EU-SILC 2019. The numbers represent the values for married couples minus those for cohabiting couples. Parents refers to couples that have at least one dependent child.

We can also see that there is an important difference related to children. The share of parents is substantially higher among married couples than among cohabiting couples (between 31.9% in Germany and 10.8% in Czechia), except for Belgium. This highlights the impact of having children on the decision to marry, which is well documented in the literature (see, e.g., [Fisher \(2013\)](#)).

3.2. Incentives to work on the intensive margin

Empirically, labour supply on the intensive and extensive margin varies substantially with demographic characteristics, such as gender, education, marital status, health status and the presence of young children at home. The reason for these differences can be various. One of them is related

to the financial incentives that influence the relative value between leisure (including family commitments) and work, which plays a crucial role in the labour supply decision (see, e.g., [Blundell \(1995\)](#) or [Cai et al. \(2008\)](#)).

In this section, we focus on the incentives on the intensive margin. As shown before, women are more likely to be the second earner in a household, raising the question of whether this could result from lower financial incentives within the tax-benefit systems for second earners.

Table 3 shows the average METR of couples in all analysed countries by gender. Additionally, the “before marriage” scenario shows the effect on the METR in case a government decides to remove the financial advantages for married couples.⁴ In line with the literature, we observe higher METRs for couples in Belgium, Germany, Ireland, and Luxembourg compared to Spain, Malta and Poland. Additionally, men typically have higher METR than women because of higher average earnings. However, joint taxation might also influence this METR. As we can see in Germany and Luxembourg, the METRs for women and men in married couples are, on average, very similar.

Table 3: The average METR before and after marriage

	Married		Before marriage		Difference	
	women	men	women	men	women	men
BE	54.6	54.7	53.8	56.9	0.7	-2.2
CZ	27.5	29.1	27.5	29.6	0.0	-0.4
DE	42.1	41.7	37.0	45.3	5.1	-3.6
ES	24.7	30.0	22.6	31.5	2.1	-1.5
IE	40.7	43.3	38.6	45.0	2.2	-1.7
LU	44.6	44.6	41.1	48.1	3.4	-3.5
MT	24.1	27.1	25.6	30.0	-1.5	-2.9
PL	28.3	27.3	27.5	27.5	0.8	-0.2

Note: EUROMOD estimations for 2019 based on EU-SILC 2019. Before marriage refers to the scenario where married couples are treated as cohabitants by tax-benefit systems.

Assuming the absence of marriage-related advantages in the tax-benefit systems, we can identify the difference in METRs that arises due to specific tax rules related to marriage.⁵ As highlighted in Table 3, METRs for married women in Belgium would decrease by 0.7pp in the absence of the marriage bonus, while those for men would increase from 54.7 to 56.9. The biggest change in METRs can be found in Germany, where the average METR for women would be 5.1pp lower and for men 3.6pp higher in the absence of marriage-related tax advantages. The same empirical regularity can be found in Spain (women -2.1pp, men +1.5pp), Ireland (women -2.2pp, men +1.7pp), Luxembourg (women -3.4pp, men +3.5pp) and Poland (women -0.8pp, men +0.2pp).

⁴For more details on the METR distribution in the two scenarios, please refer to the graphs in the appendix.

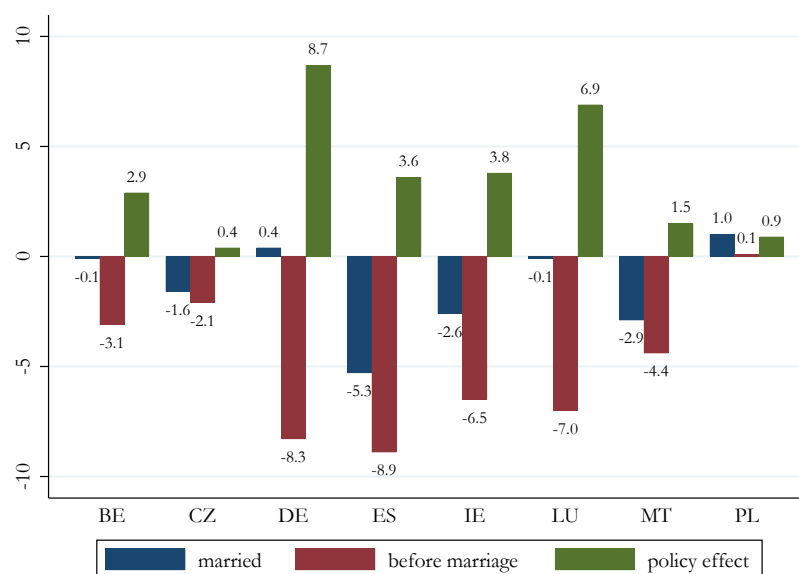
⁵The only exception is Malta, where the average METR is higher before the marriage. This is due to the means-tested social assistance, which is more generous for cohabiting couples with children than married couples with children (see [Christl et al. \(2021\)](#)).

These results imply that marriage increases the incentives to work more for men while substantially decreasing it for women in these countries.

Our methodology allows us to calculate the policy impact on the gender gap in METRs that arises due to the special treatment of married couples within the tax-benefit systems. We define the gender gap in METRs as the difference between the women’s METRs and the men’s METRs. A positive gender METR gap indicates that men are more incentivised to work than women. On the contrary, a negative gender METR gap indicates that METRs for women are lower than for men; hence women have higher incentives to increase their time at work.

The policy effect, defined as the difference between the gender gap in METR before the marriage and the gender gap in METR after marriage, is the highest in Germany (8.7pp), where the gender gap in METRs for married couples is almost entirely closed by the tax-benefit system (Figure 2). The same holds for Luxembourg, where the gender gap in METRs would be 7pp without marriage-related fiscal benefits in the tax-benefit system. High policy impacts are also found in Belgium (2.9pp), Spain (3.6pp) and Ireland (3.8pp). To put it in context: without marriage-related tax-benefit advantages, a marginal increase in earnings⁶ for a German man would be taxed 8.3pp higher than the same increase in earnings for a woman. After marriage, the METR increases substantially for women. The gender gap in METRs closes entirely due to the joint taxation, resulting in slightly higher METRs for women than married men. Hence, the incentives to increase the number of working hours for women decrease significantly after marriage.

Figure 2: The gender gap in METR before and after marriage



Note: EUROMOD estimations for 2019 based on EU-SILC 2019. Before marriage refers to the scenario where married couples are treated as cohabitants by tax-benefit systems.

⁶The METR calculated by the MTR Add-on in EUROMOD assumes an increase of 3% of gross earnings.

To conclude, women generally face substantially lower METRs before marriage, while the METRs for men are substantially higher before marriage than after marriage. This highlights the marriage-biased and gender-biased impact of tax-benefit systems on incentives to work on the intensive margin. On the one hand, due to joint income taxation and other marriage-related components of tax-benefit systems, financial incentives to work more hours will increase for the spouse with higher income, typically a man. On the other hand, financial incentives to work more hours will decrease for the spouse with a lower income (second earner), usually a woman.

3.3. *Incentives to work on the extensive margin*

To dig further into the impact of the unequal treatment of marriage and gender within the tax-benefit systems, we analyse the changes in the NRRs for men and women, a measure for labour supply incentives for couples on the extensive margin. The NRR calculates the replacement income if one of the partners drops out of the labour market and receives replacement income (such as unemployment benefits or social assistance).

Table 4 shows the average NRR of married women and men in all analysed countries. It is then compared to the “before marriage” scenario, which shows the effect on the NRR in case a country decides to abolish the financial advantages for married couples, or, in other words, what would be the NRR for couples in case they were not married.⁷ In general, Luxembourg, Germany and Belgium are the countries with very high NRRs for married women (well above 80%) and men (well above 70%). The lowest NRRs for both women and men are in Poland and Malta. Women, on average, show substantially higher NRRs than men in case of dropping from the labour market, mainly because their income usually represents a lower share of total households’ income. Additionally, benefits in case of unemployment often have top ceilings, implying that the NRR is generally higher for low-income earners (often women) than for high-income earners.

On average higher NRRs for women than for men might work to the detriment of women when deciding who in a couple has to drop out of the labour market (i.e., because of the increased need to take care of children or relatives). Financially, a household is on average better off if the second earner – mainly a woman – drops out of the labour market. The difference in most countries amounts to about 10% of the household’s disposable income.

Looking at the impact of the different treatment of marriage within the tax-benefit systems (Table 4), we find that in most countries, the NRRs are increasing due to the special treatment of marriage, indicating that incentives to move from employment to unemployment increase after a couple is married.⁸ Marriage, on average, increases the NRR of both women and men in Germany (1.6pp and 1pp, respectively), Spain (0.9pp and 0pp, respectively), Ireland (0.6pp and 0.3pp, respectively), Malta (1.9pp and 1.1pp, respectively) and Czechia (3.1pp and 2.6pp, respectively). In Luxembourg and Poland, women before marriage face, on average, slightly lower NRRs, while the opposite is true for men. In Belgium, both married men and women would face higher NRRs in the absence of marriage bonuses.

⁷For more details on the NRR distribution in the two scenarios, please refer to the graphs in the appendix.

⁸This result is in line with [Christl et al. \(2021\)](#), who show that the marriage bonus is higher in couples with only one earner or couples with two earners and a very different amount of income between the two partners.

Table 4: The average NRR before and after marriage

	Married		Before marriage		Difference	
	women	men	women	men	women	men
DE	86.3	76.4	84.7	75.4	1.6	1.0
CZ	75.0	63.0	71.8	60.4	3.1	2.6
BE	82.9	72.0	85.0	74.3	-2.1	-2.4
ES	76.1	62.4	75.2	62.4	0.9	0.0
IE	73.8	62.5	73.2	62.2	0.6	0.3
LU	92.3	86.0	92.1	86.3	0.1	-0.3
MT	68.4	55.8	66.5	54.6	1.9	1.1
PL	69.0	58.9	68.9	59.2	0.2	-0.4

Note: EUROMOD estimations for 2019 based on EU-SILC 2019. Before marriage refers to the scenario where married couples are treated as cohabitants by tax-benefit systems.

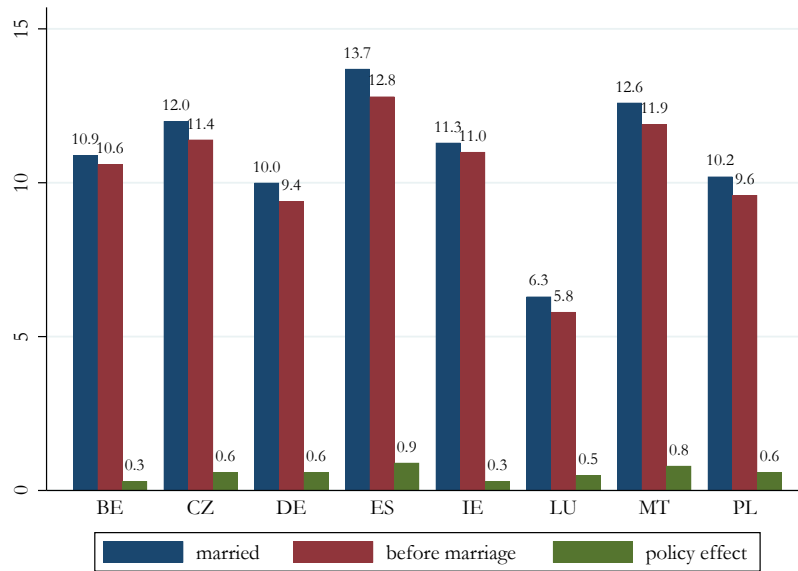
As mentioned, the gender gap in NRRs among married couples is enormous (see Figure 3). It ranges from 13.7pp in Spain to 6.3pp in Luxembourg. To put this in context, in Spain, a married couple would lose about 13.7pp more disposable income if the man becomes unemployed compared to if the woman loses her job. However, this gender gap is only marginally affected by the marriage-related tax-benefit policies. In all analysed countries, the policy effect (of treating married couples differently from cohabiting ones) leads to an increase, although minor (below 1pp), in the average NRRs, meaning that it slightly decreases labour market incentives for married women on the extensive margin.

To conclude, different treatment of married and non-married couples within the tax-benefit systems changes the NRRs and influences the labour supply incentives on the extensive margin. It particularly increases the gender NRR gap for married couples. This indicates that the tax-benefit systems further decrease the incentives for married women on the extensive margin, making the impact also gender-biased. However, compared to the reduction in incentives on the intensive margin highlighted in the subsection above, changes on the extensive margin are substantially less significant.

3.4. Tax-benefit systems, incentives to work and labour market outcomes

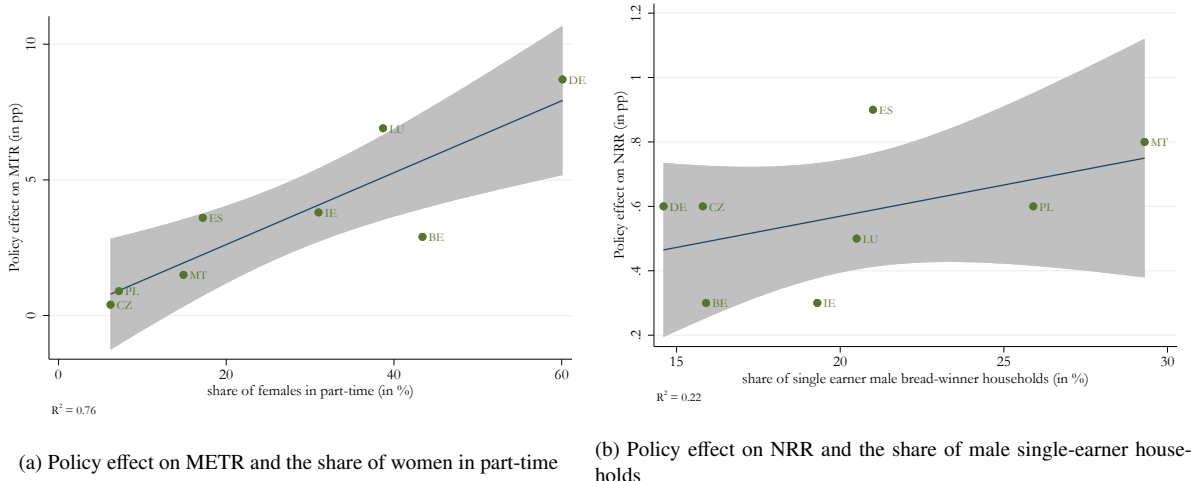
In this last subsection, we look at the cross-country dimension of our data to link the labour market characteristics of married couples in our sample countries with the impact of the marriage-related policies. Figure 4 highlights the correlation between the policy effects of the tax-benefit system on both the incentives to work on the intensive margin (METR) and the extensive margin (NRR) and the related labour market impact. We focus on the impact of the tax-benefit system on the gender inequalities related to our work incentive indicators (METR and NRR) within married couples. As shown in Figure 4a, in countries with high policy effects on the intensive margin for married women, the share of married women working part-time is substantially higher than in those with a low policy effect. Please note that this result can not be interpreted as causal.

Figure 3: Gender gap in NRR before and after marriage



Note: EUROMOD estimations for 2019 based on EU-SILC 2019. Before marriage refers to the scenario where married couples are treated as cohabitants by tax-benefit systems.

Figure 4: Correlation between policy effects and labour market outcomes



Note: EUROMOD estimations for 2019 based on EU-SILC 2019.

The correlation between the policy effects of the tax-benefit system on the incentives to work on the extensive margin (NRR) and the related labour market outcome is highlighted in Figure 4b. We see that in countries with high policy effects on the extensive margin for married women (in countries where the tax-benefit system increases the incentives to drop from the labour market for women to a larger extent compared to men), the share of male single-earner households is higher than in those with a low policy effect. The correlation, however, seems to be weak, and in general, the impact of the tax-benefit system on the NRR is relatively small in our set of countries compared to the impact on the METR. Again, please note that in any case, this result can not be interpreted as causal.

4. Conclusions and discussion

As shown empirically by [Christl et al. \(2021\)](#), there are no (substantial) financial gains from marriage for more than half of the EU countries. However, cohabiting and married couples in the other Member States are treated unequally within its tax-benefit systems. Depending on the country, the strength of the unequal treatment varies substantially. In Luxembourg, Germany, Ireland, Spain, Poland, Czechia, Malta and Belgium, married couples of working age have significant financial advantages compared to cohabiting couples, mostly due to joint taxation or tax allowances and credits that offer married couples to opportunity to share the tax burden.

In this paper, we take a step further and investigate the tax-benefit systems' impact on the labour supply of married couples by estimating the METR and NRR of each individual in married couples of working age. We show that due to the marriage bonus, the work incentives both on the intensive margin (measured by the METR) as well as on the extensive margin (measured by the NRR) are decreased for women within married couples, especially so on the intensive margin. In contrast, for men, the incentives increase once married, pointing to the marriage-biased and gender-biased tax-benefit structures in the analysed countries.

We show that, in general, there is a substantial gender gap in METRs before marriage, meaning that men in couples face higher marginal effective tax rates than women on average. However, after marriage, tax-benefit systems almost completely offset these gaps by reducing METRs for men while increasing them for women. Additionally, the gender gap in the NRRs for couples before marriage is quite high: the NRRs for women in couples is about 10pp higher than for men. After marriage, tax-benefit rules further increase this gender gap, although slightly, indicating that the labour supply incentives on the extensive margin are decreasing for married women but increasing for men on average.

Although joint income tax filing or other marriage-related financial incentives may result in household financial gain, the second earner will not necessarily benefit from it. It is assumed that financial gains are shared equally within a family, but [Ponthieux \(2013\)](#) shows that this is not always true in EU countries. Since women usually earn less than men, they would gain more from being taxed at an individual rather than a joint tax rate ([Himmelweit, 2002](#)). Coupled with the fact the METRs and NRRs increase once women are married, joint income taxation might look like an important hindrance to the usual goals of policymakers to increase female labour market participation on both the extensive and intensive margins. We see a strong correlation between the policy impact of the marriage-related policies and the share of married women in part-time

employment. In countries with high-impact marriage-related policies on the gender gap, METRs align with a high percentage of married women working part-time.

At the European level, in 2017, the European Parliament's Committee on Women's Rights and Gender Equality⁹ drew attention to the explicit and implicit gender bias inherited in taxation policies. It was noted that joint taxation lessens the redistributive power of income taxation, effectively taxing second earner's income (primarily women) at a higher rate than that of the main earner, disincentivizing married women from accessing the labour market and therefore contributing to unequal reallocation of paid and unpaid work within a family.¹⁰ At the beginning of 2019 the European Parliament¹¹ voted for a handful of actions calling to move to an individual taxation and to eliminate all tax allowances or credits for a spouse with little income while maintaining financial and other benefits linked to parenthood. It was stressed that personal income structures should be designed to actively promote equal sharing of paid and unpaid work, income and pension rights. Similarly, the Gender Equality Strategy 2020-2025¹² underlines that taxation and social protection systems should not perpetuate structural gender inequalities based on traditional gender norms so that both women and men can thrive in a gender-equal economy.

To conclude, from a gender equality point of view, having marriage-related tax-benefit components might disincentivise the second earners – mostly women – from (fully) participating in the labour market and, therefore, might contribute to further perpetuating traditional gender norms and unequal sharing of paid and unpaid work. Furthermore, marriage bonuses contribute to a lock-in effect, where the second earner, typically a woman, is incentivised to work, with severe economic consequences in the future, ranging from lower pension entitlements to strong economic dependence on the partner.

Additionally, the unequal treatment of married and non-married couples violates vertical and horizontal equity principles. First, a second earner in the married couple might be effectively paying higher tax rates than the main earner. Second, couples with the same income might be paying different tax dues only because of their marital status. Therefore, from both an equity and a gender equality point of view, it would be desirable to abolish marriage-related tax-benefit components. Future research could investigate further whether there is a causal relationship between the monetary incentives related to marriage and the labour market outcome of married women.

⁹see [Gunnarsson et al. \(2017\)](#).

¹⁰If remain unemployed for longer, lower contributory periods to social security schemes may leave women with reduced entitlements to pension rights and increased risk of poverty in older age. In addition, in case of a divorce, women may find themselves in a precarious situation since their position in the labour market can be strongly limited by the decisions that were taken while married.

¹¹see [European Parliament resolution of 15 January 2019 on gender equality and taxation policies in the EU](#)

¹²In this strategy, the European Commission pledges to develop guidance for the Member States on how national tax and benefit systems can incentivise or disincentivise second earners. See [A Union of Equality: Gender Equality Strategy 2020-2025](#)

References

- Bick, Alexander and Nicola Fuchs-Schündeln**, “Quantifying the disincentive effects of joint taxation on married women’s labor supply,” *American Economic Review*, 2017, 107 (5), 100–104.
- Blundell, Richard W.**, “The Impact of Taxation on Labour Force Participation and Labour Supply,” *OECD Jobs Study Working Papers*, 1995, (8).
- Cai, Lixin, Guyonne Kalb, Yi-Ping Tseng, and Ha Vu**, “The Effect of Financial Incentives on Labour Supply: Evidence for Lone Parents from Microsimulation and Quasi-Experimental Evaluation,” *Fiscal Studies*, 2008, 29 (2), 285–325.
- Christl, Michael, Silvia De Poli, and Viginta Ivaškaitė-Tamošiūnė**, “Does it pay to say “I do”? Marriage bonuses and penalties across the EU,” *JRC Working Papers on Taxation and Structural Reforms*, 2021, 2021-7.
- Coelho, Maria Delgado, Aieshwarya Davis, Mr Alexander D Klemm, and Ms Carolina Osorio Buitron**, *Gendered Taxes: The Interaction of Tax Policy with Gender Equality*, International Monetary Fund, 2022.
- Crossley, Thomas F. and Sung-Hee Jeon**, “Joint taxation and the labour supply of married women: Evidence from the Canadian tax reform of 1988,” *Fiscal Studies*, 2007, 28 (3), 343–365.
- de Quinto, Alicia, Laura Hospido, and Carlos Sanz**, “The child penalty: evidence from Spain,” *SERIEs*, 2021, 12 (4), 585–606.
- Eurofound**, *Striking a balance: Reconciling work and life in the EU*, Publications Office of the European Union, 2018.
- Figari, Francesco, Herwig Immervoll, Horacio Levy, and Holly Sutherland**, “Inequalities within couples in Europe: Market incomes and the role of taxes and benefits,” *Eastern Economic Journal*, 2011, 37 (3), 344–366.
- Fisher, Hayley**, “The effect of marriage tax penalties and subsidies on marital status,” *Fiscal Studies*, 2013, 34 (4), 437–465.
- Gunnarsson, Åsa, Margit Schratzenstaller, and Ulrike Spangenberg**, *Gender equality and taxation in the European Union: Study for the FEMM Committee*, Policy Department C: : Citizens’ Rights and Constitutional Affairs, 2017.
- Gustafsson, Siv**, “Separate taxation and married women’s labor supply,” *Journal of population economics*, 1992, 5 (1), 61–85.
- Himmelweit, Susan**, “Making visible the hidden economy: The case for gender-impact analysis of economic policy,” *Feminist Economics*, 2002, 8 (1), 49–70.
- Jara, H Xavier and Alberto Tumino**, “Tax-benefit systems, income distribution and work incentives in the European Union,” *The International Journal of Microsimulation*, 2013, 6 (6), 27–62.
- Kabatek, Jan, Arthur Van Soest, and Elena Stancanelli**, “Income taxation, labour supply and housework: A discrete choice model for French couples,” *Labour Economics*, 2014, 27, 30–43.
- Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaard**, “Children and gender inequality: Evidence from Denmark,” *American Economic Journal: Applied Economics*, 2019, 11 (4), 181–209.
- , —, **Johanna Posch, Andreas Steinhauer, and Josef Zweigmüller**, “Child penalties across countries: Evidence and explanations,” in “AEA Papers and Proceedings,” Vol. 109 2019, pp. 122–26.
- Maceira, Helena Morais**, “Economic benefits of gender equality in the EU,” *Intereconomics*, 2017, 52 (3), 178–183.
- Madgavkar, Anu, Kweilin Ellingrud, and Mekala Krishnan**, “The economic benefits of gender parity,” *McKinsey & Company*, 2016.
- Mascherini, Massimiliano, Martina Bisello, Irene Rioboo Leston et al.**, “The gender employment gap: Challenges and solutions,” 2016.
- Ponthieux, Sophie**, “Income pooling and equal sharing within the household — What can we learn from the 2010 EU-SILC Module? Eurostat Methodologies and Working Papers. Luxembourg: Publications Office of the European Union,” 2013.
- Sutherland, Holly and Francesco Figari**, “EUROMOD: the European Union tax-benefit microsimulation model,” *International Journal of Microsimulation*, 2013, 6 (1), 4–26.

Appendix A. The distribution of METRs and NRRs

Figure A.1: METRs in Belgium

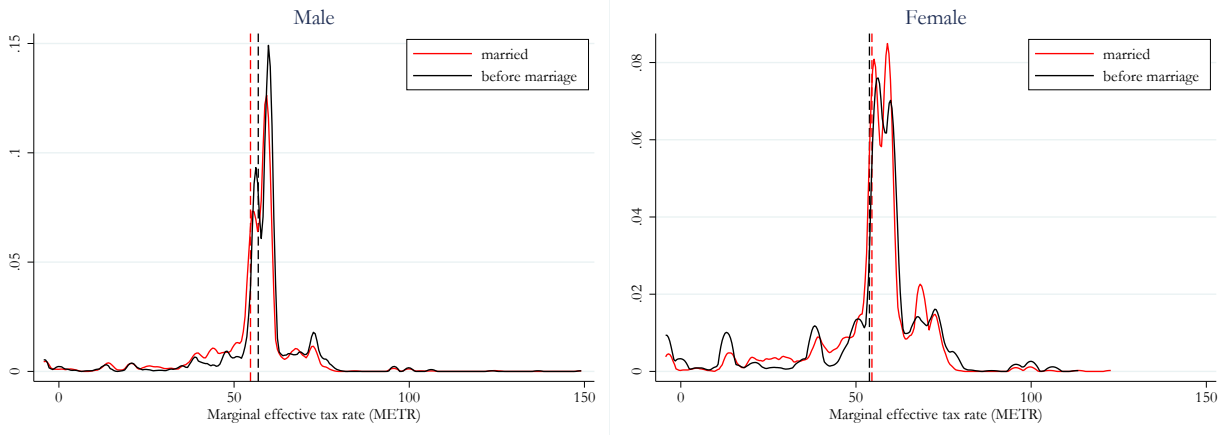


Figure A.2: METRs in Czechia

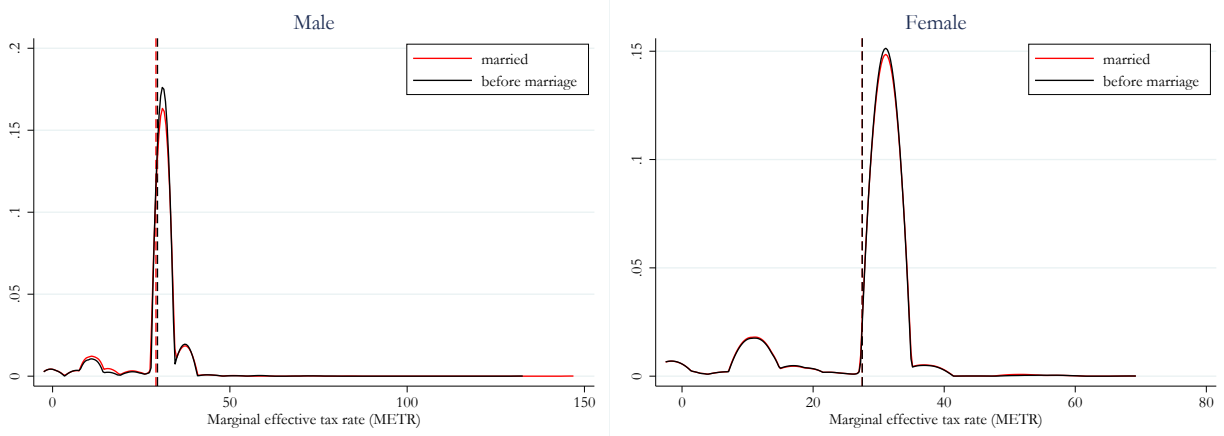


Figure A.3: METRs in Germany

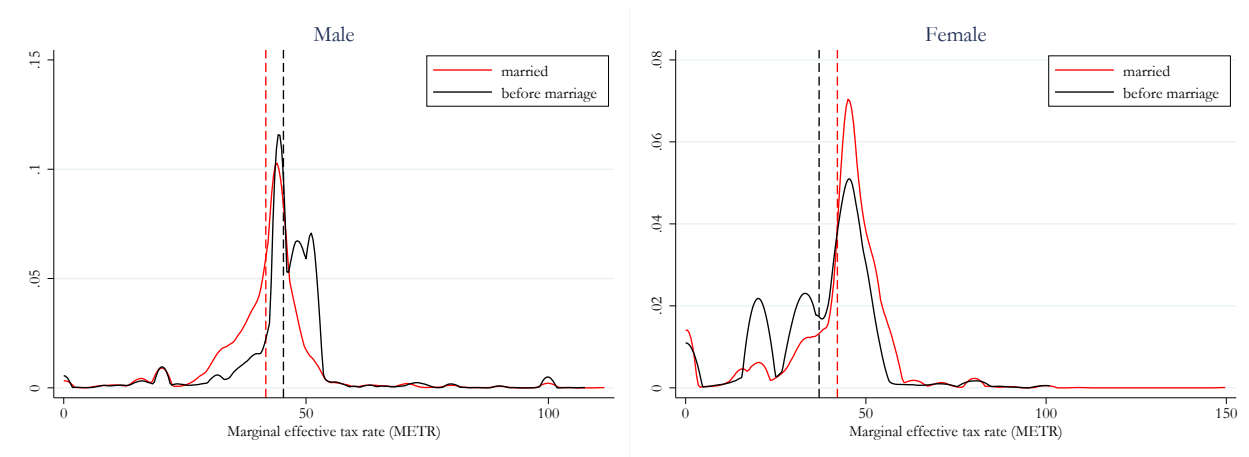


Figure A.4: METRs in Spain

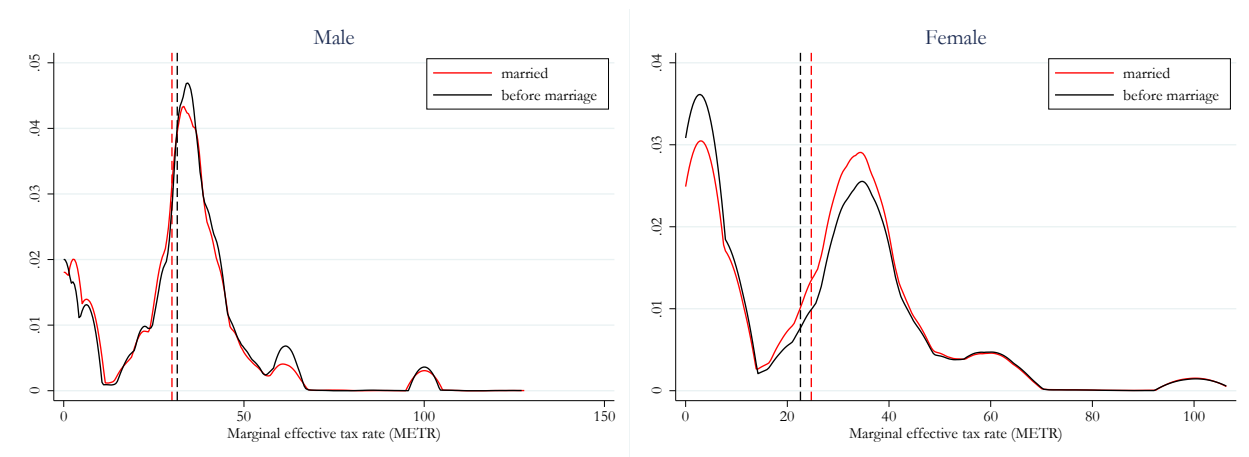


Figure A.5: METRs in Ireland

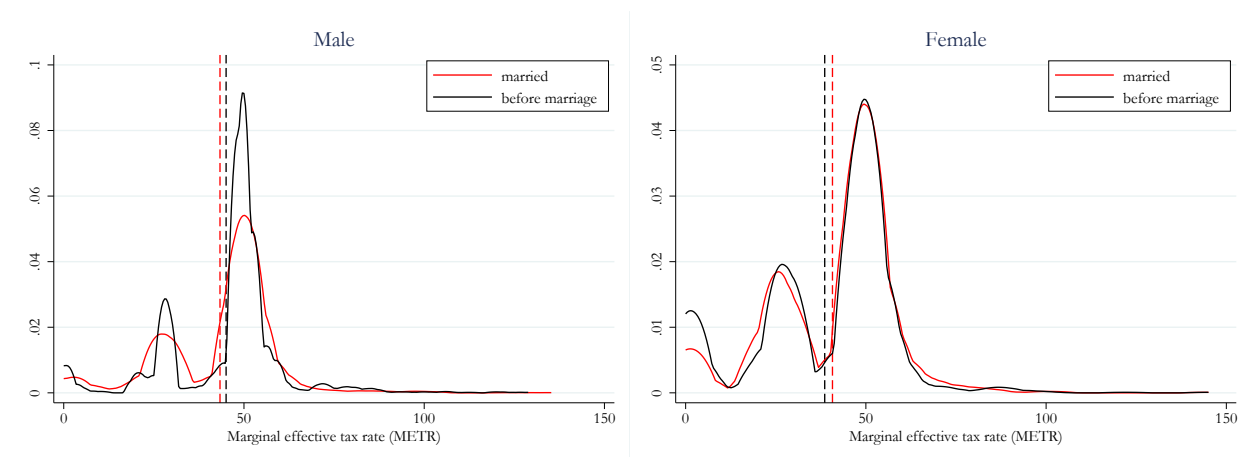


Figure A.6: METRs in Luxembourg

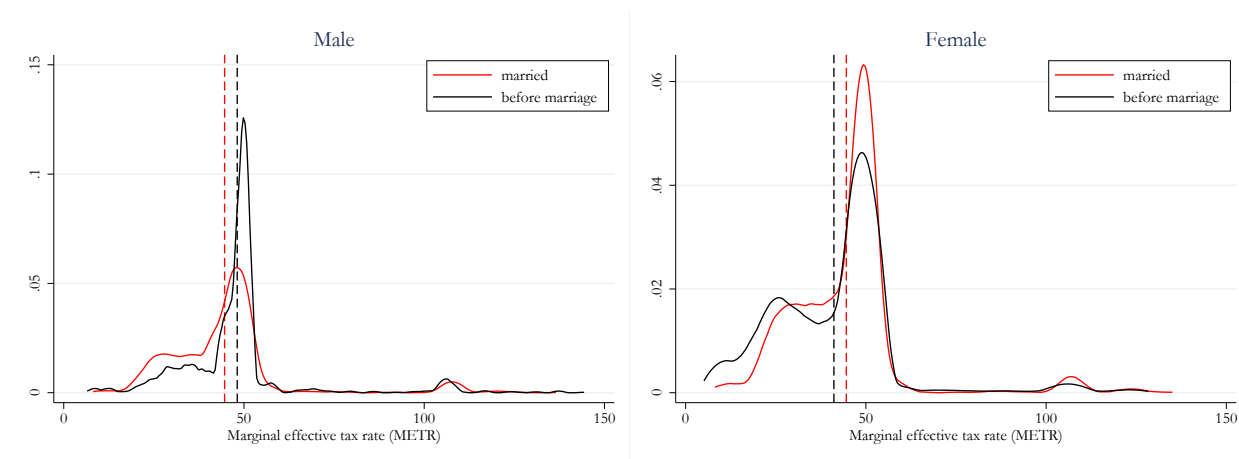


Figure A.7: METRs in Malta

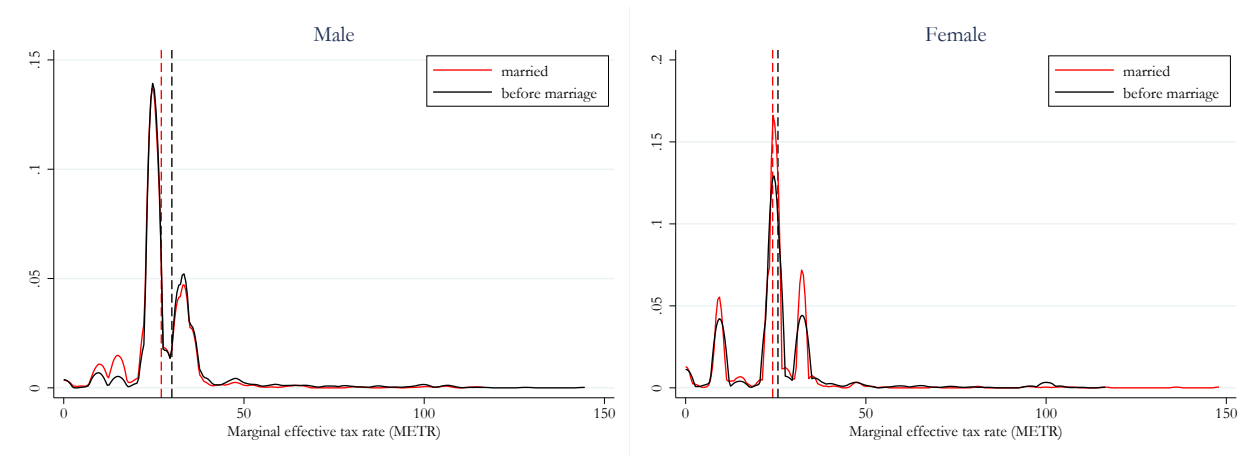


Figure A.8: METRs in Poland

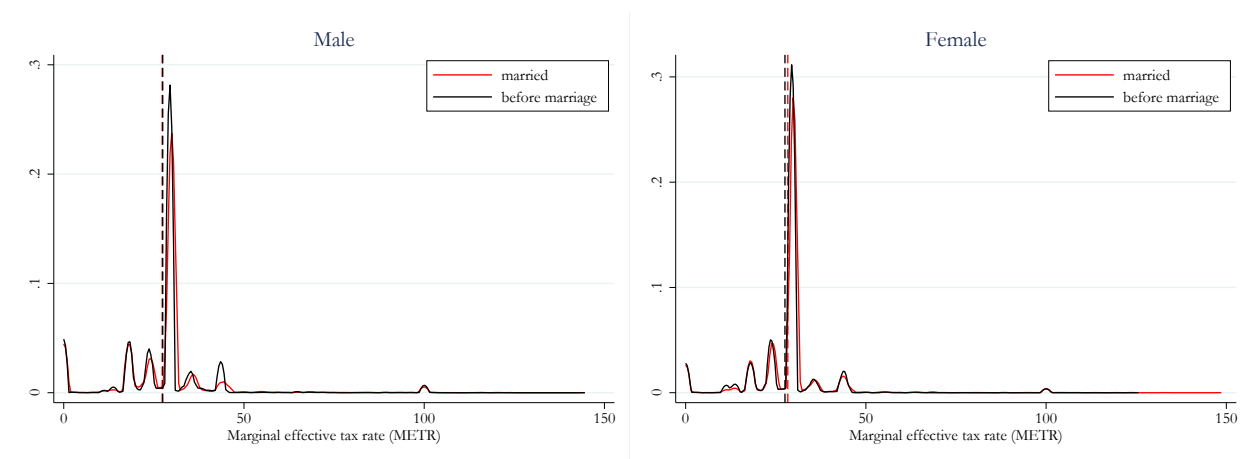


Figure A.9: NRRs in Belgium

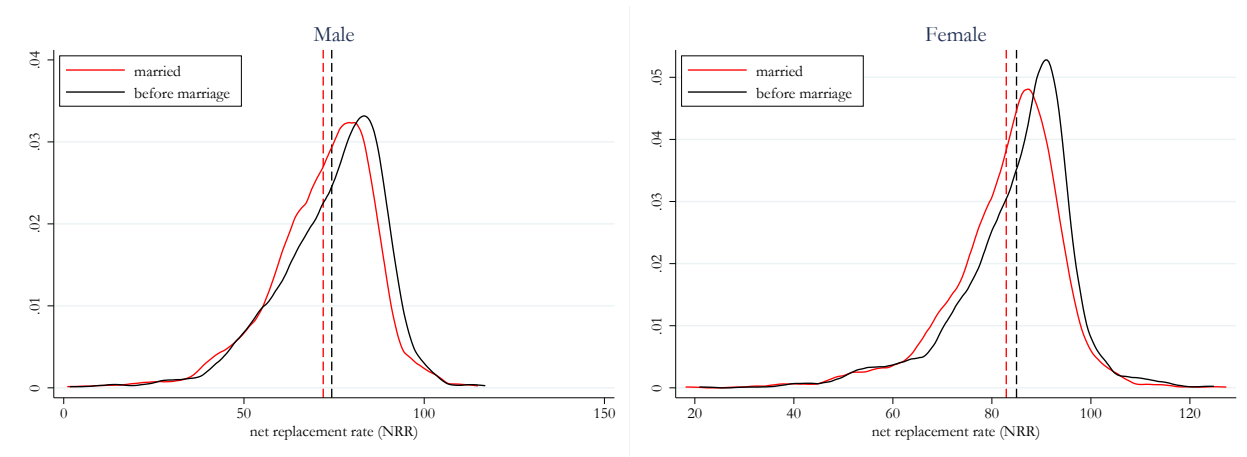


Figure A.10: NRRs in Czechia

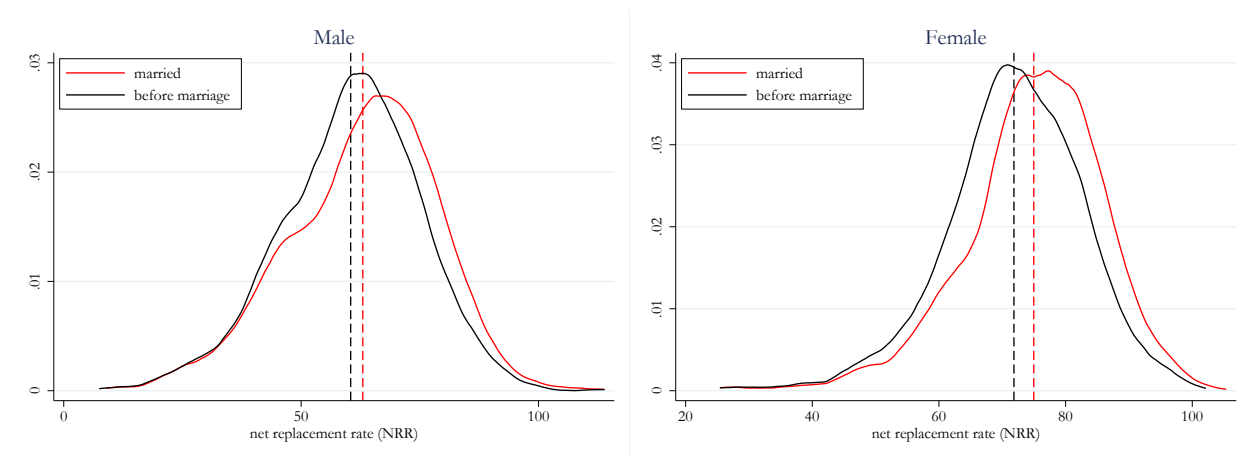


Figure A.11: NRRs in Germany

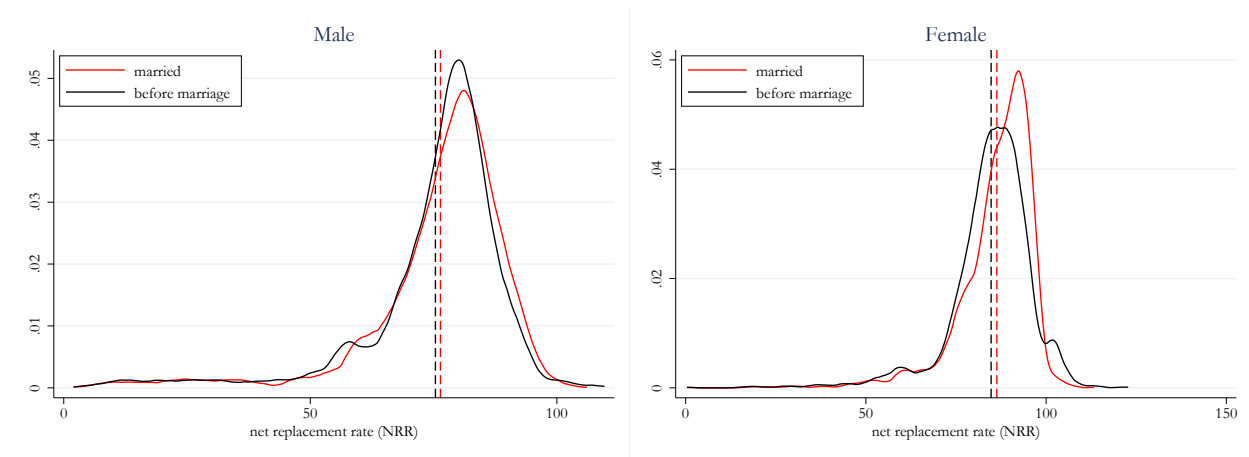


Figure A.12: NRRs in Spain

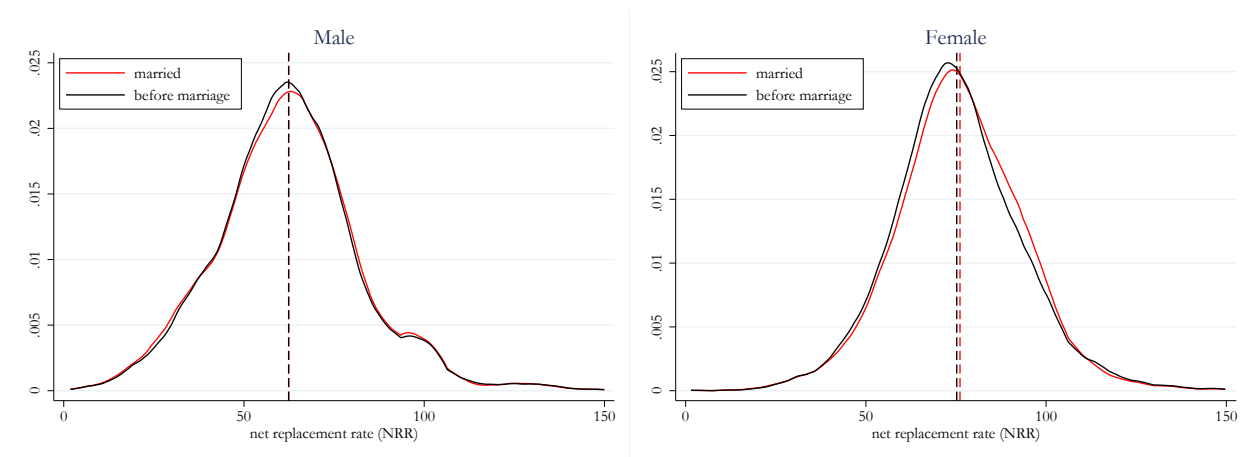


Figure A.13: NRRs in Ireland

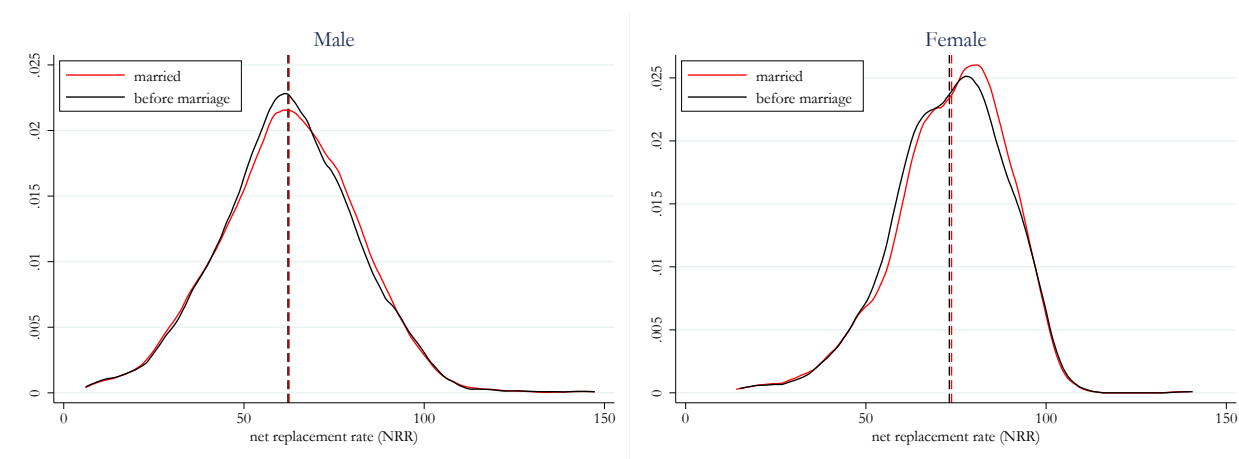


Figure A.14: NRRs in Luxembourg

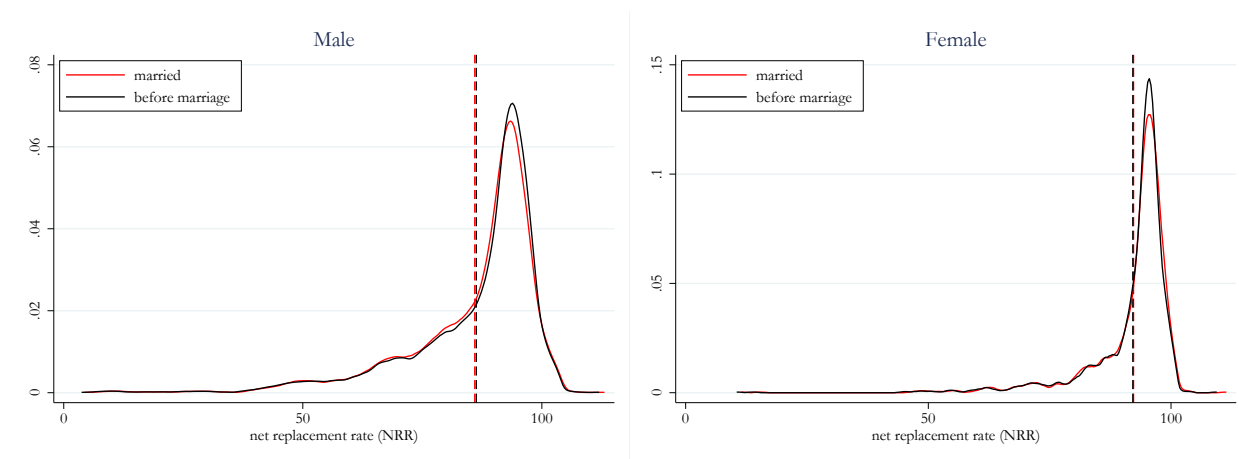


Figure A.15: NRRs in Malta

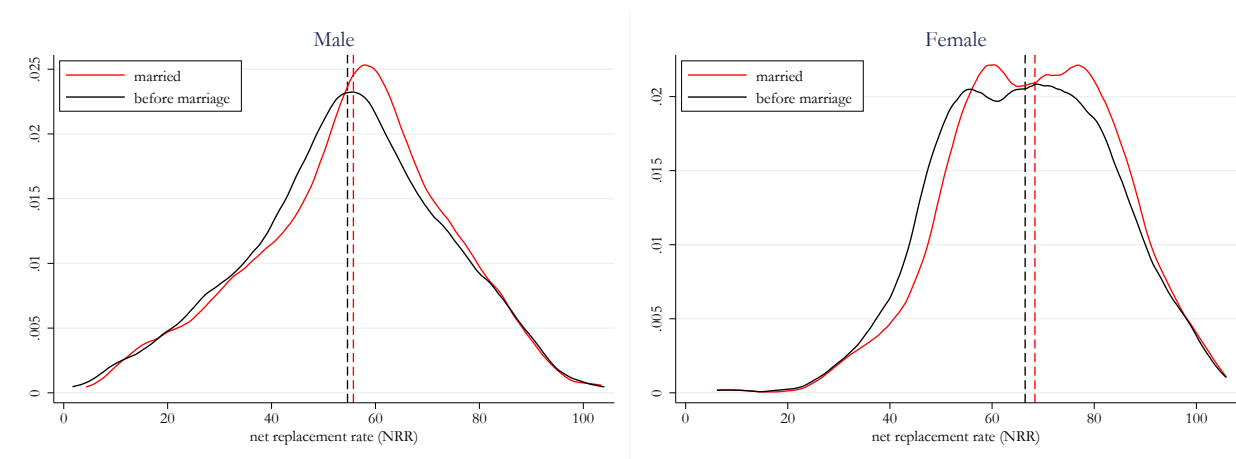
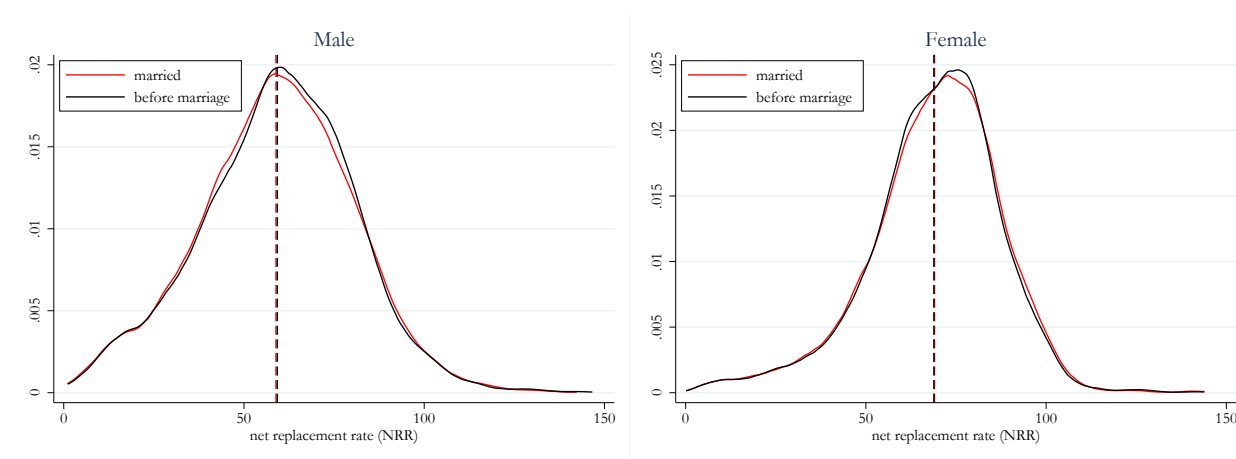


Figure A.16: NRRs in Poland



GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696, or
- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from EU Bookshop at: <https://publications.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).



The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.



EU Science Hub

ec.europa.eu/jrc



@EU_ScienceHub



EU Science Hub - Joint Research Centre



EU Science, Research and Innovation



EU Science Hub